

# SYLLABUS

FOR

## B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)  
(SEMESTER-I)

Examinations: 2018–19



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**GURU NANAK DEV UNIVERSITY**  
**AMRITSAR**

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### Combination of Subjects for B.A./B.Sc.

#### Compulsory Subjects: Two

1. English (Compulsory)
2. Punjabi (Compulsory) / Basic Punjabi (ਮੁੱਢਲੀ ਪੰਜਾਬੀ)/ Punjab History & Culture

#### Elective Subjects: Three

(A candidate shall select three subjects in all selecting not more than one subject from any of the following sets of combinations) :-

#### Group Subjects:

1. English / Hindi / Punjabi / Sanskrit / Bangla / Urdu / Persian / Tamil / Assamese / French / Arabic / Russian / German.
2. Economics / Defence Studies / Sociology / Fine Arts / Education / Adult Education / History of Arts / Applied Arts / Sculpture / Human Rights.
3. History / Mathematics / Psychology / Ancient Indian History & Culture / Folk Arts and Culture/ Quantitative Techniques / Religious Studies.
4. Political Science / Indian Classical Dance / Stat. / App. Stat. / Commerce / Electronics.
5. Public Admn. / Home Science / Physical Education / Computer Science / Dramatic Arts.
6. Philosophy / Geography / Music Vocal / Music Inst. / Tabla / Rural Development / Agriculture Economics and Marketing / Industrial Economics/ Travel and Tourism.

#### Note:

1. The candidates shall be asked to offer both Hindi & Sanskrit as elective subjects from Group No. 1.
2. The candidates shall also be allowed to offer both Music (Vocal) & Music (Instrumental) as Elective Subjects from Group No. 6.
3. The combination of Home Science with Computer Science as Elective subject is allowed.
4. The blind candidates shall be allowed to offer any two elective subjects out of Music (Vocal), Music (Instrumental) and Tabla from Group No. 6.
5. The subject of Environmental Studies will be taught in 2nd year of all the undergraduate degree classes from the Session 2007-08. However, if a candidate fails to pass this paper in the 2nd year, two consecutive chances i.e. one supplementary and other along with 3rd year may be given to him/her. The marks obtained by the candidate in this paper will not be added to the total marks obtained, and the result will be entered as "Pass" in the DMC of the third year certificate if he/she obtains at least 35% marks in the paper.

6. The subject of “Drug Abuse: Problem, Management and Prevention” will be taught in I<sup>st</sup> year (I<sup>st</sup> and 2<sup>nd</sup> Semester) of all the undergraduate degree classes from the Session 2017–18. However, if a candidate fails to pass this paper in the I<sup>st</sup> year, two consecutive chances i.e. one supplementary and other along with 2<sup>nd</sup> year may be given to him/her. The marks obtained by the candidate in this paper will not be added to the total marks obtained, and the result will be entered as "Pass" in the DMC of the third year certificate if he/she obtains at least 35% marks in the paper.
7. The candidates shall also be allowed to offer both Music (Vocal) & Tabla as Elective Subjects from Group No. 6.
8. Change Name of Subject Commercial Art to Applied Arts vide Syndicate Para No. 91 Dated 16-06-2016.

## VOCATIONAL SUBJECTS

**Note: The candidate can choose one/two vocational subjects from the following groups, only one subject to be chosen from each group.**

### GROUP-I

Journalism & Mass Communication, Mass Communication & Video Production, Office Management & Secretarial Practices, Tax Procedure & Practices, Advertising Sales Promotion & Sales Management, Tourism & Hotel Management, Tourism & Travel Management, Still Photography & Audio Production, Gemology & Jewellery Design, Functional English, Functional Sanskrit, Functional Punjabi, Functional Hindi, Hindi Patrakarita.

### GROUP-II

Food Science & Quality Control, Early Childhood Care & Education, Fashion Designing & Garment Construction, Cosmetology, Clinical Nutrition & Dietetics, Industrial Microbiology, Biotechnology, Bioinformatics, Dairy Farming.

### GROUP-III

Computer Maintenance, Computer Applications, Refrigeration & Air Conditioning, Automobile Maintenance, Information Technology, Information Technology Specialization Software Development.

**Note: 1. The Subject of 'Human Genetics' may be offered as an elective subject in combination with any other Life Sciences subject, with English, Punjabi and Chemistry being compulsory subjects.**

**Note: 2. Tourism & Hotel Management should not be taken alongwith Tourism and Travel Management.**

**SEMESTER-I**  
**POLITICAL SCIENCE**

**PRINCIPLES OF POLITICAL SCIENCE**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Political Science: Meaning, Nature and Scope, Traditional & Modern View.
2. Relationship of Political Science with Economics, History, Sociology and Psychology.

**SECTION-B**

1. State: Definition, Elements and its distinction from Government and Society.
2. Theories of the Origin of State: Social Contract, Historical/Evolutionary and Marxian Theory.

**SECTION-C**

1. State: Liberal, Marxian and Gandhian Views of State.
2. Welfare State: Concept and Functions of Welfare State

**SECTION-D**

1. Sovereignty: Definition, Attributes and Types of Sovereignty.
2. Theories of Sovereignty: Monistic and Pluralistic.
3. Electorates and Electoral Systems.

**Recommended Books:-**

1. J. C. Johari, *Principles of Political Science*, Sterling Publishers, New Delhi.
2. S.P. Verma, *Political Theory*, Geetanjali Publishing House, New Delhi.
3. A.C. Kapur, *Principles of Political Science*, S. Chand & Company, New Delhi.
4. E. Asirvatham, *Political Theory*, S. Chand & Company, New Delhi.
5. M.P. Jain, *Political Theory*, Authors Guild Publication, Delhi, (Punjabi & Hindi).
6. David Easton, *The Political System*, Scientific Book Agency, Calcutta.
7. D.C. Bhattacharya, *Political Theory*, Vijay Publishing House, Calcutta.
8. O.P. Gauba, *An Introduction to Political Theory*, Macmillan Indian Ltd., New Delhi.
9. Satish Kumar Sharma, *Adhunik Rajnitik Vishleshan*, Publication Bureau, Punjabi University, Patiala.
10. Andrew Heywood, *An Introduction to Political Theory*, New Delhi, Palgrave Publications, 2004.
11. Aeon J. Skoble and Tibor R. Machan, *Political Philosophy*, 1st Edition, New Delhi, Pearson, 2007.
12. John Hoffman & Paul Graham, *Introduction to Political Theory*, Pearson, 2007.
13. Catriona Mckinnon, *Issues in Political Theory*, Oxford, 2009.
14. R.C Varmani, *Understanding Political Theory: Concepts and Issues*, Gitanjali, 2011.
15. Andrew Heywood, *Key Concepts in Politics*, Palgrave, 2011.
16. -----, *Politics*, Palgrave, 2013.
17. E Asirvatham & K.K Mishra, *Political Theory*, S. Chand, 2012.
18. N.D Arora, *Introduction to Political Theory*, Har-Anand, 2012
19. R.Bhargava, *Political Theory : An introduction*, Pearson, 2013
20. Anthony H.Birchi, *The concepts and Theories of Modern Democracy*, Routledge, 2013
21. Hoveyta Abbas & Ranajay Kumar, *Political Theory*, Pearson, 2012
22. S.P Verma, *Modern Political Theory*, Vikas, 2005.
23. David Heft, *Political Theory and the Modern State*, Worldview, 1998

**SEMESTER-I**

**HISTORY**

**HISTORY OF INDIA UPTO C. 1000**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- Sources:** Meaning of the term 'ancient', Literary sources Vedic literature, Epics and Puranans, Buddhist and Jain texts, Sangam literature; Accounts of Indians and foreigners; Archeological Sources; Coins, Inscriptions and Monuments.
- The Indus Civilization:** Origin; Harappa and Mohenjodaro; Political organization; Town-planning and architecture; Agriculture, technology; Trade contacts with the outside world; Religion; Script, Seals and Figurines, Causes of disintegration.

**SECTION-B**

- The Indo Aryans:** Original home; Geographical area known to Vedic texts; Social Institutions: Family, Varna and the Caste system, Religious ideas and rituals; Economy; Political Organization—Changes in the later Vedic period; Emergence of the republics and kingdoms; Growth of towns.
- Jainism and Buddhism:** Social and political conditions; Doctrines of Jainism and sectarian development; Teachings of Gautam Buddha; The Sangha organization; Spread of Buddhism; its decline, Legacy of Buddhism and Jainism.

**SECTION-C**

- The Age of the Mauryas:** Establishment of the Mauryan Empire; Expansion of the empire; the Kalinga War; Polity and administration; Contacts with neighbouring states; Ashoka's Dhamma; Decline of the Mauryan empire.
- The Kushanas:** Kanishka and his successors; Mahayana Buddhism; Gandhara Art; Literature. **The Gupta Age:** Establishment of the Gupta Empire; its expansion under Samundragupta and Chandragupta-II; Administration; Revenue system; Trade and Commerce; Art and architecture; Literature and philosophy; Science and Technology. The Huna invasions and the decline of the Gupta Empire.

**SECTION-D**

- The Age of the Vardhanas:** Establishment of Vardhana kingdom; Harsha's campaigns and political relations; Sources of revenue; Patronage of religion, Literature and education.
- The Cholas:** Important centres of power in the South; Establishment of the Chola power; Extent of the Chola empire; Administration; Economy; Trade, Art and Architecture religion and Philosophy. **The Rajputs:** Origins; Polity and administration; Social and Religious life; Literature and art.

**Suggested Reading:-**

- Basham, A.L., *Wonder that was India*, Fontana, London, 1977.
- Jha, D.N., *Early India: Concise History of India*, Manohar Publication, 2010
- Sharma, R.S., *India's Ancient Past*, Oxford University Press, New Delhi, 2005
- Thapar, Romila, *Early India : From Origins to AD 1300*, Penguin publication, New Delhi, 2003.

**SEMESTER-I**

**DEFENCE AND STRATEGIC STUDIES**

**WAR AND ITS VARIOUS ASPECTS  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:** *Practicals are only meant for the regular students. For the private students the paper shall be of 100 marks. For private students, each question will be of 20 marks.*

**SECTION-A**

- 1. War**
  - a) Nature, Concept and Definition
  - b) Origin of War
  - c) History of Warfare
    - i) Animal Warfare
    - ii) Primitive Warfare
    - iii) Historical Warfare
- 2. Modern Warfare**
  - i) Meaning and Definition.
  - ii) Features of Modern Warfare.
- 3. Principles of War**
  - a) Meaning and Importance.
  - b) Historical Development and Application.

**SECTION-B**

- 1. War as an Instrument of Policy**
- 2. Guerrilla Warfare**
  - i) Origin and Concept
  - ii) Principles, Techniques & Characteristics of Guerrilla Warfare.
  - iii) Counter Guerrilla Warfare.

### SECTION-C

#### 1. Psychological Warfare

- a) Definition and Concept
- b) Functions.
- c) Limitations

#### 2. Psychological Aspects of War

- a) Leadership
- b) Discipline
- c) Motivation
- d) Morale
- e) Fear and Panic.

### SECTION-D

#### 1. Nuclear Warfare

- i) Beginning of Nuclear era and effects of Nuclear explosion.
- ii) Nuclear weapons: Fission & fusion bombs.
- iii) Nuclear Strategies for Defence: (Preventive, Pre-emptive, Massive Retaliation and Flexible Response)
- iv) Missiles: Types and their Classification.

#### Books Recommended:

1. Boring, E. (1945) : Psychology for the Armed Forces.
2. Chandra, P. (2014) : International Politics, 2<sup>nd</sup> edition.
3. Clausewitz, C.V. (1873) : On War (translated by Col. J.J. Graham)
4. Copeland, N. (1942) : Psychology of a Soldier.
5. Encyclopedia Americana (Latest edition)
6. Encyclopedia Britannica (Latest edition)
7. Hasnain, Q. (1967) : Psychology for the Fighting Man, *Fauji Prati Mano-Vigyan* (Punjabi translation published by Punjabi University, Patiala)
8. Knapp, W. (1967) : A History of War and Peace: 1939-1965
9. Lineberger, Paul M.A. (1947) : Psychological Warfare.
10. Osanka, F.M. (1962) : Modern Guerrilla Warfare. 1941-1961
11. Palmer, N.D. & Perkins, H.C. (2001) : International Politics 3ed paperback edition
12. Patel, Satyavrata R. (1964) : A Text Book of International Law.
13. *Sampooran Singh*(1971) : India and the *Nuclear Bomb*
14. Sidhu, K.S. (1988) : War and its Principles.
15. Tripathi, K.S.(1970) : Evolution of Nuclear Strategy
16. Mao Tse-tung (1937) : On Guerrilla Warfare (translated by Samuel B. Griffith)
17. Wright, Quincy (1942) : A Study of War.
18. Palit, D.K. (1970) : Essentials of Military Knowledge  
*Sanik Gyan de Mul Niyam* (Punjabi translation published by Punjabi University Patiala)

**SEMESTER-I**

**DEFENCE AND STRATEGIC STUDIES  
(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 20**  
**Written: 10**  
**Discussion: 05**  
**Record & Viva: 05**

**Instructions for the Examiners:**

1. Examiners are required to set a question paper containing 10 marks of 1 hour duration in which he is supposed to set at least 3 questions of 5 marks each and students are required to attempt any two.
2. In the written practical Examination, choice in questions may be given to the students. The question paper is to be set at least half an hour before the examination.
3. Each student should be asked to deliver a talk/make short presentation for 5–10 minutes on any of the given topics.
4. Examiners should devote reasonable time for Viva–Voce Test and assess the practical record of a student.
5. For practical paper one group of Students will not comprise of more than 20 students at a time.

**A. WRITTEN TEST**

**Marks: 10**

**1. Map:**

- a) Definition and Features
- b) Classification and its utility for Military
- c) Enlargement and reduction of Maps

**2. Conventional Signs: Military and Geographical**

**3. GRID System: Four Figure and Six figure Map References.**

**B. TOPICS FOR DISCUSSION/PRESENTATION:**

**Marks: 05**

- a. Principles of War
- b. Military Leadership
- c. Guerrilla Warfare

**C. RECORD AND VIVA-VOCE**

**Marks: 05**

**SEMESTER-I**

**JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- Communication- Definition, Meaning, Nature, Need, Process and Functions
- Types of Communication (Intrapersonal, Interpersonal, Group and Mass Communication)

**SECTION-B**

- 7C's of Communication, Barriers of Communication
- Verbal and Non-verbal communication
- Latest trend (Internet)
- Invasion of satellite channels

**SECTION-C**

- Models of Communication: Aristotle, Shannon and Weaver, Wilbur Schramm, Lasswell and Berlo, Osgood, Dance, Gatekeeping Model

**SECTION-D**

Theories of Communication: Hypodermic Needle Theory, Two-step and Multi step theory, Uses and Gratification Theory

**(PRACTICAL)**

**Marks: 20**

Training in Communication Skills Classroom Discussions and Seminars  
Making a Power point presentation and presenting it (Time limit 5 Minutes)

**Books Recommended:-**

1. Mass Communication in India Keval J. Kumar Jaico, Bombay.
2. Mass Communication, Uma Narula Harvard, N. Delhi.

**Theory & Practical Media**

Communication and Management C.S. Rayudu Himalaya

**SEMESTER-I**

**MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)  
INTRODUCTION TO COMMUNICATION**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- Communication- Definition, Meaning, Nature, Need, Process and Functions
- Types of Communication (Intrapersonal, Interpersonal, Group and Mass Communication)

**SECTION-B**

- 7C's of Communication, Barriers of Communication
- Verbal and Non-verbal communication
- Latest trend (Internet)
- Invasion of satellite channels

**SECTION-C**

- Models of Communication: Aristotle, Shannon and Weaver, Wilbur Schramm, Lasswell and Berlo, Osgood, Dance, Gatekeeping Model
- Traditional and Folk Media

**SECTION-D**

Theories of Communication: Hypodermic Needle Theory, Two-step and Multi step theory, Uses and Gratification Theory

**(PRACTICAL)**

**Marks: 20**

Training in communication skills, discussions & seminars.

Power Point Presentations in accordance with Syllabus.

Training in Communication Skills

Making a Power point presentation and presenting it (Time limit 5 Minutes)

Classroom Discussions and Seminars

**Books Recommended:-**

<b>Name</b>	<b>Author</b>	<b>Publisher</b>
1. Mass Communication	Kewal J. Kumar	Jaico, Bombay, in India. 2004
2. Mass Communication	Uma Narula	Haranand N. Delhi, Theory & Practice 1998

**Note: Practical to be conducted by external examiner**

**SEMESTER-I**

**PUBLIC ADMINISTRATION**

**ADMINISTRATIVE THEORY**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Public Administration**– Meaning, nature and scope; Public Administration as an Art and a Science, Distinguish between Public Administration and Private Administration, Relationship of Public Administration with other social sciences – Political Science, Sociology, Economics, History, Psychology, Law. New Public Administration, New Public Management and Good Governance.

**SECTION-B**

**Organization**– Meaning, Formal and Informal Organisation. Basic Principles of Organisation– Hierarchy, Span of control, UNITY of Command; Centralization and Decentralization. Delegation, Coordination and Supervision.

**SECTION-C**

**Chief Executive**– Meaning, Types & Functions, Line and Staff Agencies, Department, Public–Corporation and Independent Regulatory Commission, Delegated Legislation, Administrative Tribunals.

**SECTION-D**

**Administrative Behaviour**– Leadership, Communication, Decision making, Executive, Legislative, Judicial and Citizens, Control over Administration.

**Suggested Readings:-**

1. Awasthi, Maheshwari S.R., Public Administration, Lakshmi Narain Aggarwal, Agra, 2004.
2. Basu Rumki, Public Administration: Concept and Theory, Sterling Publishers Pvt. Ltd., New Delhi, 1990.
3. Bhattacharya Mohit, Restructing Public Administration–Essays in Rehabilitation, IInd Edition, Jawahar Publishers and Distributors, New Delhi, 1999.
4. Kapoor Usha, Lok Prashashan–Sidhant Ate Vihar, Publication Bureau, Panjabi University, Patiala.
5. Puri K.K., Elements of Public Administration, (Punjabi). Bharat Prakashan, Jalandhar, 2004.
6. Sharma, M.P. and Sadana B.L., Public Administration, Kitab Mahal, Allahabad, 1993.
7. Sahib Singh and Swinder Singh, Public Administration: Theory and Practice, New Academic Publishers, Jalandhar, 1997.
8. White L.D., Introduction to the Study of Public Administration, Macmillan, New York, 1995.

**SEMESTER-I**

**SOCIOLOGY**  
**FUNDAMENTALS OF SOCIOLOGY-I**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- a) **Sociology:** Meaning, Nature, Scope and Importance.
- b) **Sociology and Social Sciences:** Psychology, Economics, Political Science and History.

**SECTION-B**

- a) **Basic Concepts:** Society, Community, Institution and Association

**SECTION-C**

- a) **Social Groups:** Definition, Characteristics and Types– Primary & Secondary, In group and Out group, Reference Groups.

**SECTION-D**

- a) **Social Structure:** Definition, Elements, Norms and Values, Status and Roles.

**Recommended Readings:-**

1. Ahuja, Ram. 1993, *Indian Social System*. Jaipur: Rawat Publications.
2. Abraham, M. Francis. 2006, *Contemporary Sociology*. New Delhi: Oxford University.
3. Bottomore, T.B.S. 1972, *Sociology*, Punjabi Translation by Parkash Singh Jammu, Publication Bureau, Punjabi University, Patiala.
4. Davis, Kingsley. 1971, *Human Society*, Punjabi Translation by Parkash Singh Jammu, Publication Bureau, Punjabi University, Patiala.
5. Gisbert, Pascual. 1969, *Fundamentals of Sociology*. Bombay: Orient Longmans.
6. Jayaram, N. 1988, *Introductory Sociology*. Madras: Macmillan.
7. Johnson, H.M. 1995, *Sociology: A Systematic Introduction*. New Delhi: Allied Publishers.
8. Kapila, S. 1989, *A Text Book of Sociology, Part-I & II*. Jalandhar: New Academic House.
9. Kapila, S. 2001, *Fundamentals of Sociology*, Vol. I. Panchkula: Kapila Publishers.
10. Koenig, Samuel. *Sociology, An Introduction to the Science of Society*. Punjabi Translation by Baldev Singh, Publication Bureau, Punjabi University, Patiala.
11. Kaur, Swinderjit. 2014, *General Samaj Vigyan*. Jalandhar: New Academic Publishing.
12. Haralambos, Michael and Robin Heald. 2013, *Sociology: Themes and Perspectives*. New Delhi: Oxford University Press.
13. Macionis, John.J and Ken Plumer. 2014, *Sociology: A Global Introduction*. London: Pearson.

**SEMESTER-I****WOMEN EMPOWERMENT****WOMEN AND SOCIETY: AN OVERVIEW****Time: 3 Hrs.****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****Gender and Feminism**

1. Gender, gender equality and patriarchy.
2. Feminism and Struggle for women's equality throughout the world: West and Asia.

**SECTION-B****Status of Women: Historical Perspective**

1. **Status and Position of Women in History:** Women in Ancient, Vedic and Post Vedic period.
2. Status of women in pre-independence period and Social Reforms before and after independence.

**SECTION-C****Women, Society and Human Rights**

1. Universal Declaration of Human Rights and Women Rights.
2. Gender issue and Indian Constitution.
3. **Struggles for Gender Equality:** Society, reforms and laws in India.

**SECTION-D****Status of Women in Punjab**

1. **Status of women in Punjab:** History with particular reference to Sikh Scriptures.
2. **Status of women in Punjab:** Contemporary Issues.

### SEMESTER-I

## Drug Abuse: Problem, Management and Prevention

### PROBLEM OF DRUG ABUSE

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

**Meaning of Drug Abuse:**

Meaning, Nature and Extent of Drug Abuse in India and Punjab.

#### SECTION-B

**Consequences of Drug Abuse for:**

Individual:	Education, Employment, Income.
Family :	Violence.
Society :	Crime.
Nation :	Law and Order problem.

#### SECTION-C

**Management of Drug Abuse:**

Medical Management: Medication for treatment and to reduce withdrawal effects.

#### SECTION-D

Psychiatric Management: Counselling, Behavioural and Cognitive therapy.

Social Management: Family, Group therapy and Environmental Intervention.

**References:-**

1. Ahuja, Ram (2003), *Social Problems in India*, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. *The Drug Crime Connection*. Beverly Hills: Sage Publications.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.
5. Kessel, Neil and Henry Walton. 1982, *Alcoholism. Harmond Worth*: Penguin Books.
6. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
7. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
8. Ross Coomber and Others. 2013, *Key Concept in Drugs and Society*. New Delhi: Sage Publications.
9. Sain, Bhim 1991, *Drug Addiction Alcoholism, Smoking obscenity* New Delhi: Mittal Publications.
10. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab: A Sociological Study*. Amritsar: Guru Nanak Dev University.
11. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
12. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation*, Cambridge University Press.
13. Verma, P.S. 2017, "*Punjab's Drug Problem: Contours and Characteristics*", Economic and Political Weekly, Vol. LII, No. 3, P.P. 40-43.
14. World Drug Report 2016, United Nations office of Drug and Crime.
15. World Drug Report 2017, United Nations office of Drug and Crime.

## SEMESTER-I

### PSYCHOLOGY

#### BASIC PSYCHOLOGICAL PROCESSES-I

**Time: 3 Hours**

**Pass Marks: 35% of the subject**  
(Theory and Practical Separately)

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

#### Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

**Nature:** Psychology as a Science, Historical background of Psychology with brief Introduction to Schools (Structuralism, Functionalism, Psychoanalysis, Behaviourism, Gestalt and Humanistic)

#### SECTION-B

**Methods:** Introspection, Observation, Experiment, Case Study, Interview and Questionnaire

**Understanding Individual Differences:** Nature and Uses of Psychological Tests, Characteristics of Good Psychological Tests, Types of Psychological Tests (Verbal vs Non-verbal Tests, Individual vs Group Tests, Speed vs Power Tests, Paper and Pencil vs Performance Tests, Essay vs Objective Type Tests), Ethical Issues in Psychological Testing

#### SECTION-C

**Learning:** Introduction to Learning, Nature and Characteristics of Learning Processes, Trial and Error Learning & Insight Learning, A brief Introduction to the Concepts of Classical and Instrumental Conditioning (Paradigm and Typical Experiments), Social/ Observational learning

#### SECTION-D

**Intelligence:** Concept and Nature, Intelligence Theories (Spearman and Thurstone), Cognitive Theories (Gardner and Sternberg), Concept of Emotional Intelligence, Nature and Nurture Issue in Intelligence

**Measures of Central Tendency:** Meaning and Characteristics of good Measure of Central Tendency, Measures of Central Tendency: Arithmetic Mean, Median, Mode with their Merits and Demerits

#### References:-

1. Benjamin, Jr. L.T., Hopkins, J.R. & Nation, J.R. (1987). *Psychology*. Mcmillan Publishing Company, New York.
2. Chaplin, J.R. & Kraiwic, T.S. (1985). *Systems and Theories of Psychology*. Holt, Rinehart and Winston, Inc., New York.
3. Crooks, R.L. & Strin, J. (1988). *Psychology; Sciences: Behaviour and Life*. Holt Rinehart and Winston, Inc., New York.
4. Morgan, G.T., King, P.A., Weisz, T.R. & Schopler, J. (1999). *Introduction to Psychology*. McGraw Hill Book Co., New York.
5. Baron, R.A. (1996). *Psychology*. New Delhi: Prentice Hall of India.
6. Carlson N.R. (2007). *Foundation of Physiological Psychology*. Pearson Education, New Delhi.
7. Aron (2007). *Statistics for Psychology*. Pearson Education, New Delhi.

**SEMESTER-I**

**PSYCHOLOGY  
(PRACTICAL)**

**Marks: 25**

**Instructions for the Practical Examination:-**

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

**Five Practical have to be performed out of the following:**

1. Simple Reaction Time/Observations
2. Verbal Test of Intelligence.
3. Nonverbal Test of Intelligence.
4. Performance Test of Intelligence
5. Trial and Error Learning.
6. Effect of Practice on Learning.

**SEMESTER-I****GEOGRAPHY****PHYSICAL GEOGRAPHY-I: GEOMORPHOLOGY  
(THEORY)****Time: 3 Hours****Max. Marks: 100****Theory Marks: 70****Practical Marks: 30****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note: Stencil outline maps are allowed**

**Objective:** The objective of this paper is to introduce the basic concepts in the physical geography, essentially geomorphology to the students of geography in a brief but adequate manner.

**SECTION-A**

**Geography:** Definition, place of physical geography within the discipline of geography, division of physical geography-geomorphology, climatology, oceanography. Theories of the Origin of the Earth: Kant, Laplace and Jeans & Jeffreys.

**Interior of the Earth:** Constitution, structure and composition, continental drift (with special reference to Wegener's theory and Plate Tectonics).

**SECTION-B**

**Movements of the Earth:** Orogenic, epirogenic movements

**Landforms resulting from forces of compression and tension:** folding and faulting

**Earthquakes and Volcanoes** (causes, types and distribution)

**SECTION-C**

**Rocks:** Their origin, classification and characteristics.

**Major Landforms:** Mountains, plateaus and plains in the world.

**Geomorphic Agents:** Geomorphic processes (weathering and erosion).

### SECTION-D

**Geomorphological Landscapes:** Fluvial, glacial, aeolian, coastal, Karst.

**Applied Geomorphology:** Applications to transport, landuse, earthquake disaster and its management.

#### Books Recommended:-

1. Chawla, I.N.: *Bhautik Bhugol (in Punjabi)*, Bharat Prakashan, Jalandhar.
2. Dayal, P.: *A Text Book of Geomorphology*, **Rajesh Publications New Delhi, 2007.**
3. Dury, G.H.: *The Face of the Earth Penguin*, Middlesex, England, **1977.**
4. Gass, I.G.: *Understanding the Earth*, The Artemrs Press, Sussex, 1973.
5. Holmes Arthur: *Principles of Physical Geology*, Thomas Nelson & Sons, Ltd., New York, Latest Edition, **1993.**
6. Kale, V. and Gupta A.: *Elements of Geomorphology*, Oxford University Press, Calcutta, 2001.
7. Kaur Dhian: *The Earth*, Edited by R.C. Chandna, Kalyani Publishers, Ludhiana, Delhi, 2000.
8. Nizamuddin: *An Introduction to Physical Geography*, Concept, New Delhi, **2002.**
9. Mamoria, C.P. and Niati, J.L.: *Bhautik Bhugol Ke Tatwa (in Hindi)* Agra, 1976.
10. Monkhouse, F.J.: *Principles of Physical Geography*, Orient Longman, New Delhi, Latest Edition, **1975.**
11. R.N. Tikha: *Physical Geography*, New Academic Publishing Co., Jalandhar.
12. Singh, Pritam & Bhatia S., *Bhautik Bhugol De Adhaar*, Punjabi University Publication, Patiala.
13. Singh, Savinder: *Physical Geography*, **Pravalika Publications, Allahabad, 2015.**
14. Sparks, B.W.: *Geomorphology*, Longman, London, 1986.
15. Strahler, A.N. & Strahler A.H.: *Modern Physical Geography*, John Wiley, New York, 1992.
16. Thornbury, W.D.: *Principles of Geomorphology*, Second Edition, Wiley Eastern Ltd., New Delhi, 1993.
17. Singh Malkiat: *Principles of Physical Geography*, Rasmeet Parkashan, Jalandhar, **2005, Reprint 2015.**

**SEMESTER-I**

**GEOGRAPHY**

**CARTOGRAPHY-I  
(PRACTICAL)**

**Time: 3 Hours**

**Max. Marks: 30**

**Written Paper of 3 Hours: 15 Marks**

**Practical Record (File): 08 Marks**

**Viva: 07 Marks**

**Objective:**

Geography is an amalgam of physical as well as social sciences and as such it is necessary for the students to go through laboratory exercises, particularly to show directions and bearings and different methods of representing relief. The concept of scale is to be understood in the initial stage and also different methods of representing relief.

**SECTION-A**

**Maps and Scale:** History of Cartography and types of maps, Scales: types of scales, methods of construction of graphic scales—plain scales, diagonal scales and comparative scales—different units, time scales.

**SECTION-B**

**Representation of Relief:** Spot heights, Trigonometrical stations, Bench Marks, form Lines, Contours, Hachures, Hill-shading and Layer tints.

**Note:**

1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 UNITS. Eight questions will be set out of the whole syllabus, four from each UNIT. The students will be required to attempt two questions from each UNIT. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number 1. (Total 12 marks)
3. Evaluation of Practical record will be done at the time of viva-voce examination. A minimum of 12 sheets are to be prepared by the students in each semester.
4. In case the candidate has applied for the improvement, he/she should be required to make a fresh practical note book.
5. For practical classes, the number of students in one group shall not exceed fifteen.

**Recommended Books:-**

**Essential Readings:-**

1. Khullar, D.R.: *Essentials of Practical Geography*, New Academic Publishing Co., Mai Hiran Gate, Jalandhar, **2016**.
2. Singh, Gopal: *Mapwork and Practical Geography*, Vikas Publishing House, Pvt. Ltd., New Delhi, 1995.
3. Singh L.R. & Singh, Raghunandan: *Mapwork and Practical Geography*, Central Book Depot, Allahabad, 1993.
4. Phyllis Dink: *Mapwork*, Atma Ram & Sons, **1991**.

**Further Readings:-**

1. Mishra, R.P. & Ramesh, A.: *Fundamental of Cartography*, Concept Publishing Co., New Delhi, 1989.
2. Monkhouse, F.J. & Wilkinson, H.R.: *Maps and Diagrams*, Methuen & Co., London, Third Edition, 1976.
3. Robinson, A.H. & Randall, D. Sale: *Elements of Cartography*, John Wiley & Sons, New York, (Sixth Edition), 1995.

**SEMESTER-I**

**Punjab History & Culture (From Earliest Times to C 320)**  
(Special Paper in lieu of Punjabi compulsory)  
(For those students who are not domicile of Punjab)

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Physical features of the Punjab and impact on history.
2. Sources of the ancient history of Punjab

**SECTION-B**

3. Harappan Civilization: Town planning; social, economic and religious life of the India Valley People.
4. The Indo-Aryans: Original home and settlement in Punjab.

**SECTION-C**

5. Social, Religious and Economic life during later *Rig* Vedic Age.
6. Social, Religious and Economic life during later Vedic Age.

**SECTION-D**

7. Teaching and impact of Buddhism
8. Jainism in the Punjab

**Suggested Readings:-**

1. L. Joshi (ed): *History and Culture of the Punjab*, Art-I, Patiala, 1989 (3<sup>rd</sup> edition)
2. L.M. Joshi and Fauja Singh (ed); *History of Punjab*, Vol.I, Patiala 1977.
3. Budha Parkash: *Glimpses of Ancient Punjab*, Patiala, 1983.
4. B.N. Sharma: *Life in Northern India*, Delhi. 1966.

## SEMESTER-I

## ECONOMICS

### MICROECONOMICS

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

**Introductory:** Definition of Economics, Adam Smith, Marshall, Robbins, Nature and Scope of Microeconomics. Basic Concepts: Human wants, Utility and Satisfaction, Basic Economic Problems.

Demand Function; Supply Function, Price Determination, Slope and Elasticity (Concepts), Elasticity of Demand – Price, Income and Cross. Measurement of price elasticity of demand. Utility Analysis, Indifference Curve Analysis and Revealed Preference Analysis (Meaning and Equilibrium).

#### **SECTION-B**

**Theory of Production and Costs:** Concept of Production Function. Laws of Returns to Scale and Law of Variable Proportions.

**Cost:** Traditional and Modern Costs Theory, Concepts and Costs curves in the short and in the long run. Revenue Curves and their relationship with elasticity of demand.

#### **SECTION-C**

**Market forms:** Perfect Competition; Assumptions, Price and output determination of firm and Industry in Short run and Long run; Monopoly: Assumptions, Equilibrium. Monopolistic Competition: Assumptions, Product differentiation, Selling costs, Excess capacity.

#### **SECTION-D**

Marginal Productivity Theory; Factor Pricing (with reference to labour) under Perfect Competition and Imperfect Competition, Modern Theory of Distribution.

**Rent:** Concept; Ricardian Theory and Modern Theory of Rent.

**Interest:** Concept of interest; classical theory, loanable funds theory.

**Profit:** Concept of profit; Risk and uncertainty theories.

#### **Recommended Texts:**

1. R.G. Lipsey: Introduction to positive economics, EL BS, London, 1969.
2. Stonier & Hague: A Text book of Economics Theory, 9th ed., ELBS, London, 1973.
3. Paul Samuelson: Economics, Mcgraw Hill, Kogakushad, Tokyo, 1973.
4. N.C. Ray: Microeconomic Theory, Macmillan, Delhi, 1975.
5. D. Salvatore: Microeconomics.
6. Koutsoyiannis: Modern microeconomics.

**SEMESTER-I****QUANTITATIVE TECHNIQUES-I****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Solution of Linear Equations:** Solution of Simultaneous Linear Equations (upto two variable case), Application of Linear Equation in Economics; Solution of Quadratic Equations. Series: Arithmetic Progression Series, Geometric Progression Series and their applications in economics.

**SECTION-B**

**Elements of Analytical Geometry:** Straight line; Basic concepts of trigonometry(with formulae); Concepts of combination and permutation, Elements of set theory, union, intersection, difference, symmetric difference, complementation, Venn diagrams.

**SECTION-C**

Difference between a constant and a variable, concept of functions, classifications of functions, graph of linear and quadratic functions (Economic applications).  
Limits and continuity of a function. Concept of differentiation (ab-intio principle).

**SECTION-D**

**Derivatives (Excluding Trigonometric and Inverse Functions):** Rules of derivatives; functions of functions rule; derivatives of implicit functions, parametric functions, exponential functions, logarithmic functions (Application in Economics).

**Books Recommended:-**

1. Monga, G.S.: Mathematics and Statistics for Economics.
2. Yamane, Taro: Mathematics for Economists.
3. Allen, R.G.D.: Mathematical Analysis for Economists.
4. Edward T Dowling: Introduction to Mathematical Economics.

## SEMESTER-I

### INDUSTRIAL ECONOMICS

#### INDUSTRIAL ECONOMICS-I

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

Nature, scope and subject matter of Industrial Economics; concept and organization of the firm; optimum firm.

#### SECTION-B

**Market Structure:** Meaning and measurement: Sellers' concentration and product differentiation; Market structure, firm size and profitability.

**Market Conduct:** Product pricing – Theory and evidence; merger and diversification.

#### SECTION-C

**Market Performance:** Growth of the firm and its constraints; size, growth and profitability.

#### SECTION-D

**Process of Industrialization:** Rationale, objectives, strategies and policies with reference to Indian industrial development and policy.

**Recommended Texts:**

1. Barthwal, R.R.: Industrial Economics: An Introductory Text, Wiley Eastern Limited, New Delhi, 1984.
2. Devine, P.J. et al: An Introduction to Industrial Economics, George Allen Unwin Ltd., London, 1976.
3. Hay, D.A. and D.J. Morris: Industrial Economics: Theory and Evidence, Oxford University Press, London, 1979.
4. Harndeen, J.B.: Economics of Corporate Economy.
5. Writes, P.J.D.: Price, Cost and Output.
6. Kirkpatrick, C.M. et al.: Industrial Structure and Policy in Less Developed Countries, N.Lee and F.L. Ninson, Heritage, New Delhi, 1985.
7. Kelkar, V.L. and V.V. Bhanoji Rao: Indian Development Policy Imperatives.

## SEMESTER-I

### AGRICULTURAL ECONOMICS & MARKETING

#### AGRICULTURAL ECONOMICS-I

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

**Agriculture in a Growing Economy:** changing importance of agriculture, inter-dependence between agriculture and industry; role of agriculture in economic development.

#### **SECTION-B**

**Farming Systems:** traditional, subsistence, commercial, cooperative, collective and state farming, corporate farming, contract farming.

#### **SECTION-C**

**Economics of Agricultural Production:** Relation between factor-product, product-product and factor-factor, farm size productivity in Indian Agriculture.

#### **SECTION-D**

**Agricultural Growth in India:** Inter-regional variations in growth in output and productivity. Performance of Punjab Agriculture: cropping pattern, mechanization and problems in agriculture.

#### **Suggested Readings:-**

1. Southworth, N, and A. Johnston (1967), Agricultural Development and Economic Growth, Cornell University Press.
2. Dantwala, M.L. (1986), Agricultural Growth in India, Indian Society of Agricultural Economics, Bombay.
3. Bhardwaj, K. (1984), Production Conditions in India Agriculture, Cambridge University Press.
4. Memoria, C.B. (1985), Agricultural Problems of India, Kitab Mahal.
5. Eichher, C. and L. Wilt (ed.) (1964), Agriculture in Economic Development, McGraw Hill, London.
6. S.S. Johl & T.R. Kapur, Fundamentals of Farm Business Management.
7. A.S. Kahlon & Karam Singh, Principles of Farm Business Management.
8. Agriculture Economics by R.K. Lekhi and Joginder Singh, Kalyani Publishers 1996.

**SEMESTER-I****RURAL DEVELOPMENT-I****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Conceptual: Sociology as a study of social groups, Relationships, Institutions and culture, Rural urban differences.

**SECTION-B**

Caste, its features, functions, theories of its origin and intercaste relations.

**SECTION-C**

Family types, functions and changing patterns. Marriage, its forms, functions and features like bride/ bridegroom price, extravagance etc.

**SECTION-D**

Political structures; structures and functions of traditional and enacted panachayats.

**Suggested Readings:-**

1. Hutton, J.H. Caste in India, OxfordUniversity Press, Bombay.
2. Mandelbaum, D.G. Society in India, Popular Prakashan, Bombay.
3. Jammu, P.S. (Ed). Pendu Punjab Vich Samajik Parvartan, PunjabiUniversity, Patiala.
4. Swinderjit Kaur. Samaj Vigyan Nal Jan Pachhan, PunjabiUniversity, Patiala.
5. Baldev Singh (tr.) Samaj Vigyan, Punjabi Univeristy, Patiala.

**SEMESTER-I**  
**OFFICE MANAGEMENT AND SECRETARIAL PRACTICES COMPUTER APPLICATIONS-I**  
**(THEORY)**

**Time: 3 hours**

**Total Marks: 100**

**Theory: 60**

**Practical: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**World of Computers:** Characteristics of Computers, Evolution and Generation of Computers, Hardware and Software Components, Operating System: types, functions and characteristics. Examples: Windows etc., Networking basics and Internet Concepts.

**SECTION-B**

**Advanced Concepts of Networks and Internet:** Keywords: URL, IP address, Hyperlinks, Web pages, Home page, web sites, WWW, Dial-up, Broadband, Dedicated, ISP, Browser, DSL, DNS, Gateways, Chat rooms, Downloading and Uploading, Wifi. Working with Microsoft Internet Explorer: Opening a web page, opening multiple browser windows, opening multiple tabs in a single browser windows and their management, working offline, deleting temporary files, exploring Internet Options. Net Etiquettes, Searching the Web: Meaning of Search Engines, Keywords,

**SECTION-C**

**Database Management System (DBMS):** Meaning and need of a database, Advantages, Limitations of databases, Applications of Database, Meaning and need of DBMS, Database Components: Tables, Rows, Columns, Attributes, Queries, Record, Primary Key, Foreign Key, Relationship between tables.

**SECTION-D**

**Word Processing:** Meaning of Word Processor, Need and Uses of Word Processing, Advantages and Limitations of Word Processing, Software used for Word Processing, Why MS-Word and which version? Starting Word: MS- Word interface, opening a blank document, hiding and showing toolbars, templates. Working in Word: selecting text, editing text, finding and replacing text, formatting text, checking and correcting spellings, Justification and Alignment, Bullets and Numbering, Tabs, Paragraph formatting, Indent, Page Formatting, Header and Footer & Word Count. Working with a Document: Page Setup of a document, viewing a document, switching between documents, saving a document, print preview, printing a document. Finishing Touch to a document: Inserting date and time, Special effects such as Bold, Scripts, etc., Inserting and deleting a comment, Inserting Clip Arts.

**Note:-** The relevant short cut keys of MS Word to be discussed.

**Suggested Readings:-**

- 1) Absolute Beginner's Guide to Computer Basics, Michael Miller.
- 2) Fundamental of Computers, Akash Saxena, Kratika Gupta.
- 3) Fundamentals of Information Technology, Alexis and Mathew.
- 4) Computer Fundamentals, P.K. Sinha.
- 5) Principles of Typewriting, D.P. Bhatia and S.S. Sangal.

**(PRACTICAL)**

**Marks: 40**

**Key Board Operations:**

1. Practicing second row, third row, first row and fourth row.
2. Practicing words, sentences, paragraphs and passages.
3. Use of shift keys and other non-character keys.
4. Use of special symbols of the Key Board and punctuation marks.

**Speed Building:**

1. Different kinds of drills for typing.
2. Graded speed test leading to accurate speed of about 30 w.p.m.
3. Typing of passages each containing 300 words in ten minutes.

**Display Techniques:**

1. Centering – Horizontal and Vertical.
2. Ensuring proper margins, line spacing.
3. Typing different types of heading including spaced heading.

**Letter Typing:**

1. Typing exercises of personal, official and business letters in different styles with proper display.
2. Typing of applications for jobs.
3. Addressing the envelopes.

**SEMESTER-I**  
**TRAVEL & TOURISM**  
**FUNDAMENTALS OF TRAVEL AND TOURISM**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Conceptual Framework of Tourism**

- Travelers, excursionist, tourists/visitors.
- Tourism and tourist – domestic and international.
- The dynamics of definitions.

**Tourism Product and its Characteristics**

- Tourism through the ages.
- Tourism as a product
- Characteristics of tourism

**SECTION-B**

**The Construct of Tourism**

- Notion of Travel in historical imagination
- Types and forms of tourism
- Motivations for tourism.

**Objects of Tourism**

- Tourism as an object of pleasure–Scenic beauty, health and leisure.
- Tourism as a preserver of heritage–Historical and religious sites.
- Tourism as an object of culture–Holiday seasons,
- Tourism as a social habit.
- Tourism as a means of globalization–Theme of integration and identity.

**SECTION-C**

**Issues and Problems**

- Infrastructure and super–structure, Levels of Study.

**Global;** International concerns, problems and organizations–WTO, IATA and ICAO

**Macro:** National concerns and problems and organizations–Ministry of Tourism and ITDC.

**Meso:** Local concerns and problems.

**Micro:** Enterprise level concerns and problems.

**SECTION-D**

**Positive Effects of Tourism**

- Integrational
- Nation building – appreciation of language, dress, food and Customs.
- Information flows – travelogues.
- Removal of barriers – flow of goods.

**Negative Effects of Tourism**

- Conflicts – cultural shock.
- Ecological degradation.
- Dangers to protected archaeological sites
- Interference in wildlife habitat
- Social effects on the residents of tourist places

**Suggested Readings:-**

1. Burkart, A.J. & Medlik, S.: *Tourism: Past, Present and Future*, Heinemann Professional Publishing, London, 1986 reprint.
2. Mill, Robert and Christie & Morrison Alastair M.: *The Tourism Systems: An Introductory Text*, Prentice–Hall International, London, 1992.
3. Holloway, Christopher – J.: *The Business of Tourism*, Pitman Publishing, London, 1989.
4. Kamra, Krishan, K & Chand, Mohinder: *Basics of Tourism: Theory Operation and Practice*, Kanishka Publishers, New Delhi, 2002.
5. Bhatia, A.K.: *Tourism Development: Principles and Practices*, Sterling, New Delhi, 1995.
6. Foster, Douglas, *Travel and Tourism Management*, Macmillan, 1985.
7. *IITTM Growth of Modern Tourism – Monograph*, IITTM, New Delhi, 1989.
8. *IITTM Tourism as an Industry*, IITTM, New Delhi, 1989.
9. Wahab, S.E., *Tourism Management*, Tourism International Press, London, 1986.
10. Gupta I.C., *Tourism Products of India*, Indore, 1995. Kasbekar Sushma.
11. Singh, Ratandeeep *Tourist India: Hospitalities Services*, Kanishka, New Delhi, 1996.

**SEMESTER-I**

**TOURISM AND HOTEL MANAGEMENT  
(VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Evolution of Hospitality Industry in India and Abroad:** Accommodation and its types, Star categorization of Hotels

**Front Office:** Layout of front office and their importance i.e. reservation, reception, concierge, bell desk, lobby, telephone, cashier; Qualities of front office staff; Department front office coordinates with; Main functions of front office- Information, Reservation, Reception.

**SECTION-B**

**House Keeping:** Introduction, Layout of housekeeping department, Organisation of housekeeping department, Job description and qualities of house keeping staff, Departments that house keeping coordinates with, Rooms and floors-Practices and procedures.

Briefing and scheduling of staff, Knowledge of rooms, Rules on a guest floor, Cleaning of rooms, Preparing a room report, Housekeeping control desk

**SECTION-C**

**Food and Beverages Production:** Definition of 'food technology, Aims and objectives of cooking food, Cooking materials/ingredients, Methods of cooking foods, Spices used in Indian and western cooking, Principles of food storage, Planning of meals, Preservation of food.

**SECTION-D**

**Food and Beverage Service:** History of Indian catering, Food and beverage outlets, Classification of catering operations, Restaurant organization, Service staff behaviour and standards.

Table layout and table manners, Rules for waiting at table, Forms/types of catering establishments i.e Commercial (non residential & residential), Welfare (industrial/institutional), Transport (Air, Road, Rail, Sea); Origin of menu and menu planning objectives and types of menu

**Note:-**

One tour/summer training is compulsory every year of which the students shall prepare "A Tour Report", This report shall be evaluated by the examiner and shall given grades A, B & C.

**C. Training: One Month**

During the summer vacation one month training is a must.

**SEMESTER-I**

**TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)**

**TOURISM BUSINESS**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:- The candidates are allowed to use simple (Non-Scientific) Calculators.**

**SECTION-A**

Definition, Nature, Characteristics, Importance and Components of tourism, Prospects of Tourism.

**SECTION-B**

Insulation, organization both national and international in world in promotion & development WTO, IATA, PATA, TAAI.

**SECTION-C**

Typology of Tourism; Concepts of Domestic And International Tourism recent trends, Motivation in tourism, Barriers to the growth of tourism

**SECTION-D**

Tourism as an industry, visitor, tourist, excursionist. Growth and development of Tourism in India. Impacts of Tourism-Economic, Social, Physical and Environmental.

**Suggested Readings:-**

1. Christopher J. Holloway: The Business of Tourism: McDonald and Evans, 1983.
2. A.K. Bhatia: Tourism Development, Principles and Practices: Sterling Published (P) Ltd., New Delhi, 1983.
3. Anand, M.M.: Tourism and Hotel Industry in India; Sterling Published (P) Ltd., New Delhi, 1990.
4. Kaul, R.H.: Dynamics of Tourism; A Terminology; Sterling Published (P) Ltd., New Delhi, 1996.
5. IITTM Growth of Modern Tourism, Monograph IITTM, New Delhi, 1989.
6. IITTM: Tourism as an Industry Monograph IITTM, New Delhi, 1989.
7. Burkart & Madlik Tourism – Past, Present and Future, Heinemann, London, 1974
8. Wahab, S.E.: Tourism Management: Tourism International Press, London, 1986.
9. Brymer, Robert A: Introduction to Hotel and Restaurant Management: Hub Publication, Co., I/OWA, 1984.
10. Riccline J.R. Brent: Travel and Tourism Hospitality, Research, London, 1982.
11. Surinder Aggarwal: Travel Agency Management Communication India, 1983.

**SEMESTER-I****TAX PROCEDURES & PRACTICES (VOCATIONAL)  
INCOME TAX LAW-I****Time: 3 Hours****Max Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Introduction to Income Tax Act, 1961: Important terms and Definitions; Determination of Residential Status, Exempted Incomes. (Section 10, 11 to 13A)

**SECTION-B**

Heads of Income- Income from Salaries, Income from House Property.

**SECTION-C**

Income from Profits & Gains from Business and Profession, Deduction under section 80 (except those applicable to corporate assessee) Depreciation.

**SECTION-D**

Income from Capital Gains & Income from other sources, Clubbing of Income and Set – off and carry forward of losses, aggregation of income;  
Deductions from Gross, Total Income under Chapter VIA.

**Suggested Readings:-**

1. Datey, V.S., "*Indirect Tax Law & Practice*", 2008, Taxmann Publications Pvt. Ltd. New Delhi
2. Mehrota, H.C., "*Indirect Taxes Law and Practice*", 2009, Sahitya Bhawan Publications, Agra
3. Ahuja, G. and Gupta,R., "*Systematic Approach to Income Tax*", 2011, Bharat Law House Pvt. Ltd., New Delhi
4. Singhania, V.K. and Singhania,M., "*Students' Guide to Income Tax*", 2013, Taxmann Publication Pvt. Ltd, New Delhi.
5. Ahuja, G. and Gupta, R., "*Simplified Approach to Corporate Tax Planning and Management*", 2012, Bharat Law House Pvt. Ltd., New Delhi.

**SEMESTER-I**

**ADVERTISING SALES PROMOTION AND SALES MANAGEMENT  
(VOCATIONAL)**

**MARKETING COMMUNICATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Periods/week: L T**  
**3 3**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**OBJECTIVES:**

This course is intended to impart knowledge and develop skill among the participants in the field of marketing communication, so as to equip them to man junior and lower-middle level positions in the fast-growing and challenging business areas of advertising, sales promotion, selling and sales management and Public relations. The course shall consist of six papers, two each of the three years of under graduate programme in the Indian Universities and other institutions. The six papers are:

1. Marketing Communication.
2. Advertising-I
3. Advertising-II
4. Personal Selling and Salesmanship.
5. Management of the Sales-Force.
6. Sales Promotion and Public relations.

All the papers will be handle so as to have practical orientation, with Indian cases and examples.

**COURSE CONTENTS:**

**SECTION-A**

Nature and importance of Communication, Communication process: Elements of the communication Process,

**SECTION-B**

Application of communication process in marketing. Steps in developing effective marketing communication, Methods of Marketing communication.

**SECTION-C**

Advertising, personal selling, Public relations, sales promotion, their meaning and distinctive characteristics; Setting up of targets: Policies, strategies and methods of achievements.

**SECTION-D**

Integrated Communication in Marketing.

**Suggested Readings:-**

1. Kotler Phillip, Kevn Lane Ketter, Abrahan Koshy and Mithileshwari Jha, Marketing Management, PHI, 13th ed., 2007.
2. Etzel, Michael J., Bruce J. Walker, William J. Stantonard Ajay Pandit. Marketing Concepts Cases, 13th edition, Tata, McGraw Hill, 2006.
3. Rampal, M.K. and S.L. Gupta, Cases & Simulations is Marketing Management, Galgotia Publishing Co., 2000.

**SEMESTER-I****COMMERCE****COMMERCE THEORY AND FUNCTIONAL MANAGEMENT****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**The candidates are allowed to use simple (Non-Scientific) calculators.**

**SECTION-A**

A critical evaluation of various definitions of Commerce, Commerce Art or Science or both, Commerce as a Profession, Relationship and Difference between Economics, Commerce and Management,

**Functions of Commerce:** Traditional and Modern.

**Management:** Definition, purpose and significance. Management Art or Science for both.

**SECTION-B**

**Management as a Process:** Planning, Organising, Staffing, Direction and Control and their meaning, Features and principles.

**Contributions to Management thought** with special reference to Taylor, Fayel, Elton Mayo.

**Personnel Management:** Meaning and significance, Managerial and operative Functions—Recruitment, Selection and training. Methods of wage payment, absenteeism and labour turnover, Job evaluation and merit rating, Trade Unionism, worker's participation in management.

**SECTION-C**

**Marketing Management:** Concept of Marketing, functions of marketing research—meaning and, Techniques, advertising and salesmanship.

**SECTION-D**

**Production:** Functions, production, planning and control, purchasing and storekeeping, inventory Control, quality control.

**Finance:** Meaning and importance, sources of finance.

**Suggested Readings:**

1. Bose Chandra, "Principles of Management and Administration", Prentice Hall of India, 2007.
2. Massie, "Essentials of Management", Fourth Edition, Prentice Hall of India, 2007.
3. Robbins and Coulter, "Management", 8th Edition, Prentice Hall of India, 2007.
4. Dholakia Nikhilesh and Khurana Rakesh, "Marketing Management", McMillan India Ltd., 2007.
5. Hitt, "Management", Pearson Education, 2007.

**SEMESTER-I****MATHEMATICS  
PAPER-I: ALGEBRA****Time: 3 Hours****Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Linear independence of row and column vectors. Row rank, Column rank of a matrix, Equivalence of column and row ranks, Nullity of matrix, Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations.

**SECTION-B**

Eigen values, Eigen vectors, minimal and the characteristic equation of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix. Quadratic Forms, quadratic form as a product of matrices. The set of quadratic forms over a field.

**SECTION-C**

Congruence of quadratic forms and matrices. Congruent transformations of matrices. Elementary congruent transformations. Congruent reduction of a symmetric matrix. Matrix Congruence of skew-symmetric matrices. Reduction in the real field. Classification of real quadratic forms in variables. Definite, semi-definite and indefinite real quadratic forms. Characteristic properties of definite, semi-definite and indefinite forms.

**SECTION-D**

Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations and symmetric function of roots, Descarte's rule of signs, Newton's Method of divisors, Solution of cubic equations by Cardon method, Solution of biquadratic equations by Descarte's and Ferrari's Methods.

**Books Recommended:-**

1. K.B. Dutta: Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd., New Delhi (2002).
2. H.S. Hall and S.R. Knight: Higher Algebra, H.M. Publications, 1994.
3. Chandrika Parsad: Text book on Algebra and Theory of Equations, Pothishala Pvt. Ltd., Allahabad.
4. S.L. Loney: Plane Trigonometry Part-II, Macmillan and Company, London.
5. Shanti Narayan and P.K. Mittal: Text Book of Matrices.

**SEMESTER-I****MATHEMATICS****PAPER-II: CALCULUS AND TRIGONOMETRY****Time: 3 Hours****Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Real number system and its properties, lub, glb of sets of real numbers, limit of a function, Basic properties of limits, Continuous functions and classification of discontinuities, Uniform continuities.

**SECTION-B**

Differentiation of hyperbolic functions, Successive differentiation, Leibnitz theorem, Taylor's and Maclaurin's theorem with various forms of remainders, Indeterminate forms.

**SECTION-C**

De-Moivre's Theorem and its applications, circular and hyperbolic functions and their inverses.

**SECTION-D**

Exponential and Logarithmic function of a complex numbers, Expansion of trigonometric functions, Gregory's series, Summation of series.

**Books Recommended:-**

1. N. Piskunov: Differential and Integral Calculus, Peace Publishers, Moscow.
2. Gorakh Prasad: Differential Calculus, Pothishala Pvt. Ltd., Allahabad.
3. Erwin Kreyszig: Advanced Engineering Mathematics, John Wiley and Sons, 1999.

**SEMESTER-I****STATISTICS****PAPER-I: STATISTICAL METHODS-I****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Meaning and scope of statistics, Collection of data, presentation of data, diagrammatic representation of data. Attributes and variables, discrete and continuous frequency distribution of a variable, graphical representation of frequency distribution of a variable.

**SECTION-B**

Central tendency: Measures of central tendency, namely, Arithmetic mean, median, mode, Geometric mean, Harmonic mean and their comparisons with an ideal measure of central tendency.

**SECTION-C**

Dispersion and its measures, range, mean deviation, quartile deviation and standard deviation. Advantages of standard deviation as measure of dispersion over the other measures, Relative measures of dispersion, coefficient of variation.

**SECTION-D**

Central and non-central moments, central-moments expressed in terms of moments about an arbitrary origin and vice-versa. Sheppard's correction for moments. Skewness and its measures, Kurtosis and its measures.

**Books Recommended:-**

1. Gupta, S.C. and Kapoor, V.K.: Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.
2. Croxton F.E., Cowden, D.J. and Kelin, S. (1973): Applied General Statistics, Prentice Hall of India.
3. Goon, A.M. Gupta, M.K. and Dasgupta B.: Fundamentals of Statistics, Vol. I, World Press, 2005.

**Books Suggested for Supplementary Reading:-**

1. Goon, A.M. Gupta, M.K. and Dasgupta B.: Basic Statistics, World Press, 2005.
2. Gupta, S.C.: Statistical Methods, Himalayan Publishing House, 2003.
3. Nagar, A.L. and Das, R.K., Basic Statistics, Oxford University Press, 2005.

**SEMESTER-I****STATISTICS****PAPER-II: PROBABILITY****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Random experiments, sample space, events, mutually exclusive and exhaustive events, algebra of events, various definitions of the probability, axiomatic probability function and its properties.

**SECTION-B**

Finite sample spaces; equally likely outcomes, additive law of probability, conditional probability, multiplicative law of probability, independent events. Baye's Theorem and its applications.

**SECTION-C**

Random variable, examples of random variables, Discrete and continuous random variables, probability mass function and density function, cumulative distribution function, Properties of distribution function of discrete and continuous random variables. Real valued functions of one dimensional random variables and the procedures of finding the probability distribution functions of such functions illustrated by examples.

**SECTION-D**

Expected value of a random variable and of functions of one dimensional random variable. Properties of expected values. variance of random variable and its properties. Moment generating function and its properties.

**Books Recommended:-**

1. Meyer, P.L. Introductory Probability and Statistical Applications, Addison—Wesley, (1970).
2. Ross, S.A. First Course in Probability, Sixth Edition, Pearson Education, 2007.

**Books Suggested for Supplementary Reading:-**

1. Biswal, P.C., Probability and Statistics, Prentice Hall, India, 2007.
2. Miller, I, and Miller, M. Mathematical Statistics with Applications, Seventh Edition, Pearson Education, 2007
3. Hogg. R.V., Mcken, J.W. and Craig. A.T., Introduction to Mathematical Statistics, Pearson Education, 2007.

**SEMESTER-I****STATISTICS****PAPER-III: Practical based on PAPER-I: STATISTICAL METHODS-I****Time: 2 Hours****Marks: 30**

Teaching time for practical paper would be one hour per week.

**List of practical exercises**

1. Exercises on presentation of Data
2. Exercises on measurers of central tendency
3. Exercises on measures of dispersion
4. Exercises on calculation of moments
5. Exercises on measures of Skewness
6. Exercises on measures of Kurtosis

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and another one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non-Programmable calculators. The distribution of marks is as under:-

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

**SEMESTER-I**

**CHEMISTRY (INORGANIC CHEMISTRY-A)  
(THEORY)**

**Time: 3 Hrs.  
45 Hrs (3 Hrs/week)**

**Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**I. Atomic Structure**

**10 Hrs.**

Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals, Schrodinger wave equation, significance of  $\psi^1$  and  $\psi^2$ , quantum numbers, radial and angular wave functions and probability distribution curves, shapes of s,p,d orbitals. Aufbau and Pauli exclusion principles, Hund's multiplicity rule. Electronic configurations of the elements and ions.

**SECTION-B**

**II. Periodic Properties**

**10 Hrs.**

Position of elements in the periodic table; effective nuclear charge and its calculations. Atomic and ionic radii, ionization energy, electron affinity and electronegativity –definition, methods of determination or evaluation, trends in periodic table and applications in predicting and explaining the chemical behaviour.

**SECTION-C**

**III. Chemical Bonding**

**12 Hrs**

Covalent Bond –Valence bond theory and its limitations, directional characteristics of covalent bond, various types of hybridization and shapes of simple inorganic molecules and ions.  $\text{BeF}_2$ ,  $\text{BF}_3$ ,  $\text{CH}_4$ ,  $\text{PF}_5$ ,  $\text{SF}_6$ ,  $\text{IF}_7$ ,  $\text{SnCl}_2$ ,  $\text{XeF}_4$ ,  $\text{BF}_4$ ,  $\text{SnCl}_6$ . Valence shell electron pair repulsion (VSEPR) theory to  $\text{NH}_3$ ,  $\text{H}_3\text{O}^+$ ,  $\text{SF}_4$ ,  $\text{ClF}_3$ ,  $\text{ICl}_2$  and  $\text{H}_2\text{O}$ . MO theory, homonuclear (elements and ions of 1st and 2nd row), and heteronuclear ( $\text{BO}$ ,  $\text{CN}^-$ ,  $\text{CO}$ ,  $\text{NO}^+$ ,  $\text{CO}^+$ ,  $\text{CN}$ ), diatomic molecules, multicenter bonding in electron deficient molecule (Boranes). Percentage ionic character from dipole moment and electronegativity difference.

## SECTION-D

### IV. Ionic Solids

13Hrs

Concept of close packing, Ionic structures, (NaCl type, Zinc blende, Wurtzite, CaF<sub>2</sub> and antifluorite, radius ratio rule and coordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy and Born–Haber cycle, solvation energy and solubility of ionic solids, polarizing power and polarisability of ions, Fajan’s rule. Metallic bond– free electron, valence bond and band theories.

**Weak Interactions** –Hydrogen bonding, Vander Waals forces.

#### **Books Suggested:-**

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDaniell, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
6. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
7. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
8. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
9. University General Chemistry, C.N.R. Rao, Macmillan.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

**SEMESTER-I****CHEMISTRY (ORGANIC CHEMISTRY-B)  
(THEORY)****Time: 3 Hrs.****45 Hrs. (3 Hrs./Week)****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****I. Structure and Bonding****(5 Hrs.)**

Hybridization, bond lengths and bond angles, bond energy, localized and delocalized chemical bond, Vander Waals interactions, resonance, hyperconjugation, aromaticity hydrogen bonding and Inductive and electrometric effects.

**II. Mechanism of Organic Reactions****(6 Hrs.)**

Curved arrow notation, drawing electron movements with arrows, half-headed and double-headed arrows, homolytic and heterolytic bond breaking. Types of reagents – electrophiles and nucleophiles. Types of organic reactions. Energy considerations.

Reactive intermediates –Carbocations, carbanions, free radicals, carbenes, arenes and nitrenes (with examples). Assigning formal charges on intermediates and other ionic species.

**SECTION-B****III. Alkanes****(4 Hrs.)**

Isomerism in alkanes, sources, methods of formation (with special reference to Wurtz reaction, Kolbe reaction, Corey–House reaction and decarboxylation of carboxylic acids), physical properties and chemical reactions of alkanes. Mechanism of free radical halogenation of alkanes: orientation, reactivity and selectivity.

**IV. Alkenes and Alkynes****(8 Hrs.)**

Nomenclature of alkenes, methods of formation, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides, regioselectivity in alcohol dehydration. The Saytzeff rule, Hofmann elimination, physical properties and relative stabilities of alkenes. Chemical reactions of alkenes-mechanisms involved in hydrogenation, electrophilic and free radical additions, Markownikoff's rule, hydroboration-oxidation, oxymercuration reduction. Epoxidation, ozonolysis, hydration, hydroxylation and oxidation with  $\text{KMnO}_4$ .

Substitution at the allylic and vinylic positions of alkenes.

Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes, acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroboration-oxidation, metal-ammonia reductions, oxidation and polymerization.

### SECTION-C

#### V. Alkyl and Aryl Halides

(7 Hrs.)

Nomenclature and classes of alkyl halides, chemical reactions. Mechanisms of nucleophilic substitution reaction of alkyl halides, SN2 and SN1 reactions with energy profile diagrams. Nuclear and side chain reactions. The addition-elimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions. Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides.

#### VI. Cycloalkanes:

(5 Hrs.)

Baeyer's strain theory and its limitations. Ring strain in small rings (cyclopropane and cyclobutane), theory of strainless rings. The case of cyclopropane ring: banana bonds.

### SECTION-D

#### VII. Arenes and Aromaticity

(10 Hrs.)

Nomenclature of benzene derivatives. The aryl group. Aromatic nucleus and side chain. Structure of benzene: Molecular formula and Kekule structure. Stability and carbon carbon bond lengths of benzene, resonance structure, MO picture.

Aromaticity: the Huckel's rule, aromatic ions.

Aromatic electrophilic substitution—general pattern of the mechanism, role of  $\pi$  and  $\sigma$  complexes. Mechanism of nitration, halogenation, sulphonation, mercuration and Friedel Crafts reaction. Energy profile diagrams. Activating and deactivating substituents, orientation and ortho/para ratio. Side chain reactions of benzene derivatives. Methods of formation and chemical reactions of alkylbenzenes.

#### Books suggested:-

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
2. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
3. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson education, 2008.
4. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: New Age International, 1985.
5. Carey, F.A., Sundberg, R.J., Advanced Organic Chemistry Part B: Reactions and Synthesis.
6. Fundamentals of Organic Chemistry, Solomons, John Wiley.
7. Introduction to Organic Chemistry, Sireitwieser, Heathcock and Kosover, Macmilan.

**SEMESTER-I****CHEMISTRY****(PRACTICAL)**

**Duration: 3½ Hrs.**  
**6 Period/Week**

**Marks: 30**

**Inorganic Chemistry:** Semi Micro analysis. Cation analysis, Separation and identification of ions from groups I, II, III, IV, V, and VI. Anionic analysis. Four ions with no interference.

**Organic Chemistry Laboratory Techniques****Determination of Melting Point**

Naphthalene 80–82°C	Cinnamic acid 132.5–133°C
Benzoic acid 121.5–122°C	Salicylic acid 157.5–158°C
Urea 132.5–133°C	Acetanilide 113.5–114°C
Succinic Acid 184.5–185°C	m–dinitro benzene 90°C
P–dichlorobenzene 52°C	Aspirin 135°C

**Determination of Boiling Point**

Ethanol 78°C	Cyclo Hexane 81.4°C,
Benzene–80°C	Toluene 110°C

**Practical Examination**

1) Inorganic Mixture	18
2) Melting Point/Boiling point of organic substance	05
3) Viva–Voce	04
4) Note Book	03

**Books Suggested:-**

1. Vogel's Qualitative Inorganic Analysis, revised, Svehla, Orient Longman.
2. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge. Standard Methods of Chemical. Analysis, W.W. Scott: The Technical Press.
3. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
4. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
5. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.

**SEMESTER-I****PHYSICS****PAPER-A: MECHANICS  
(THEORY)****Time: 3 Hours****Marks: 35****Total Teaching Hrs: 45(3Hrs./week)****Pass Marks: 35%****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Cartesian and spherical polar co-ordinate systems, area, volume, velocity and Acceleration in these systems. Solid angle, Relationship of conservation laws and symmetries of space and time.

**11 Lectures****SECTION-B**

Various forces in Nature (Brief introduction) centre of mass, equivalent one body problem, central forces, equation of motion under central force, equation of orbit and turning points. Kepler Laws. Concept of Ether and Michelson-Morley experiment.

**11 Lectures****SECTION-C**

Inertial frame of reference. Galilean transformation and Invariance. Non Inertial frames, coriolis force and its applications. Variation of acceleration due to gravity with latitude. Foucault pendulum.

**11 Lectures****SECTION-D**

Elastic collision in Lab and C.M. system, velocities, angles and energies, cross section of elastic scattering, Rutherford scattering. Rigid Body motion; Rotational motion, principal moments and Axes. Euler's equations, precession and elementary gyroscope.

**12 Lectures****Books Suggested:-**

1. Mechanics, Berkeley Vol.-I by C. Kittel.
2. Mechanics, H.S. Hans & S.P. Puri.

## SEMESTER-I

### PHYSICS

#### PAPER-B: ELECTRICITY AND MAGNETISM (THEORY)

**Time: 3 Hours**

**Total Teaching Hrs: 45(3Hrs./week)**

**Pass Marks: 35%**

**Marks: 35**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

Basic ideas of Vector Calculus Gradient, Divergence, curl and their physical significance. Laplacian in rectangular, cylindrical and spherical coordinates. Coulomb's Law for point charges and continuous distribution of charges. Electric field due to dipole, line charge and sheet of charge. Electric flux, Gauss's Law and its applications. Gauss's divergence theorem and differential form of Gauss's Law. Green's theorem.

**12 Lectures**

#### SECTION-B

Work and potential difference. Potential difference as line integral of field. Electric potential due to a point charge, a group of point charges, dipole and quadrupole moments, long uniformly charged wire, charged disc. Stoke's theorem and its applications in Electrostatic field,  $\text{curl } \mathbf{E}=0$ . Electric fields as gradient of scalar potential. Calculation of E due to a point charge and dipole from potential. Potential due to arbitrary charge distribution and multipole moments.

**11 Lectures**

#### SECTION-C

Poisson and Laplace's equation and their solutions in Cartesian and spherical coordinates. Concept of electrical images. Calculation of electric potential and field due to a point charge placed near an infinitely conducting sheet. Current and current density, equation of continuity. Microscopic form of Ohm's Law ( $\mathbf{J} = \sigma \mathbf{E}$ ) and conductivity, Failure of Ohm's Law.

**11 Lectures**

#### SECTION-D

Interaction between moving charges and force between parallel currents. Behaviour of various substances in magnetic field. Definition of M and H and their relation to free and bound currents. Permeability and susceptibility and their interrelationship. Orbital motion of electrons and diamagnetism, Paramagnetism and Ferromagnetism.

**11 Lectures**

#### **Books Suggested:-**

1. Fundamentals of Electricity and Magnetism by Arthur F. Kipp.
2. Electricity and Magnetism, Berkeley Physics Course, Vol. II by E.M. Purcell.
3. Introduction to Classical Electrodynamics by David Griffith.
4. EM Waves and Radiating System by Edward C. Jordan and K.G. Balmain.
5. Fields and Waves Electromagnetic by David K. Cheng.

## SEMESTER-I

### PHYSICS

#### (PRACTICAL)

#### General Guidelines for Practical Examination: (4.5h/week)

- |    |  |                  |
|----|--|------------------|
| I. | The distribution of marks is as follows: | <b>Marks: 30</b> |
|    | i) One experiment                        | <b>15 Marks</b>  |
|    | ii) Brief Theory                         | <b>5 Marks</b>   |
|    | iii) Viva-Voce                           | <b>5 Marks</b>   |
|    | iv) Record (Practical file)              | <b>5 Marks</b>   |
- II. There will be one sessions of 3 hours duration. The paper will have one session.  
Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
- III. Number of candidates in a group for practical examination should not exceed 12.
- IV. In a single group no experiment be allotted to more than three examinee in any group.
1. To study the dependence of moment of inertia on distribution of mass (by noting time periods of oscillations using objects of various geometrical shapes but of same mass).
  2. To establish relationship between torque and angular acceleration using fly wheel.
  3. To find the moment of inertia of a flywheel.
  4. Study of bending of beams and determination of Young's modulus.
  5. Determination of Poisson's ratio for rubber.
  6. To determine energy transfer, coefficient of restitution and verify laws of conservation of linear momentum and kinetic energy in elastic collisions using one dimensional collisions of hanging spheres.
  7. To verify the laws of vibrating string by Melde's experiment.
  8. Measure time period as a function of distance of centre of suspension (oscillation) from centre of mass, plot relevant graphs, determine radius of gyration and acceleration due to gravity.
  9. Find the value of 'g' by Kater's pendulum.
  10. Measure time period of oscillation of a Maxwell needle and determine modulus of rigidity of the material of a given wire.
  11. To measure logarithmic decrement, coefficient of damping, relaxation time, and quality factor of a damped simple pendulum.

**SEMESTER-I**

**HOME SCIENCE  
(THEORY)**

**FAMILY RESOURCE MANAGEMENT & HYGIENE**

**Time: 3 Hours  
6 Periods/week**

**Max. Marks: 100  
Theory Marks: 60  
Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Home : Meaning and importance of Home Science
2. Functions of Home: Renting v/s owning
3. Selection of site, soil, locality for a house
4. Principles of planning a house, orientation aspect, prospect, privacy, roominess, grouping, flexibility, circulation, sanitation, furniture requirement and practical considerations.

**SECTION-B**

5. Elements of Art: line, form, shape, texture, size.
6. Principles of Art in relation to interior decoration, Harmony, Balance, Rhythm, Proportion and Emphasis.
7. **Colour**
  - Characteristic of colour
  - Colour wheel
  - Colour schemes
  - Use of colour in Int. Decoration for various rooms.

**SECTION-C**

8. **Hygiene**
  - a) Definition of hygiene.
  - b) Definition of infection, sources, carrier and control.
  - c) Definition and types of Immunity
9. **Causes and Spread of following Diseases**
  - a) Caused by insects–malaria, dengue.
  - b) Conveyed by ingestion–Enteric fever, Jaundice, Dysentery, and Diarrhea.
  - c) Spread by droplet infection, chicken pox, measles, and mumps tuberculosis.
  - d) Sexually transmitted diseases–AIDS.

**SECTION-D**

10. **Food Hygiene**
  - a) Food Hygiene – Definition
  - b) Hygiene during preparation, service and storage of food.
  - c) Food poisoning, causes and prevention.
  - d) Purification and storage of Water for home.

**SEMESTER-I****HOME SCIENCE****FAMILY RESOURCE MANAGEMENT & HYGIENE  
(PRACTICAL)**

**Time: 3 Hours**  
**4 Periods/week**

**Marks: 40**

Cleaning & polishing of household metals, brass, copper, silver, gold, aluminum, iron, steel, non stick pans, plastic.

Colour Wheel.

Colour Schemes– Monochromatic, Analogous, Complementary. Prepare any five texture sheets using Fevicol, Spray, Stencil, Thread, Pulling, Crayons marbling etc.

Floor decoration of Alpana & Rangoli for different Occasions.

**Instruction for the practical examiner:-**

There will be three questions from the syllabus. The division of marks will be as follows:

Cleaning of metal.	<b>10 Marks</b>
Color schemes/textured sheet.	<b>10 Marks</b>
Rangoli/alpna	<b>10 Marks</b>
File and viva	<b>10 Marks</b>

**Note: One Practical group will consist of 15 students.**

**SEMESTER-I**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**  
**PAPER-A: BASIC NUTRITION**

**(THEORY) Time-3 hrs**  
**Pds-4/Week**

**Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**OBJECTIVE:**

To understand the relationship between nutrition and human well being.  
To know the functions, sources and deficiencies of nutrient in human body.

**COURSE CONTENT**

**SECTION-A**

1. Introduction to nutrition- Food as a sources of nutrients, definition of Nutrition, nutrients, adequate, optimum and malnutrition.
2. Classification of food.
3. Methods of cooking: Boiling, Steaming, frying, baking, roasting, Braising and microwave cooking.
4. Methods of enhancing nutritive value of food: fermentation, sprouting, & supplementation, fortification and enrichment.

**SECTION-B**

5. Carbohydrates - Composition, classification, functions, food sources, requirement, deficiencies.
6. Protein - Composition, Classification, Essential and Non- essential amino acids, food Sources, functions, deficiencies.

**SECTION-C**

7. Fats and Oils- Composition, Classification, Saturated, Unsaturated fatty acids, food sources, Functions, requirement and deficiencies.
8. Energy-
  - (i) Unit of energy, food as a source of energy, energy value of food, body need of energy.
  - (ii) Factors affecting energy require
    - a) Determination of energy value of foods using calorimeter
    - b) Specific Dynamic action
    - c) Basal Metabolism
    - d) Determination of basal metabolism
    - e) Factors affecting the BMR

**SECTION-D**

9. Vitamin- Classification, unit of measurements sources, requirements functions and deficiency excess & Toxicity of following vitamins.
  - (a) Fat Soluble vitamins A, D, E and K
  - (b) Water soluble vitamins- C, B1-B2, B3, B6, B12 and Folic acid.
10. Mineral- Functions, Sources, Bio-availability requirement and deficiency of following Minerals:
  - a) Calcium, iron, iodine, fluorine, Sodium, Potassium, Phosphorus, and Magnesium'.
11. Importance of water in Nutrition.

## **SEMESTER-I**

### **CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

#### **BASIC NUTRITION (PRACTICAL)**

**Pds- 3pds/ week**

**(THERE WILL BE NO PRACTICAL EXAM)**

- 1) Identification of different food stuffs, weight and measures and cooking terms.
- 2) Beverage- e.g. Hot and cold (Tea, Coffee, fruit and milk based, beverage) etc.
- 3) Prepare 5 dishes using following methods:
  - (a) Boiling: Pulses, rice, soups, desserts, etc.
  - (b) Shallow Frying: Pancakes, snacks, etc.
  - (c) Deep Frying: Sweet and savory snacks, main dishes, etc.
  - (d) Fermenting and Steaming: Idli, dosa, dhokla, etc.
  - (e) Supplementatation; cereal-pulse combination, cereal-vegetables combination etc.
- 4) Daily and occasional cleaning of kitchen equipments, utensils counter, floor and cupboards.

#### **References:-**

1. Guthrie, Hele, Andrews, Introductory Nutrition, 6th ed.ion St. Louts, Times Mirror/Mosby College: 1988.
2. Mudambi S.R. M.V. Rajgopal. Fundamental of Foods & Nutrition (2nd ed.) Wily Eastern Ltd. 1990.
3. Swaminathan S: Advanced text book on foods Nutrition, Vol. I, II (2nd ed. Revised & enlarged) B. app C-1985.

**SEMESTER-I****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****PAPER-B: NUTRITIONAL BIOCHEMISTRY (THEORY)**

**Time-3 hrs**  
**Pds-4/Week**

**Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**OBJECTIVE:**

This Course help, students to gain understanding of the application of Biochemistry to foods, Nutrition and diet therapy.

**COURSE CONTENT****SECTION-A**

1. Carbohydrate Metabolism - Digestion, Absorption, Glucose, Transport Glycolysis, Metabolism of lactate, and pyruvate, citric acid cycle, gluconeogenesis, HMP Shunt pathway.

**SECTION-B**

2. Lipid Metabolism- Digestion- Absorption, transport oxidation of fatty acids, biosynthesis of fatty acids mobilization of fats (lipolysis), Ketogenesis, Metabolism of phospholipids and cholesterol.
3. Amino acid metabolism- Digestion, Absorption, Transport, General Pathways, Biochemical, Transformations and metabolism.

**SECTION-C**

4. Enzymes - Definition, Classification, Specificity of enzymes and factors affecting enzyme activity.
5. Basal Metabolism - Definition and factors affecting basal metabolism, Specific dynamic action of food stuffs, Estimation of B.M.R.

**SECTION-D**

6. Metabolism of inorganic element, calcium, iron, phosphorus and magnesium.
7. Water and electrolyte balance.

**SEMESTER-I****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****PAPER-B: NUTRITIONAL BIOCHEMISTRY (PRACTICAL)**

**Time-3 Hours**  
**3 pds/Week**

**Marks: 20**

**Note- Paper will be set on the spot by the examiner**

1. Qualitative analysis of monosaccharide's, disaccharides and polysaccharides.
2. Quantitative estimation of Glucose.
3. To test the reactions of proteins fats and carbohydrates in milk, egg and bread
4. To find out adulteration in food stuffs.

**References:**

1. Lehninger: A.L. Nelson D Cox MM, Principles of Biochemistry, 1993, 2nd Edition, CBS Publication.
2. Singh Sukhdev, Dr. Om Parkash, PV's Bio Chemistry and Clinical Pathology 2005, Edition, S. Vikas &

**SEMESTER-I****COSMETOLOGY (VOCATIONAL)  
(THEORY)****Time: 3 hrs.****Periods/Week-6****Max. Marks: 100****Theory Marks: 40****Practical Marks: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**OBJECTIVES****To create awareness about the cosmetology****To impart knowledge of skin and personal grooming****SECTION-A****Cosmetology**

- Introduction
- Aims and Importance

**SECTION-B****Skin:**

- What is Skin?
- Structure of skin
- Functions of skin
- Types of skin
- Common skin problems

**SECTION-C****Personal Grooming:**

- Personal Hygiene
- Care of mouth, teeth, ears, feet, removing body hair, skin care and cosmetics, care of hair, nail and hand care, care of your clothing.

**SECTION-D****Massage:**

- Theory of massage
- Benefits of massage
- Basic knowledge of facial muscles

**SEMESTER-I****COSMETOLOGY (VOCATIONAL)****(PRACTICAL)****Time: 4hrs.****Marks: 60****Periods/Week – 6****Note: Paper will be set on the spot by the examiner.****Project file will be evaluated by External Examiner which carries – 10 marks.****1. Massage:**

- a) Methods of massage
- b) Massage Techniques

**2. Facial Treatments:**

- a) Knowledge of skin analysis
- b) Facial Massage

- 3. Skin Treatments:** Different types of skin treatments with the help of natural ingredients like packs, masks and creams for different skins.

**SEMESTER-I****FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)****FASHION DESIGNING-1  
(THEORY)**

**Time: 3 Hrs.**  
**Period: 3/Week**

**Max Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****1. Fashion Terminology-**

Fashion, Fad, Style, Classic fashion, Fashion trends, Haute couture, Prêt-a porter, Mass production

**SECTION-B****2. Fashion Cycle, Broken Fashion Cycle.****3. Factors Affecting Fashion Cycle.****SECTION-C****4. Origin of Fashion.****5. Theories of Fashion Adoption.****SECTION-D****6. Components of Fashion- Line, Color, Texture**

**SEMESTER-I**

**FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)**

**SCALE DRAWING AND GARMENT CONSTRUCTION  
(PRACTICAL)**

**Time: 4 Hrs.**

**Marks: 60**

**Period: 2 x 6/Week**

**Instructions for the paper setters:**

1. Construction of any one sample from section A.
2. Two questions from Part B.
3. File Work.

**Marks: 25**

**Marks: 25**

**Marks: 10**

**SECTION-A**

1. **Sewing machine- Parts, Care & use**
2. **Make samples of the followings**  
 Basting, Hemming, Running, Back stitch, Buttonhole fasteners.  
 Seams- Plain seam, Plain seam with top stitching, French seam, Run 'n' fell, Counter Seam.  
 Seam finishers- blanket stitch, over stitch, pinking, overcasting.  
 Finishes of neckline- facing & binding  
 Pleats- knife, box, inverted box.  
 Placket-one piece, continuous.  
 Pocket-patch, cross pocket.  
 Tucks- pin, cross, shell, space.  
 Gathers
3. **Drafting and construction**  
 (a) Drafting and construction of basic bodice block and sleeve block.

**SECTION-B**

4. 1 Basic block figure
2. Distribution of weight
3. Flesh figure
4. Formulae of hand and feet
5. Formulae of face
6. Legs formulae
7. Necklines and Collars
8. Sleeves and Cuffs
9. Skirts- Pleats, gathers, frills, fringes

**SEMESTER-I**  
**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)**  
**(THEORY)**

**Time: 3 Hrs.**

**Periods/week: 6 Theory**

**Maximum Marks: 100**

**Marks: 60**

**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Definition & Importance of Child Development, Stages of Child Development.
2. Principles of Development.
3. Factors affecting Development.

**SECTION-B**

4. Care of Mother: Pregnancy, Discomforts, physical & psychological care, preparation for Delivery.
5. Growth & Development during Pre-Natal period, Factors affecting Pre-Natal Development.

**SECTION-C**

6. Reflexes of new born child.
7. Care of Infant: Breast feeding, Bottle feeding, Weaning
8. Clothing for the Infant.

**SECTION-D**

9. Immunization Schedule.
10. Common Childhood Diseases: common cold, cough, fever, measles.

**SEMESTER-I****FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)****FSQC (I): FOOD CHEMISTRY AND NUTRITION  
(THEORY)****Time: 3 Hours****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Introduction to nutrition—food as a source of nutrients, function of foods, definition of nutrition, nutrients, adequate, optimum and good nutrition, malnutrition.
2. Inter-relationship between nutrition and health—parameters of good health.
3. Food guide—basic five food groups – Importance, uses.
4. Food Metabolism – digestion, absorption, transport, utilization of nutrients in the body.
5. Water—function, sources, requirement, water balance, effect of deficiency on health.
6. Carbohydrate—composition, classification, food sources, storage in body, reaction, structure, functions of mono, oligo and poly saccharides in foods.
7. Fat and oils — composition, saturated, unsaturated fatty/acids, food sources, functions of fats. Nomenclature and classification. Physical and chemical properties Emulsions and emulsifiers. Role of fat and oil in food processing and its organoleptic characteristics.
8. Proteins — composition essential, non-essential amino acids, sources of protein, functions, protein deficiency diseases. Physico-chemical properties. Modification of food protein during processing and storage.

**SECTION-B**

9. Energy — unit of energy, food as a source of energy, calorific value of food need for energy, Basic metabolic role, utilization of fat energy requirement.
10. Minerals, function, source, bio-availability, deficiency of calcium, iron, iodine, fluorine, sodium, potassium.
11. Vitamins: classification, sources, functions and deficiency, diseases of following vitamins
  - a) Fat soluble vitamins – Vitamin. A, D, E and K
  - b) Water soluble vitamins: vitamins C and B-Complex
12. Recommended dietary Requirements: Nutrient requirement for adult men and women as per ICMR.
13. Enzymes: Nomenclature definition, specificity, catalysis, enzyme, kinetics, Factors influencing enzyme activity, controlling enzyme action. Role of enzymes in food processing. Modification of food by endogenous enzyme. Enzyme inhibitors in foods.
14. Pigments sources, chemical and physical properties, effect of processing and storage on pigments.
15. Flavours – vegetables, fruits, spices, sea foods, fermented products.

### SECTION-C

16. Cereals and Pulses: Cereals and millets, breakfast cereals, cereal products, fast foods structure, processing, use in variety of preparations, selection, variety storage, nutritional aspects and cost. Pulses & legumes – Production (in brief) selection and variety, storage, processing, use in variety of preparations, nutritional aspects and cost.
17. Milk and Milk Products: Composition, classification, quality processing, storage, spoilage, uses, cost, nutritional aspects of milk curds, butter milk, paneer, khoa, cheese, ice-cream, kulfi and various kinds of processed milk.

### SECTION-D

18. Egg: Production, grade, quality, selection storage, spoilage, uses, cost and nutritional aspects.
19. Fish, Poultry and Meat: Selection, purchase, storage, uses, cost and nutritional aspects, spoilage of fish, poultry & meat.
20. Vegetables and Fruits: Variety, selection, purchase, storage availability, cost use and nutritional aspects of raw and processed vegetables and fruits.

### References:-

1. Guthrie, Hele, Andrews, Introductory Nutrition 6th ed. St. Louis, Times Mirror/Mosby College, 1988.
2. Mudambi S.R., M.V. Rajgopal, Fundamentals of Foods and Nutrition (2nd ed.) Wiley Eastern Ltd., 1990.
3. Swaminathan S.: Advanced text book of Foods Nutrition Vol. 1, 11, (2nd ed. revised & enlarged) B. App.C. 1985)
4. Willson, PVAD, Principles of Nutrition, 4th ed. New York John Willey & Sons, 1979.
5. Food Chemistry, ed. Or Fenema 2nd ed.
6. Food Chemistry, Mian Hoagland Meger
7. Food Chemistry He Mann

### Book Recommended:-

1. Food Chemistry by O.R. Fennema, 3rd ed, 1996, CRC Press, USA.
2. Mudambi S.R., M.V. Rajgopal, Fundamentals of Foods and Nutritions (2nd ed.) Wiley Eastern Ltd., 1990.
3. Swaminathan S.: Advanced text book of Foods Nutrition Vol. 1,11, (2nd ed. revised & enlarged) B.app.C. 1985)
4. Willson, PVAD, Principles of Nutrition, 4th ed. New York John Willey & Sons, 1979.
5. Food Chemistry, ed. Or Feneema 2nd ed.
6. Food Chemistry by Mian Hoagland Meger
7. Food Chemistry by He Mann

**SEMESTER-I**

**FSQC-2: FOOD CHEMISTRY AND NUTRITION  
(PRACTICAL)**

**Max. Marks: 25**

Instructions for the Paper Setters: Question Paper will be set with the mutual consent of Internal and External Examiners at the spot.

**List of Practicals**

1. Determination of acid value.
2. Determination of iodine value.
3. Determination of saponification value.
4. Quantitative value (testing of proteins, lipids and carbohydrates in different foods).
5. Estimation of Vitamin C.
6. Separation of amino acids by chromatography (paper in exchange column).
7. Chlorination of water.
8. Determination of food enzymes.
9. Determination of fibers content in food.
10. Salt determination in food products.
11. Estimation of Volatile and nonvolatile acids in vinegar.
12. Estimation of fat in food sample by Soxhlet apparatus.
13. Cream separation, neutralization and ripening of milk.
14. Preparation of butter.
15. Preparation of Ghee.

## SEMESTER-I

### PAPER-A: FINE ARTS (DRAWING & PAINTING) (THEORY)

**Time: 3 Hrs.**

**Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 25+25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

1. Six limbs of Indian Painting (Shadanga)
2. Elements of Art: Line, Colour, Form, Texture, Light and Shade

#### SECTION-B

What is composition?

Principles of Art: Perspective, Proportion, Rhythm, Balance, Harmony, Dominance

#### SECTION-C

**Classical Mural Tradition**

Ajanta Paintings: Its technique, Subject Matter, Characteristics, its Paintings

- (i) Bodhisatva Padampani
- (ii) Mother and Child before Buddha
- (iii) Chhadanta Jataka
- (iv) Dying Princess
- (v) Dream of Maya

#### SECTION-D

1. Pre-historic Paintings: Bhim Bhetka Caves
2. Indus Valley Civilization: Its town planning and Sculptures
  - (i) Dancing Girl
  - (ii) Priest
  - (iii) Mother Goddess
  - (iv) Pashupati Seal

**SEMESTER-I****FINE ARTS****PAPER-B: STILL LIFE (DRAWING)  
(PRACTICAL)****Time: 5 Hrs****Marks: 25****Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**Objects to Study:** Proportion, Volume, Texture, Study of Light and Shade.**Number of Objects:** Three objects excluding drapery.**Medium:** Oil/Water/Pastel Colours**Size:** ½ Imperial

**SEMESTER-I****FINE ARTS****PAPER-C: LETTER WRITING / COLLAGE MAKING  
(PRACTICAL)****Time: 5 Hrs****Marks: 25****Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Study of different styles of alphabets

Creative writing of different styles

**Language:** Any

**Medium:** Poster Colours/Indian Ink

**Size:** ½ Imperial

**COLLAGE:** Based on some theme with bits of coloured paper, magazines and newspaper cut with hand.

**Candidates will submit:-**

5 sheets of still life, 2 collage, 3 sheets of letter writing/ slogan writing on different creative styles  
Sketch book containing 50 sketches.

**Note:** The paper setter should set the Paper C only on letter writing and collage. The topic will be given by two examiners.

**SEMESTER-I**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**

**Max Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Brief history of Jewellery of  
(i) Indus Valley civilization,  
(ii) Shunga Period.

**SECTION-B**

Brief history of Jewellery of  
(i) Gupta Period,  
(ii) Mughal period.

**SECTION-C**

Introduction of stone setting and types of stone setting in detail

- (i) Pave setting
- (ii) Prong setting
- (iii) Channel setting
- (iv) Bezel setting
- (v) Pressure setting
- (vi) Invisible setting

Introduction of different types of cuts in gem stones and their importance

- (i) Cabochon cut
- (ii) Step cut
- (iii) Emerald cut
- (iv) Round brilliant cut
- (v) Faceted beads
- (vi) Princess cut
- (vii) Mixed cut

**SECTION-D**

Introduction of Indian jewellery

- (i) Indian tribal jewellery
- (ii) Symbolic jewellery of south India
- (iii) Traditional jewellery of Punjab

**Suggested Books:-**

1. Traditional jewellery of India by Oppi Untracht, Thames and Hudson publication
2. Indian jewellery dance of the peacock by Usha R Bala Krishnan
3. Jewellery concept of technology by Oppi Untracht

**SEMESTER-I**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)**

**DESIGN  
(PRACTICAL)**

**Time: 5 Hours**

**Marks: 50**

**Instruction for the paper setters:**

The Paper will be set by the external examiner on the spot out of prescribed syllabus.

1. Exercises on
  - i) Pencil Control
  - ii) Drawing & Shading in 2 Dimensional and 3 Dimensional objects
  - iii) Motif development for jewellery design
2. Development of Plain and Simple Design for necklaces, pendants, earrings
3. Collecting and recognizing forms for designing and using them in their designs (Medium–Watercolour pencils)

Each student has to submit 20 designs of necklace with earrings, pendent sets, and other accessories at the end of semester.

**SEMESTER-I**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Introduction to Communication:** Introduction to Communication: Concept, Process & Functions.

**Mass Communication:** Intra-personal, Inter-personal, Group and Mass Communication.  
Feedback evaluation of Communication Barriers of communication.

**SECTION-B**

**Verbal Communication:** Concept and Practice, Language and Mass Communication, Language uses in different mass media, Language and Society.

**Non-Verbal Communication:** Non-Verbal Communication, Para Language, Dress and Body Language, Non-Verbal Communication and Mass Communication.

**SECTION-C**

**Role of light:** Properties of light, electromagnetic spectrum, theories of light transmission, spectrum, dispersion, reflection, transmission, refraction, polarization, Controlling light pin-hole camera, simple concave convex, mirror lenses.

**SECTION-D**

**Camera & It's types:** What is Camera & types of Camera.

**Tools of dark rooms:** (B & W) accessories.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Hand Book of Journalism & Mass Communication	Mr. Vir Bala Aggarwal
2.	Basic Photography	John Hedgecoe
3.	35 mm Photography	Bavister

**SEMESTER-I**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

**BASIC PHOTOGRAPHY  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. The paper will be set by the external examiner on the spot considering the syllabus.
2. Creative work on the part of the students is to be emphasized.  
Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. as desired by the examiner.

**Instructions for Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by External Examiner (Class– Teacher) as per requirement.

**Course Contents:**

1. Mechanism Shutter, aperture, focus, camera body, film transport, view finder.
2. Comparison/ classification of camera their focusing mechanism, view finder, range finder  
T.C.R.S.C.R. films format: large, medium miniature disc etc.
3. Handling of camera.
4. Loading and shooting B/W films.
5. Effects of aperture.
6. Effects of shutter speed.
7. Making of grey scale.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Hand Book of Journalism & Mass Communication	Mr. Vir Bala Aggarwal
2.	Basic Photography	John Hedgecoe
3.	35 mm Photography	Bavister

**SEMESTER-I**

**APPLIED ARTS**

**ART APPRECIATION AND ADVERTISING  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Colour:** What do you mean by term colour and Importance of colour in day to day life.

**Types of Colour:** Hue, Tint, Shade or Tone, Value, Saturation.

**Colours in Design:** Importance and effect of colour in Design.

**SECTION-B**

**What is Design:** Definition and Meaning of Design, Elements of Design (Line, Form, Shape, Color, Rhythm, Texture)

**2D and 3D Design:** Introduction, Meaning and difference between 2D and 3D design.

**SECTION-C**

**Logo Design:** Importance and Role of Logo in today's modern world, History and Origin of Logo Design.

**Monogram:** Introduction of Monogram and its history.

**SECTION-D**

**Meaning of Advertising:** Introduction of advertising in detail with its meaning and purpose of advertising in brief.

**Role of an Artist in Advertising:** Detailed introduction of artist's role in advertising and his functions performed.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	2000 Color Palette Swatches	Graham Davis
2.	Logo Cafe	Page 1 Publisher

**SEMESTER-I**

**APPLIED ARTS**

**GREETING CARDS AND LOGO  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Size: ¼ imperial**

**Medium: Poster Color/ Ink**

**Instructions for the Paper Setters:-**

1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Minimum 2 works should be enhanced in Photoshop.
3. Size: As required.

**Course Contents:-**

**Greeting Cards:** Greeting Cards, Greeting Card Envelopes, Gift Paper Designing, Gift Name Card Designing and Bookmark Designing.

**Logo:** Logos, Monograms, Visiting Cards, Letterheads and Envelopes.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Books Name</b>	<b>Author</b>
1.	Logo Café	Page 1 Publisher
2.	Logo Design	ED Julius, Viedemall Taschan Publisher
3.	Letter Head & Logo Design	Design Army, Rock Pot Publisher

**SEMESTER-I****SCULPTURE  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

What is Sculpture? Basic terms related to Sculpture

Meaning of Relief and Round Sculpture

**SECTION-B**

Clay Modeling

Quality and Preparation of Clay, Form and Shape, Clay Modeling

**SECTION-C**

Stone & Wood Carving: Types of stones, techniques and tools

Process of Plaster mould and Casting,

**SECTION-D**

Composition

Elements in Sculptural work: Mass, Movement, Scale, Plane, Texture, Contours, Uses of Material in Sculpture.

**SEMESTER-I**

**SCULPTURE**  
**(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

1. Low Relief in Terracotta (Total No. 2) (Based on natural and geometrical form)
2. Mix Media (Total No. 2) (Paper Clay, Wire, M-Seal etc.)
3. Mask. (Total No. 2) (Paper, Plaster on Paper Mache)

**SEMESTER-I**

**MUSIC (VOCAL)**

**(THEORY)**

**Theory: 3 Hours**  
**Practical: 20 Min. for each student**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Teaching Work load:**  
**Theory: 3 Periods per week**

**Practical: 9 Periods per week**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Method of tuning your instrument (Tanpura).
2. Definition and explanation of the following Musical Terms: Sangeet, Swar, Naad, Saptak, Jati.

**SECTION-B**

3. Contribution and Life Sketches of the following musicians: Tansen or Swami Hari Das, Abdul Karim Khan.
4. Elementary knowledge of Wedding Song of Punjabi culture with special reference to Ghorian and Suhag.

**SECTION-C**

5. Description and notation of the following Ragas: Bilawal, Khamaaj and Bhopali.
6. Description and notation of the following Taals: Teentaal, Dadra.

**SECTION-D**

7. Contribution of Sri Guru Nanak Dev Ji towards Indian Music.
8. Definition and explanation of the following terms in the context of Gurmat Sangeet: Raga, Mohalla, Rahao, Rababi.

**SEMESTER-I****MUSIC (VOCAL)****(PRACTICAL)****Time: 20 Minutes****Marks: 50**

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Bilawal, Khamaaj and Bhopali.
2. One Sargam Geet from prescribed Ragas.
3. Ability to play five alankars on the Harmonium based on the Bilawal Thata.
4. Ability to recite Teental and Dadra showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
5. Recitation of Ghorian.
6. Knowledge of the following non – detailed Ragas: Alahaiya Bilawal, Deshkaar & Kalingara

**Books Recommended:-**

1. Rag Parichya Part – I to IV by Shri Harish Chnder Srivastava.
2. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
3. Sangeet Vishard Sangeet Karayalya, Hathras.
4. Sangeet Shastra Darpan Shanti Govardhan.
5. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
6. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
7. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
8. Sikh Dharam Ate Bhakti Sangeet, Dr. Jitender Kaur.
9. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

**SEMESTER-I**

**MUSIC (INSTRUMENTAL)  
(THEORY)**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Theory: 3 Hrs.**  
**Practical: 20 Min. for each student**  
**Practical: 9 periods per week**  
**Teaching work load:**  
**Theory: 3 periods per week**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. History of your own instrument.
2. Definition and Explanation of the following musical terms:- Sangeet, Shruti, Swar, Saptak, Aaroh, Avroh, Pakad and Thata.

**SECTION-B**

3. Define Raag, Explain its Rules and Jatis.
4. Define laya and taal, its types and features:- vibhag, matra, taali, khali, sam.
5. Life-Sketch and Contribution of the following musicians:- Allaudin khan, Pt. Vishnu Narayan Bhatkhande.

**SECTION-C**

6. Description of all and Notation of any of the following Ragas:- Kalyan, Bilawal and Bhopali.
7. Brief knowledge and notation of the following Talas:- Teen taal and Dadra taal.

**SECTION-D**

8. Contribution of Guru Arjun Dev ji towards Indian music.
9. Definition and explanation of the following terms in the context of Gurmat Sangeet: Raga, Mohalla, Rahao, Rababi.

**Books Recommended:-**

1. Raag Parichey (Part 1,2) by H.C.Shrivastava.
2. Sangeet Shastra Darpan (Part-1,2) by Shanti Gowardhan.
3. Sangeet Visharad, Sangeet Karyalaya Hathras.
4. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
5. Punjab Ki Sangeet Prampara by Geeta Paintal.
6. Sangeet Subodh by Dr.Davinder Kaur
7. Gurmat Sangeet (Vishesh Ank) Amrit kirtan Trust, Chandigarh.
8. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
9. Sitar Vadan Di Prampara, Sharminder Kaur, Publication Bureau:- Punjabi University Patiala.

**SEMESTER-I**

**MUSIC (INSTRUMENTAL)**

**(PRACTICAL)**

**Time: 20 Minutes**

**Marks: 50**

1. Ability to play Ten Alankars of Bilawal Thaata on your Instrument.
2. (i) One Razakhani Gat in each of the following ragas with toras and jhalla:– Raag Kalyan, Bilawal & Bhopali.  
(ii) Play only gat in other two ragas.
3. Ability to recite Teen taal and Dadra taal on hand in ekgun and dugun layakaries.
4. Ability to sing five alankars with harmonium.

**SEMESTER-I**  
**INDIAN CLASSICAL DANCE**

**(THEORY)**

**Time: 3 Hrs.**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Teaching 3 periods per week**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Origin and development of Kathak Dance from Ancient to Mughal period.
2. Definition of the following terms:-Theka, Tatkar, Thaata, Amad, Salami, Tora, Paran, Tehai.
- 3 Knowledge of:- Ang, Pratyang, Upang

**SECTION-B**

4. Study of Rasa and their importance in Kathak Dance.
5. Role of Dance in Society.

**SECTION-C**

6. Knowledge of the Folk Dances of Punjab with their style, costume and music.
7. Notation of Teen Taal with its:
 

(a) Tatkar in Thaah, Dugun and Chaugun Layakaries.		
(b) Thaata	-	1
(c) Tehai	-	1
(d) Amad	-	1
(e) Salami	-	1
(f) Tora	-	2
(g) Paran	-	1
(h) Chakardar Paran	-	1
(i) Kavita	-	1

**SECTION-D**

8. Description of the following talas with the notation of their Thekas in Thaah, Dugun, Tigun and Chaugun Layakaries.
 

(i) Teentaal	(ii) Tilwara	(iii) Kehrva
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9. Recognition of the following taals through some bols given by the examiner:
 

(a) Teentaal	(b) Tilwara	(c) Kehrva
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10. Notation of Nagma in Teen Taal.

**SEMESTER-I****INDIAN CLASSICAL DANCE****Books Recommended:-**

1. Kathak Nritya Ka Prichey  
Subhashni Kapoor  
Radha Publications, New Delhi, 1997.
2. Kathak Sundaryatmak  
Shashtriya Nritya  
Shikha Kharey,  
Knishka Publishers, New Delhi, 2005.
3. Atihasik Pripeksh Mein  
Kathak Naritya  
Maya Tak  
Knishka Publishers, New Delhi, 2006.
4. Nibandh Sangeet  
Laxmi Naryan Garg  
Sangeet Karyalya, Hathras, 2004.
5. Kathak Naritya Shiksha  
Dr. Puru Dadhich  
Bindu Parkashan, Ujjain(MP.)

**SEMESTER-I**  
**INDIAN CLASSICAL DANCE**

**(PRACTICAL)**

**Time: 20 Minutes**

**Marks: 50**

**Teaching 9 periods per week**

Practical demonstration of the following:

**1. Teen Taal its:**

(a) Tatkar in Thaah, Dugun, Tigun and Chaugun Layakaries.		
(b) Thaat	–	1
(c) Tehai	–	1
(d) Amad	–	1
(e) Salami	–	1
(f) Tora	–	2
(g) Paran	–	1
(h) Chakardar Paran	–	1
(i) Kaviti	–	1

2. Padhant of whole material by hand in all Taal mentioned above.
3. Recognition of the compositions such as Tehai, Layakaries etc. composed by the Examiner.
4. Practice of Hand movements with Tal.
5. Ability to demonstrate Punjabi Folk Dance.
6. Ability to play Nagma of Teen Taal on Harmonium.

## SEMESTER-I

### TABLA

#### (THEORY)

**Theory: 3 Hours**  
**Practical: 20 Minutes for each student**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Teaching work load:**  
**Theory 3 periods per week.**  
**Practical – 9 periods per week.**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

- Definitions with full explanations of the following:  
Dayan, Bayan, Laya, Avartan, Tala, Qayada, Tihai and Laggi.
- Ten Paraans of Tala.

#### SECTION-B

- Importance of tala in Music and Dance.
- Life & Contribution of the following Musicians in the field of Tabla Vadan:-  
Zakir Husain, Anindo Chatterjee, Pt Kishan Maharaj.

#### SECTION-C

1. Detail knowledge and notation of following Talas:
2. Teentaal and Tilwara
3. Origin & Development of Tabla and its present form.

#### SECTION-D

4. Detailed Study of Gharanas in tabla vaadan.
5. Role of Tabla in Gurmat Sangeet.

**SEMESTER-I****TABLA****(PRACTICAL)****Time: 20 Minutes****Marks: 50**

1. Talas Prescribed: Dadra, Teental.
2. Two Laggis in Dadra.
3. Teental: Two Qaidas with Four Paltas each, Two Mukhras, Two Tukra, Two Tihais.
4. Practice of playing the above taals with Vocal and Instrumental performance.
5. Ability to play Theka of Tilwara Taal.
6. Ability to play Nagma on harmonium in Teental.
7. Tuning of Tabla.
8. Ability to sing National Anthem with Harmonium.

**Books Recommended:**

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Misher Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Mani Mishra, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vashishath, Sangeet Karyalaya Hathras, 1994.
6. Tal Parichay Part –I to IV, Harish Chandra Srivastav, Sangeet Karyalaya, Hathras.
7. Tal Prakash, Bhagwat Saran Sharma, Sangeet Karyalaya, Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita, Chitragupta, Radha Publication, New Delhi, 1992.

**SEMESTER-I**

**COMPUTER SCIENCE  
COMPUTER FUNDAMENTAL & PC SOFTWARE  
(THEORY)**

**Time: 3 Hours  
4 Hours/week**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Introduction to computer and its uses: milestones in hardware and software. Batch oriented/Online/real time application.
2. Computer as a system: basic concepts: stored programs, functional units and their inter-relation: communication with the computer.
3. Data storage devices and media: primary storage: storage addressed, and capacity, type of memory: secondary storage; magnetic tape – data representation and R/W: magnetic disc, fixed & removable, data representation and R/W, floppy disc drives, Winchester disc drive, conventional disc drives, Data organization, Compact Disc.

**SECTION-B**

1. Input/Output devices: Key-tape/diskette devices, light pen mouse and joystick, source data automation (MICR, OMR, and OCR), screen assisted data entry; portable/hand held terminals for data collection, vision input system.
2. Printed output: Serial, line, page, printers; plotters, visual output; voice response units.

**SECTION-C**

Introduction to Windows based operating system and Desktop icons

**SECTION-D**

**MS-Office:**

Introduction to Word, Introduction to Parts of Word Window (Title Bar, Menu Bar, Tool Bar, The Ruler, Status Area), Page Setup, Creating New Documents, Saving Documents, Opening an Existing documents, insert a second document into an open document, Editing and formatting in document, Headers and Footers, Spell Checking, Printing document, Creating a Table Using the Table Menu and table formatting, Borders and Shading, Templates and Wizards, Mail Merge

**MS Power Point:**

Introduction to MS Power point, Power point elements, Templates, Wizards, Views, Exploring Power Point Menu, Working with Dialog Boxes, Adding Text, Adding Title, Moving Text Area, Resizing Text Boxes, Adding Art, Starting a New Slide, Starting Slide Show, Saving presentation; Printing Slides, Views (View slide sorter view, notes view, outlines view) Formatting and enhancing text formatting, Creating Graphs (Displaying slide show and adding multi-media)

**SEMESTER-I****COMPUTER SCIENCE****(PRACTICAL)****Marks: 25****2 Hours/week****Practical based on Computer Fundamental & PC Software**

Windows, MS Word, Power Point,

**References:**

1. R.K. Taxali: Introduction to Software Packages, GalgotiaPublicaions.
2. MS–Office Compiled by SYBIX
3. MS–Office BPB Publications.
4. Introduction to Computer by P.K. Sinha
5. Windows Based Computer Courses by Gurvinder Singh & Rachpal Singh, Kalyani Publishers.

## SEMESTER-I

### INFORMATION TECHNOLOGY (VOCATIONAL)

#### COMPUTER FUNDAMENTAL & OFFICE AUTOMATION (THEORY)

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

##### **Fundamentals:**

Basic Block Diagram of the Computer System, Basic Elements of the Computer System (CPU, Keyboard, Mouse, Monitor), Generations of computers, Computer Number System BIT, Byte, binary, Decimal, Hexadecimal, Octal system, Conversion from one System to another, Binary Arithmetic Subtraction, Multiplication), Input Devices (Keyboard, Mouse Joystick, light pen, and trackball), Output Devices (Monitors or Printers), Memories (Primary and Secondary), RAM, PROM, EPROM, EEROM), cache memory, Storage Devices (Floppy disk, hard Disk, compact Disk, tape)

Computer Languages: machine Language, assembly language, High level languages, operating System, Batch Processing multi-programming, time sharing.

#### SECTION-B

**Windows:** Windows concepts features, Windows structure, desktop, taskbar, start menu, My computer, recycle bin, Windows Accessories.

**Word Processing:** Introduction to Word, Introduction to Parts of Word Window (Title Bar, Menu Bar, Tool Bar, The Ruler, Status Area), Page Setup, Creating New Documents, Saving Documents, Opening an Existing documents, insert a second document into an open document, Editing and formatting in document, Headers and Footers, Spell Checking, Printing document, Using the Thesaurus, Using Auto Correct, Auto Complete and Auto Text, Creating a Table Using the Table Menu and table formatting, Borders and Shading, Templates and Wizards, Mail Merge, Drawing Objects, Using Frames to position Objects, Handling Graphics, Tables and Charts.

#### SECTION-C

**Worksheets: MS-Excel:** Creating worksheets, entering data into worksheet, saving & quitting worksheet, opening and moving around in an existing worksheet, Toolbars and menus, Working with single and multiple workbook, Working with formulae, formatting of worksheet.

#### SECTION-D

**MS Power Point:** Introduction, elements, Text, Title, Sliders Formatting and enhancing text formatting, Views, Creating Graphs, Displaying slide show and adding multi-media.

**SEMESTER-I**

**INFORMATION TECHNOLOGY (VOCATIONAL)**

**COMPUTER FUNDAMENTAL & OFFICE AUTOMATION  
(PRACTICAL)**

1. On the basis of Computer Fundamental & Office Automation: **Marks: 25**

**Books Recommended:-**

1. M.S. Office, The Complete Reference by Keitel, McGraw Hill.
2. Office XP the Complete Reference by Kelly, Edition 2001, McGraw Hill.
3. B.RAM, "Computer Fundamental" First Edition, Dhanpat Rai & Sons Pub.
4. Peter Norton, "Introduction to Computers" 6th Edition 2004, McGraw Hill, HTML, DHTML  
JavaScript, "GyanBayrose" 3rd Edition BPB.

**SEMESTER-I**  
**COMPUTER MAINTENANCE (VOCATIONAL)**

**PRINCIPLE OF ELECTRONICS**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Introduction to Electronics:** Voltage Source, Current Source, Electronic Components, CRO, Digital Multimeter.

**Network Theorems:** Thevenin's Theorem, Maximum Power Transfer Theorem, Norton's Theorem, Power Supplies.

**SECTION-B**

**Semiconductor Devices:** P-N Junction, Zener Diode, LEDs, Photodiodes, Transistors, Field Effect Transistor, Metal Oxide Field Effect Transistor.

**SECTION-C**

**Digital Fundamentals:** Number System, Logic Gates, Boolean algebra.

**SECTION-D**

**Digital Logic Circuits:** Multiplexers, Demultiplexers, Encoders, Decoders, Flip-Flops, Counters, Shift Registers, Semiconductor Memories.

**References:**

1. Basic Electronics and Linear Circuits: NN Bhargava (TTTI Chandigarh) –Tata McGraw Hill, 2004.
2. Principles of Electronics V.K. Mehta–S. Chand–2004
3. Digital Computers Electronics: Malvino–Tata McGraw Hill 3rd Edition, 1995.

**SEMESTER-I****COMPUTER MAINTENANCE (VOCATIONAL)****(PRACTICAL)****List of Practical Based on Principle of Electronics****Marks: 25**

1. To Study the Characteristics of P–n junction diodes in forward bias.
2. To Study the Characteristics of P–n junction diodes in reverse bias.
3. To Study the Characteristics of transistor in common base mode.
4. To Study the Characteristics of zener diode.
5. To verify Thevenin's Theorem.
6. To verify maximum power transfer theorem.
7. To verify the truth tables of various logic gates.
8. To verify the truth tables of universal gates and construction of different gates from them.
9. To verify the truth tables of SR and JK flip–flops.

## SEMESTER-I

### COMPUTER APPLICATIONS (VOCATIONAL)

### COMPUTER FUNDAMENTALS & PC SOFTWARE (THEORY)

**Time: 3 Hours**  
**4 Hours /week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

#### Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

#### 1. Elements of a Computer System:

- 1.1 What is a Computer?
- 1.2 Evolution of Computers, their classification and limitations, Computer organization.
- 1.3 Uses of Computers in modern society (e.g. Weather forecasting, Census, Oil Exploration, Speech Recognition, Banking, Publishing, Accounting, Research, etc.)
- 1.4 Characteristics of Desktop
- 1.5 Characteristics of Portables/Laptops
- 1.6 Introduction to Hardware, Software, Operating System, Translators.

#### 2. Input Output Devices:

- 2.1 Input Devices and Functions
  - \* Keyboard and teletypewriter terminals
  - \* Joystick
  - \* Mouse
  - \* Light Pen
  - \* Magnetic Tapes and cassettes
  - \* Magnetic Disks
  - \* Floppy and Winchester Disks
  - \* Optical Marks Reader (OMR)
  - \* Optical Character Reader (OCR)
  - \* Magnetic Ink Character Reader (MICR)
  - \* Punched Cards

#### 2.2 Output Devices and Functions:

- a) Visual Display UNIT (Monitor), Pixel & resolution, Monitors Size, Monochrome & Color, VGA & SVGA
- b) Plotters
- c) Printers
- d) CTD

#### 3. H/W Organization of a Desktop Computer:

- 3.1 Introduction to hardware components
- 3.2 C.P.U. Control units, ALU, Registers
- 3.3 Instruction Characteristic and Instruction Cycle
- 3.4 Memory
  - a) RAM – Dynamic RAM, Static RAM
  - b) ROM–PROM, EPROM, EEPROM
  - c) Cache, Virtual, Extended and Expanded Memories

### 3.5 Secondary Memory (Storage devices)

- a) Floppy Disk
- b) Hard Disk
- c) DAT
- d) Video or Optical Disk (CD ROM)
- e) CTD

### 3.6 Moderns and its Types

## SECTION-B

### 4. Basics of Windows Vista:

- a) The Desktop, the Taskbar
- b) Start Menu
- c) Program, Document, Settings, Find, Help, Run, Shutdown
- d) About the My Computer Icon
- e) About the networking neighborhood Icon
- f) Recycle bin
- g) Folders–Creation and Definition
- h) New Rules for File Names
- i) Windows Explorer (Definition)
- j) Shortcut Icons with creation and definition

## SECTION-C

### MS–Word:

Introduction to Word, Introduction to Parts of Word Window (Title Bar, Menu Bar, Tool Bar, The Ruler, Status Area), Page Setup, Creating New Documents, Saving Documents, Opening an Existing documents, insert a second document into an open document, Editing and formatting in document, Headers and Footers, Spell Checking, Printing document, Creating a Table Using the Table Menu and table formatting, Borders and Shading, Templates and Wizards, Mail Merge Drawing Objects, Using Frames to position Objects.

## SECTION-D

### MS Power Point:

Introduction to MS Power point, Power point elements, Templates, Wizards, Views, Exploring Power Point Menu, Working with Dialog Boxes, Adding Text, Adding Title, Moving Text Area, Resizing Text Boxes, Adding Art, Starting a New Slide, Starting Slide Show, Saving presentation; Printing Slides, Views (View slide sorter view, notes view, outlines view) Formatting and enhancing text formatting, Creating Graphs (Displaying slide show and adding multi–media)

### Text Books:

1. MS–Office Compiled by SYBIX
2. MS–Office BPB Publications.
3. Introduction to Computer by P.K. Sinha

**SEMESTER-I**

**COMPUTER APPLICATIONS (VOCATIONAL)**

**COMPUTER FUNDAMENTALS & PC SOFTWARE**

**(PRACTICAL)**

**2 Hours/week**

**Marks: 25**

**SEMESTER-I****INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)****INTRODUCTION TO PROGRAMMING (C)  
(THEORY)****Time: 3 Hours****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Introduction to Software:** Definition of Software, Characteristics, Software Development Tools, Software Development life cycle

**Data Representation:** Flowcharts, Problem Analysis, Decision Trees/Tables, Pseudo code and algorithms.

**SECTION-B**

**Fundamentals:** Character set, Identifiers and Key Words, Data types, Constants, Variables, Expressions, Statements, Symbolic Constants. Operations and Expressions: Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, Library functions.

**SECTION-C**

**Data Input and Output:** Single character Input, single character output, entering input data, more about scanf functions, writing output data, more about printf functions, gets and puts functions, interactive programming. Control Statements: Preliminaries, While, Do-while and for statements, Nested loops, If-else, Switch, Break – Continue statements.

**SECTION-D**

**Functions:** Brief overview, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion.

**Arrays:** Defining, processing an arrays, passing arrays to a function, multi-dimensional arrays.

**SEMESTER-I**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**(PRACTICAL)**

Basic C Programming

**Marks: 25**

Operational Knowledge of C Programming

**Note: Oral and written test will be conducted by External examiner with the help of internal examiner.**

**SEMESTER-I****AUTOMOBILE MAINTENANCE (VOCATIONAL)  
(THEORY)****Time: 3 Hours****Periods per week: Theory: 6****Theory Marks: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****General Introduction to the Automobile:**

Introduction, Light commercial vehicle, Medium & Heavy Commercial vehicle, Main parts of Automobiles, Body, Chassis, Main parts of Chassis, classification of Chassis with respect to fitting of Engines, Wheel Base, Front overhang, Gear overhang, Wheel Track. Long Wheel-base chassis.

**SECTION-B****Shop Safety and Tools:**

Safety in the shop. Safety rules. Measuring systems and measuring tools. Shop Hand Tools.

**SECTION-C**

**Frames:** Introduction, Types of Frame, Types of sections used in Frame, Chassis Repair. Frameless Integral frame.

**SECTION-D**

Properties of body of Vehicle, Safety standards for vehicles. Accidental Repair Special tools used for Denting.

**SEMESTER-I****AUTOMOBILE MAINTENANCE (VOCATIONAL)  
(PRACTICAL)****LAB-I****Time: 3 Hours****Marks: 40****Period Per week Practical: 6****Practical:**

1. Engine dismantling and assembling.
2. Valve Timings.
3. Ignition Timings.
4. Injection Timings.

**References:-**

1. Basic Automobile Engineering Written by CP Nakra (Punjabi Edition) Published by Dhanpat Rai and Sons, Jalandhar, Delhi.
2. Automotive Mechanics William H. Crouse. (English Edition) Donald L. Angkin Published by Tata McGraw-Hill Publishing Company Ltd., New Delhi.

## SEMESTER-I

### REFRIGERATION & AIR CONDITIONING (VOCATIONAL)

#### (THEORY)

**Time: 3 Hours**

**Periods 6 Hours/week**

**Theory Marks: 60**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

**Introduction:** Basic concepts & definition Thermodynamics, System properties State process, Cycle, pressure, density specific volume. First & Second law of Thermodynamics, Processes, Constant volume, constant pressure, isothermal & isotropic etc.

- a) **Work & Heat:** Work, power & energy Heat, sp. Heat, sensible heat Latent Heat of vapour & fusion specific Heat of gases & units of Heat.
- b) **Elementary Heat Transfer:** Conduction operation, Radiation, Thermal conductivity & phase.

#### SECTION-B

**Refrigeration:** Terminology of Refrigeration; Definition of “TON” as applied to refrigeration. Methods of Refrigeration & applications, Definitions of C.O.P.; Refrigeration effect & work Input.

**Refrigerants:** Introduction, classification of Refrigerant, properties of Important Refrigerants as (R-II, R-12, R-22, NH<sub>3</sub> etc.) Secondary, Refrigerants & brines antifreezer solutions, selection of Refrigerant for required purpose.

#### SECTION-C

**Effect of Refrigerants on Environment:** Introduction regarding Environmental friendly refrigerants.

#### SECTION-D

**Vapour Compression System:** Introduction, vapour compression cycle on PV.Ts & PH diagrams. Simple calculations on work done, C.O.P. etc.

Factors affecting the performance of vapour compression system, cycle description, C.O.P. Sub cooling super Heating, Multistage cascade system. Non-idealities, effects of pressure drop & non-isotropic compression. Calculation of ref. effect, power.

**Vapour Absorption System:** Simple absorption cycle, analysis with NH<sub>3</sub>-Water or Lithium bromide, C.O.P. use of Charts, Electral use system. Comparison of Vapour Compression with Z Vapour absorption system.

**SEMESTER-I****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
(PRACTICAL: LAB-I)****Time: 3 Hours****Period Per week Practical: 6****Marks: 40****List of Experiments:**

1. To study the basic tools eg. spanners, cutting & Threading tools, bending tools etc.
2. Cutting, flattening & joining of tubes.
3. Bending of tubes of diff. sizes.
4. Soldering, brazing & pinching of tubes.
5. Cutting of G.I. & Copper tubes.

**List of Reference Books:-**

1. Ref & AC S. Domkundwar Dhanpat Rai
2. Ref & AC S.C. Arora —do—
3. A Course in P.L. Batlaney Khanna Ref. & A.C. M. Singh Khurmy Publishers Royal Pub.

**SEMESTER-I**

**ਧਰਮ ਅਧਿਐਨ**

**ਧਰਮ, ਆਦਿ ਧਰਮ ਅਤੇ ਧਰਮ ਸੰਬੰਧੀ ਆਧੁਨਿਕ ਮੁੱਦੇ**

ਸਮਾਂ 3 ਘੰਟੇ  
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100  
ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**ਸੈਕਸ਼ਨ-ਏ**

**ਧਰਮ ਦੀ ਆਮ ਜਾਣਕਾਰੀ**

1. ਧਰਮ: ਪਰਿਭਾਸ਼ਾ ਤੇ ਸਰੂਪ
2. ਧਰਮ ਤੇ ਦਰਸ਼ਨ: ਸਮਾਨਤਾ ਅਤੇ ਅੰਤਰ
3. ਧਰਮ ਤੇ ਨੈਤਿਕਤਾ: ਸਮਾਨਤਾ ਅਤੇ ਅੰਤਰ

**ਸੈਕਸ਼ਨ-ਬੀ**

**ਆਦਿ ਧਰਮ**

1. ਪ੍ਰਾਚੀਨ ਮਨੁੱਖ ਅਤੇ ਉਸਦਾ ਧਰਮ: ਕੁਦਰਤ ਦੀ ਕਰੋਧੀ ਤੇ ਧਰਮ ਦਾ ਆਰੰਭ
2. ਮੁਢਲੇ ਧਾਰਮਿਕ ਵਿਸ਼ਵਾਸ: ਐਨੀਮਿਜ਼ਮ, ਮਾਨਾ, ਟੋਟਮ, ਫਿਟਿਸ਼
3. ਧਾਰਮਿਕ ਪ੍ਰਗਟਾਵੇ: ਜਾਦੂ, ਟੈਬੂ, ਮਿਥ

**ਸੈਕਸ਼ਨ-ਸੀ**

**ਧਾਰਮਿਕ ਸੰਸਕਾਰ**

1. ਧਾਰਮਿਕ ਸੰਸਕਾਰ: ਅਰਥ ਅਤੇ ਸਰੂਪ
2. ਜਨਮ, ਧਰਮ-ਪ੍ਰਵੇਸ਼, ਵਿਆਹ ਅਤੇ ਮ੍ਰਿਤਕ ਸੰਸਕਾਰ
3. ਧਾਰਮਿਕ ਤਿਉਹਾਰਾਂ ਦਾ ਸਮਾਜਿਕ-ਧਾਰਮਿਕ ਮਹੱਤਵ

**ਸੈਕਸ਼ਨ-ਡੀ**

**ਧਰਮ ਸੰਬੰਧੀ ਆਧੁਨਿਕ ਮੁੱਦੇ**

1. ਧਰਮ ਅਤੇ ਸਮਾਜ ਦਾ ਸੰਬੰਧ
2. ਮਾਨਵਵਾਦ
3. ਵਿਸ਼ਵ-ਸ਼ਾਂਤੀ ਅਤੇ ਸਹਿਹੋਂਦ

### ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:

#### English:

1. Byron, Jevous Frank, *The History of Religion*, Orient, Delhi, 1985.
2. Harbans Singh & L.M.Joshi, *An Introduction to Indian Religions*, Punjabi University, Patiala, 1996.
3. James, E.O., *Begining of Religion*, Arrow Books, London. 1950.
4. Redin Paul, *Primitive Religion*, Dover Publication, New York, 1957.

#### Punjabi:

1. ਐਫ.ਮੈਕਸਮੂਲਰ, *ਧਰਮ ਦੀ ਉਤਪਤੀ ਅਤੇ ਵਿਕਾਸ*, ਅਨੁ. ਤਾਰਨ ਸਿੰਘ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2002.
2. ਸਿੱਧੂ, ਗੁਰਮੀਤ ਸਿੰਘ, *ਧਰਮ : ਆਧੁਨਿਕ ਅਤੇ ਉਤਰਆਧੁਨਿਕ ਸਿਧਾਂਤ*, ਗੁਰਗਿਆਨ ਬੁਕਸ, ਪਟਿਆਲਾ, 2014.
3. ਦਰਸ਼ਨ ਸਿੰਘ, *ਧਰਮ ਅਧਿਐਨ ਅਤੇ ਸਿੱਖ ਅਧਿਐਨ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2008.
4. ਮਨਜੀਤ ਸਿੰਘ, *ਧਰਮ ਦਰਸ਼ਨ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2007.
5. ਵਜ਼ੀਰ ਸਿੰਘ, *ਧਰਮ ਦਾ ਦਾਰਸ਼ਨਿਕ ਪੱਖ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1999.
6. ਡਾ.ਹਰਪਾਲ ਸਿੰਘ ਪੰਨੂ, *ਭਾਰਤ ਦੇ ਪੁਰਾਤਨ ਧਰਮ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

#### Hindi:

1. ਸਿਨਹਾ, ਹਰੇਂਦ੍ਰ ਪ੍ਰਸਾਦ, *ਧਰਮ ਦਰਸ਼ਨ ਕੀ ਰੂਪ ਰੇਖਾ*, ਮੋਤੀਲਾਲ ਬਨਾਰਸੀ ਦਾਸ, ਦਿੱਲੀ, 1965.

**SEMESTER-I****PHILOSOPHY****ELEMENTARY PHILOSOPHY****Time: 3 Hours****Max. Marks: 100****Lectures to be delivered: 6 per week****Pass Marks 35%****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. An Introduction to Philosophy: Definition, Meaning, Scope and Importance
2. Introduction to the Branches of Philosophy: Metaphysics, Epistemology, Aesthetics and Ethics.
3. Relation of Philosophy with Religion.

**SECTION-B**

1. Human Rights: Definition, Philosophical Perspectives and Scope
2. Social Problems: Casteism and Gender Discrimination.
3. World Peace: Problems and Solution.

**SECTION-C**

1. Guru Nanak: Sangat, Pangat and Sarbat da Bhala.
2. Vivekanand: Humanism.
3. M.K. Gandhi: Ahimsa and Satyagrah.

**SECTION-D**

1. Culture: Definition and Components
2. Civilization: Definition and Components.
3. Culture and Civilization: Relation and Differences and Tolerance Understanding

### Recommended Readings:-

#### English Books

1. Anand, Amaladass, *Introduction to Philosophy*, Satya Nilayam Publication, Chennai, 2001.
2. Chandra., U., *Human Rights*, Allahabad Law Agency, Allahabad. 2000.
3. Jacques, Martain, *An Introduction to Philosophy*, New York: Sheed & ward, London, 1962.
4. Lal, B.K., *Contemporary Indian Philosophy*, Motilal Banarsidas, Delhi, 1978.
5. Mackenzie, J.S., *Outlines of Social Philosophy*, Allen and Union, London, 1963.
6. Narvane, V.S., *Modern Indian Thought: A Philosophical Survey*, Asia, Bombay, 1967.
7. Robert and Beck, *Handbook of Social Philosophy*, 1969.
8. Teja Singh, *Sikhism; Its Ideals and Institutions*, Khalsa Brothers, Amritsar, 1970.
9. Titus, H.H., *Living Issues in Philosophy*, Eurasia, New Delhi, 1968.
10. Wingate, Alan, *Human Rights, Comment and Interpretation*, UNESCO, 1949.

#### Punjabi Books:-

1. ਸਹਿਰਾਈ, ਪਿਆਰਾ ਸਿੰਘ (ਸੰਪਾ.), *ਸਮਾਜਵਾਦ ਤੇ ਮਨੁੱਖੀ ਅਧਿਕਾਰ*, ਨਵਯੁੱਗ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ।
2. ਖਲਿਆਬਿਚ.ਆਈ, *ਦਰਸ਼ਨ ਦੀ ਇਤਿਹਾਸ ਰੇਖਾ*, ਨਵਯੁੱਗ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ।
3. ਗੁਰਜੀਤ ਸਿੰਘ, *ਸਭਿਆਚਾਰ ਦਾ ਫਲਸਫਾ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
4. ਜੋਸ਼ੀ, ਜੀਤ ਸਿੰਘ, *ਸਭਿਆਚਾਰ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ*, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
5. ਵਜ਼ੀਰ ਸਿੰਘ, *ਫਲਸਫਾ ਤੇ ਸਿੱਖ ਫਲਸਫਾ*, ਮਦਾਨ ਪਬਲਿਸ਼ਰਜ਼, ਪਟਿਆਲਾ, 1980.

#### Hindi Books:-

1. ਗੋਤਮ, ਐਸ.ਪੀ. (ਡਾ.), *ਸਮਾਜ ਦਰਸ਼ਨ*, ਹਰਿਆਣਾ ਸਾਹਿਤ, ਅਕਾਦਮੀ, ਪੰਚਕੁਲਾ।
2. ਸਿਨਹਾ, ਹਿੰਮਤ ਸਿੰਘ (ਡਾ.), *ਸੰਸਕ੍ਰਿਤ ਦਰਸ਼ਨ*, ਹਰਿਆਣਾ ਸਾਹਿਤ ਅਕਾਦਮੀ, ਪੰਚਕੁਲਾ।

**ZOOLOGY**

**SEMESTER-I**

Paper	Maximum Marks		Hours of Teaching	
	Theory Marks	Practical Marks	Theory	Practical
ZOO-IA (Cell Biology)	35	—	3 Hrs	—
ZOO-IB (Biodiversity-I)	35	—	3 Hrs	—
PRACTICAL-I (RELATED TO ZOO-IA and ZOO-IB)	—	30	—	4½ Hrs

**SEMESTER-I****ZOOLOGY****ZOO-IA: CELL BIOLOGY  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Methods in Cell Biology.

- (a) Principles of light and phase contrast microscopy
- (b) Electron microscopy (TEM and SEM)
- (c) Fixation and fixatives
- (d) Staining techniques.

**SECTION-B**

Organization of Cell: Extra nuclear and nuclear, ultrastructure and functions of cell organelles

- (a) Plasma Membrane: Structure, osmosis, active and passive transport, endocytosis and exocytosis.
- (b) Endoplasmic reticulum: Structure, types and associated enzymes.
- (c) Mitochondria: Structure, mitochondrial enzymes and role of mitochondria in respiration and mitochondrial DNA.

**SECTION-C**

Organization of Cell:

- (a) Golgi complex: Structure and functions.
- (b) Ribosomes: Types of ribosomes, their structure and functions.
- (c) Lysosomes: Polymorphism and their function.
- (d) Centrosome: Structure and functions.

**SECTION-D**

Nucleus: Structure and functions of nuclear membrane, nucleolus and chromosomes.

An elementary idea of cell transformation in cancer.

An elementary idea of cellular basis of immunity.

**Suggested Readings:-**

1. Alberts, B., Bray, D., Lewis, J., Raff, M. Roberts, K., Watson J.D.(1998), Molecular Biology of the Cell, Garland Publ. Inc., New York.
2. Chandra Roy, S and DE Kumar, K. (2001), Cell Biology, New Central Book Agency (P) Ltd. Kolkata.
3. Cooper, G. M. (2004), The cell, A Molecular Approach, ASM press, Washington, D. C.
4. De Robertis, E.D.P. De Robertis, E.M.F.(1995) Cell Biology and Molecular Biology (Eighth Edition), W.B. Saunders Co., Philadelphia.
5. Karp, G. (1984). Cell Biology (4<sup>th</sup> ed), McGraw Hill, New York.
6. Pawar, C.B (1999), Cell Biology, Himalaya Publishing House, Bombay.

## SEMESTER-I

### ZOOLOGY

#### ZOO-IB: BIODIVERSITY-I (PROTOZOA TO ANNELIDA) (THEORY)

Max. Time: 3 Hrs.

Max Marks: 35

#### Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### Detailed Type study of the following animals

##### SECTION-A

Protozoa: *Amoeba proteus*,  
*Paramecium caudatum* (with special reference to Kappa particles in *P. aurelia*)  
*Plasmodium vivax*. Introduction to Parasitic Protozoans.

##### SECTION-B

Parazoa (Porifera): *Sycon*,  
Cnidaria (Coelentrata): *Obelia*

##### SECTION-C

Platyhelminthes: *Fasciola hepatica*,  
*Taenia solium*  
Larvae of *Fasciola hepatica* and *Taenia solium*

##### SECTION-D

Aschelminthes: *Ascaris*, Parasitic adaptations in Helminthes  
Annelida: *Pheretima posthuma* (Earthworm)

#### Suggested Readings:-

1. Barnes, R.D. (1999), Invertebrate Zoology. W.B. Saunder, Philadelphia.
2. Dhami, P.S. & Dhami, J. K(2001), Invertebrates, R. Chand & Co., New Delhi.
3. Barth, R. H. and Broshears, R. E (1982), The Invertebrate world. Holt Saunder, Japan.
4. Brusca, R. C. and Brusca, G. J. (2003), Invertebrates (2<sup>nd</sup> ed). Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts.
5. Engemann, J. G. and Hegner, R. W. (1981), Invertebrate Zoology (3rd ed.) Macmillan, New York.
6. Gardiner, M. S. (1972), The Biology of Invertebrates, McGraw Hill, New York.
7. Meglitsch, P. A. and Schran, F. R. (1991), Invertebrate Zoology (3<sup>rd</sup> ed). Oxford University Press, New York.
8. Pechenik, A. Jan. (2000), Biology of the invertebrates, (4<sup>th</sup> ed), McGraw Hill Book Co. Singapore.

## SEMESTER-I

### ZOOLOGY

#### PRACTICAL-I (RELATED TO ZOO-IA and ZOO-IB)

Time: 3 Hrs.

Marks: 30

#### Important Note for Practical:-

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines (D.O.No. F. 14-6/2014(CPP-II) dated 01-08-2014) the dissections should not be conducted. The guidelines on this issue are available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)

#### I. Classification up to orders with ecological notes and economic importance (if any) of the following animals (Through Specimens or slides):

**A. Protozoa.** *Amoeba*, *Euglena*, *Trypanosoma*, *Noctiluca*, *Eimeria*, *Monocystis*, *Paramecium*, *Opalina*, *Vorticella*, *Balantidium*, *Nyctotherus* and *Polystomella*.

**B. Parazoa.** *Sycon*, *Grantia*, *Euplectella*, *Hyalonema*, *Spongilla*, *Euspongia*.

**C. Cnidaria.** *Porpita*, *Velella*, *Physalia*, *Aurelia*, *Rhizostoma*, *Metridium*, *Millipora*, *Alcyonium*, *Tubipora*, *Zoanthus*, *Madrepora*, *Favia*, *Fungia* and *Astrangia*.

*Hydra* (W.M.), *Hydra* with buds, *Obelia* (colony and medusa), *Sertularia*, *Plumularia*, *Tubularia*, *Bougainvillea* and *Aurelia*

#### D. Platyhelminthes.

*Dugesia*, *Fasciola*, *Taenia*, *Echinococcus*.

Miracidium, Sporocyst, Redia, Cercaria of *Fasciola*, scolex and proglottids of *Taenia* (mature and gravid).

**E. Aschelminthes.** *Ascaris* (male and female), *Trichinella*, *Ancylostoma*.

**F. Annelida.** *Pheretima*, *Nereis*, *Heteronereis*, *Polynoe*, *Eunice*, *Aphrodite*, *Chaetopterus*, *Arenicola*, *Tubifex* and *Pontobdela*

**2. Study of the following permanent stained preparations:**

- A. L.S. and T.S. *Sycon*, gemmules, spicules and spongin fibers of a sponge.
- B. T.S. *Hydra* (Testis and ovary region)
- C. T.S. *Fasciola* (Different regions)
- D. T.S. *Ascaris* (Male and Female)
- E. T.S. *Pheretima* (pharyngeal and typhlosolar regions), Setae, septal nephridia, spermathecae and ovary of *Pheretima* (Earthworm).

**3. Preparation of the following slides:**

Temporary permanent preparation of freshwater Protozoan culture.

4. **Demonstration** of digestive, reproductive and nervous systems of earthworm with the help of charts/videos/models.

**5. Cell Biology:**

- A. Paper chromatography.
- B. Thin layers chromatography
- C. Gel electrophoresis through photographs or through research laboratories
- D. Familiarity with TEM & SEM.
- E. Study of different ultra structures of cell organelles through photographs.

**6. Visit to a vermi-composting unit and submission of report.**

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of practical Examination:-**

1. Identify and classify the specimens upto order. Write a note on their habit, habitat, special features and economic importance. 6
2. Identify the slides/micrographs and give two reasons for identification. 6
3. Make a temporary mount of protozoa. 2
4. Draw a well labelled sketch of the given system of the organism and explain to the examiner. 5
5. Write down the theory and procedure of gel electrophoresis/ paper chromatography/thin layer chromatography/ SEM & TEM. 2
6. Report 5
7. Viva-voce & Practical file. 4

**SEMESTER-I  
MICROBIOLOGY**

**FUNDAMENTALS OF MICROBIOLOGY  
(THEORY)**

**Time: 3hrs**

**Max. Marks: 75**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- 1. Introduction and Scope of Microbiology:** Discovery of microorganisms, history of microbiology, controversy over spontaneous origin or microorganisms, discovery of anaerobic life, germ theory of fermentation as life without oxygen, germ theory of disease.
- 2. Characterization and Identification of Microorganisms:** Place of microorganisms in living world, Hackel's and Whittaker's system of classification, prokaryotic and eukaryotic cells, characteristics of main groups of microorganisms.

**SECTION-B**

- 3. Methods in Microbiology :** Bright field microscopy and its applications, Methods of sterilization, preparation of a culture media, pure culture concept, staining techniques of bacteria such as simple, negative and differential methods.
- 4. Structure of Bacteria:** Fine structure of bacterial cell, cell wall, cell membrane, capsule, pili, flagella, ribosomes, Cytoplasmic inclusions, Bacterial movement, Endospore and physiology of endospore formation.

**SECTION-C**

- 5. Nutrition:** Nutritional requirements of microorganisms, nutritional types of bacteria, autotrophs, heterotrophs, parasites, types of culture media, differential media, and selective media enrichment media. Control of microorganisms by physical, chemical and chemotherapeutic agents.
- 6. Reproduction and Growth in Microorganisms:** Modes of cell division, growth curve of bacteria, continuous culture, synchronous growth, quantitative measurement of bacterial growth, Effect of various factors on growth of bacteria.

**SECTION-D**

- 7. Reproduction and Growth in Microorganisms:** Modes of cell division, growth curve of bacteria, continuous, culture, synchronous growth, quantitative measurement of bacterial growth effect of various factors on growth of bacteria, DNA as genetic material.
- 8. Clinical Microbiology:** Epidemiology reservoirs and modes of transmission of infectious diseases. Pathogenesis, diagnosis and treatment of common bacterial and viral diseases in humans.

**Books Recommended:-**

1. Pelczar, M.I., Chan, E.C.S. and Krieg, N.R. 1993, Microbiology. Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Stanier, R.Y., Ingraham, J.L., Wheelis, M.L. and Painter, P.R. 1986, General Microbiology, MacMillan Education Ltd. Publisher.
3. Powar, C.B. and Dagniwala, H.F. 1992, General Microbiology, Volume I and II, Himalaya Publishing House, Delhi.
4. Sharma, P.D. 1997, Microbiology, Rastogi Publications, Meerut.

**SEMESTER-I****MICROBIOLOGY****(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. To study the essentials of a Microbiology laboratory.
2. To study various parts of a laboratory microscope.
3. To study various sterilization techniques.
4. To prepare the cultures media for the cultivation of various micro-organisms.
5. To study various laboratory techniques for the cultivation and isolation of pure cultures of microorganisms.
6. To perform the simple staining of bacterial cell.
7. To perform the differential staining of bacterial cell.
8. To study the typical growth curve of bacteria.

**SEMESTER-I****INDUSTRIAL MICROBIOLOGY (VOCATIONAL)****INTRODUCTION TO MICROBIOLOGY  
(THEORY)****Time: 3hrs****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Introduction and scope of microbiology: Historical background of Microbiology (In brief). Difference between prokaryotic and eukaryotic microorganisms.
2. Methods in Microbiology. Bright field microscopy and its application in Microbiology, Methods of sterilization, concept of media and its preparation i.e. broth, solid and semisolid, Staining of bacteria Simple and Gram's staining to differentiate G(+) and (G-) bacteria. Isolation of pure cultures using techniques like pour plating, streaking, spreading and serial dilution. Maintenance and preservation of cultures and culture collections.

**SECTION-B**

3. Morphology and basic structure of bacteria, Fungi and Virus. Life cycle of bacteria, yeast, fungi and virus.
4. Reproduction and growth in microorganisms, Mode of cell division, Growth Curve of bacteria, continuous and synchronous culture, Quantitative measurement of bacterial growth, Effect of various factors on growth of bacteria. Control of microorganisms by physical methods.

**SECTION-C**

5. Basic concepts of microbial genetics (In brief). Structure of DNA, RNA and protein, replication, transcription and translation. Concept of gene and mutations.

**SECTION-D**

6. Clinical microbiology: Epidemiology, reservoirs and mode of transmission of infectious diseases. Pathogenesis, diagnosis and treatment of common bacterial and viral diseases in man.

**Books Recommended:-**

1. Pelczar, M.I., Cham, E.C.S. and Krieg, N.R. 1993, Microbiology. Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Stanier, R.Y., Ingraham, J.L., Wheelis, M.L. and Painter, P.R. 1986, General Microbiology, MacMillan Education Ltd. Publisher.
3. Powar, C.B. and Dagniwala, H.F. 1992, General Microbiology, Volume I and II, Himalaya Publishing House, Delhi.
4. Sharma, P.D. 1997, Microbiology, Rastogi Publications, Meerut.

**SEMESTER-I****INDUSTRIAL MICROBIOLOGY (VOCATIONAL)  
(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. To study the essential of a Microbiology laboratory.
2. To study various part of a laboratory microscope.
3. To study various sterilization techniques.
4. To prepare the culture media for the cultivation of various micro-organisms.
5. To study various laboratory techniques for the cultivation and isolation of pure culture of micro-organisms.
6. To perform simple staining of bacterial cell.
7. To perform the differential staining of bacterial cell.

**SEMESTER-I****MICROBIAL & FOOD TECHNOLOGY****FUNDAMENTALS OF MICROBIOLOGY  
(THEORY)****Time: 3hrs****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Introduction and Scope of Microbiology:** Discovery of Microorganism, history of microbiology, controversy over spontaneous origin or micro-organism, discovery of anaerobic life, germ theory of fermentation, fermentation as life without oxygen, germ theory of disease. Differences between prokaryotic and Eukaryotic cells, characteristics of main groups of microorganism (Bacteria, fungi, yeast, Virus).

**SECTION-B**

**Methods in Microbiology:** Bright field microscopy and its application in Microbiology, Methods of sterilization, preparation of a culture media, pure culture concept, staining of bacteria.

**Structure of Bacteria:** Cell wall, cell members, capsule, pili, flagella, bacterial movement, endospore.

**SECTION-C**

**Nutrition:** Nutritional requirements of Microorganisms, nutritional types of bacteria, autotrophs, heterotrophs, parasites, types of culture media, differential media, and selective media, enriched media.

**Reproduction and Growth in Microorganisms:** Modes of cell division, growth curve of bacteria, continuous culture, synchronous growth, quantitative measurement of bacterial growth, effect of various factors on growth of bacteria.

**SECTION-D**

Mutations and their chemical basis, DNA as genetic material, recombination in prokaryotes by transformation and conjugation transduction, bacterial plasmids.

**Control of Micro-organisms:** Control of micro-organisms by physical, chemical and chemotherapeutic agents.

**Books Recommended:-**

1. Pelczar, M.I., Chan, E.C.S. and Krieg, N.R. 1993. Microbiology. Tata McGraw Hill Publishing Col. Ltd., New Delhi.
2. Stanier, R.Y., Ingraham, J.L., Wheels, M.L. and Painter, P.R. 1986. General Microbiology, MacMillan Education Ltd. Publisher.
3. Power, C.B. and Dagniwala, H.F. 1992, General Microbiology, Volume I and II. Himalaya Publishing House, Delhi.
4. Sharma, P.D. 1997. Microbiology, Rastogi Publications, Meerut.

**SEMESTER-I****MICROBIAL & FOOD TECHNOLOGY****FUNDAMENTAL AND FOOD MICROBIOLOGY  
(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. To study the essential of a Microbiology laboratory.
2. To study various part of a laboratory microscope.
3. To study various sterilization techniques.
4. To prepare the culture media for the cultivation of various micro-organisms.
5. To study various laboratory techniques for the cultivation and isolation of pure culture of micro-organisms.
6. To perform simple staining of bacterial cell.
7. To perform the differential staining of bacterial cell.

## SEMESTER-I

### BOTANY

#### PAPER-I A: DIVERSITY OF MICROBES (THEORY)

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week**

**Max. Marks: 35**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

**Algae:** General characters, classification and economic importance, important features and life history of Chlorophyceae–Volvox, Oedogonium, Coleochaete, Xanthophyceae–Vaucheria; Phaeophyceae–Ectocarpus, Sargassum; Rhodophyceae–Polysiphonia.

#### SECTION-B

**Viruses, Bacteria,** General account of viruses and mycoplasma; bacteria–structure, nutrition, reproduction and economic importance; general account cyanobacteria. General characters.

#### SECTION-C

**Classification and Economic Importance of Fungi.** Important features and life history of Mastigomycotina–Pythium, Phytophthora; Zygomycotina–Mucor, Ascomycotina–accharomyces, Eurotium, Chaetomium. Peziza;

#### SECTION-D

**Basidiomycotina**–Puccinia, Agaricus;  
Deuteromycotina–Cercospora. Colletotrichum  
General account of Lichens

#### **Suggested Readings:-**

1. Alexopoulos, C.J., Mims, C.W. and Blackwell, M. Introductory Mycology (4th Edition), Wiley - Blackwell, USA.
2. Dube, H.C., 2007, A Textbook of Fungi, Bacteria and Viruses (3rd edition), Scientific Publishers, India
3. Dube, H.C., 2012, An Introduction to Fungi (4th edition), Scientific Publishers., India.
4. James W. Brown. (2014). Principles of Microbial Diversity. ASM press, USA.
5. Ogunseitan, O. (2004). Microbial Diversity: Form and function in Prokaryotes. Wiley Publishers, USA.
6. Sharma, O.P., 2004, Text Book of Thallophytes. McGraw Hill Publishing Co., India.
7. Sharma, P.D., 2004, The Fungi, (2nd Edition) Rastogi Publication, India

**SEMESTER-I**  
**BOTANY**  
**PAPER-I B: DIVERSITY OF CRYPTOGAMS**  
**(THEORY)**

**Time: 3 Hrs.**

**Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Bryophyta:** Amphibians of plants kingdom displaying alternation of generations; structure, reproduction

**SECTION-B**

**Classification of Hepaticopsida** (e.g. Marchantia); **Anthocerotopsida** (e.g. Anthoceros), **Bryopsida** (e.g. Funaria).

**SECTION-C**

**Pteridophyta:** The first vascular plant; important characteristics of Psilopsida, Lycopsida, Sphenopsida and Pteropsida; structure, reproduction in Rhynia,

**SECTION-D**

Lycopodium, Selaginella. Equisetum, Pteris and Marsilea.

**Suggested Readings:-**

1. Goffinet B. (2008). Bryophyte Biology. Cambridge University Press, UK.
2. Sambamurty, S.S. (2005). A Textbook of Bryophytes, Pteridophytes, Gymnosperms and
3. Paleobotany. I K International Publishing House Pvt Ltd., India
4. Sharma, O.P. (2014). Bryophyta. Mc Graw Hill Education Pvt Ltd., India.

**SEMESTER-I****BOTANY PRACTICALS-I (BASED ON PAPER-IA AND IB)****Practical Hours: 4½ Hours/week****Marks: 30****Suggested Laboratory Exercises:-**

Teachers may select plants/material available in their locality/institution

1. Gram staining of bacteria.
2. Observation of disease symptoms in hosts infected by fungi, viruses and mycoplasma Section cutting of diseased material and identification of the pathogens as per the theory syllabus.
3. Study of the genera included under algae and fungi.
4. Study of morphology, reproductive structures and anatomy of the examples cited in theory under Bryophyta and Pteridophyta.

**Suggested Readings:** Lee, R.E. (2008). Phycology, Fourth Edition, Cambridge University Press, USA. Agrios, G.N. (1997). Plant Pathology, 4th edition, Academic Press, U.K.

**SEMESTER-I****BIOINFORMATICS (VOCATIONAL)****FUNDAMENTALS OF COMPUTERS, MOLECULAR BIOLOGY  
& rDNA TECHNOLOGY  
(THEORY)****Time: 3 Hrs.****Credit Hours: 6****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****History of Computers:** Evolution, Generation of Computers (I, II, III, IV, V)**Classification of Computers:** Notebook, Personal, Mainframe, Minicomputers, Workstation and Supercomputers)-comparison with memory, power, cost, size-then and now.**Computer Organization and Architecture:** Computer Architecture, I/O Devices, ALU, Memory chips (RAM, ROM, DRAM), Storage devices, Memory hierarchy.**MS-Word:** Introduction to parts of Window, Creating, Opening, Saving and Printing a Document, Text formatting, Page Setup, Margins, Line spacing, Page break, Header and Footers, Spell Checking, Table, Mail Merge.**MS-Power Point:** Introduction Power Point Elements, Creating, opening, saving of Power Point slide, Adding text and title, moving and resizing text, text formatting (using Bullets, font style, font size, color and effects) custom animation, slide transition, insert pictures and sound file to slide.**MS-Excel:** Introduction, format of electronic worksheet, adding data in worksheet, cell Addressing Ranges, applying and copying formula, various mathematical and statistical functions, Inserting charts.**SECTION-B****Computer Networking:** OSI reference model, Network Topologies, Router, Switch, LAN, WAN, MAN, Wireless LAN and Mobile Computing, TCP/IP protocol.**Internet:** Introduction to Internet, World Wide Web, Concepts of Domain, Concept of Web Browser, Concept of Intranet and Extranet, Computer network and security**Internet Services and Applications:** Internet Tools. Telnet, FTP, E-Mail, Chat, newsgroups,**HTML:** Introduction, common tags, creating hyper links, incorporation of images, Tables; Frames, Formatting of text with fonts.

### SECTION-C

**Introduction to Molecular Biology:** Structure and properties of Nucleic acids: (DNA, RNA), Organization of DNA in chromosome in (Prokaryotes and Eukaryotes), Heterochromatin/Euchromatin, Repetitive sequences.

**Proteins:** Amino acids and their properties; Primary, secondary, tertiary and quaternary structures.

**DNA Replication:** Mechanisms of prokaryotic and Eukaryotic DNA replication,

**Expression of the Genome:** Mechanisms of Transcription (Prokaryotes and Eukaryotes), RNA processing (Capping, Polyadenylation, splicing), Translation (The Genetic Code and Protein Synthesis).

### SECTION-D

**Gene Regulation:** Principles of gene regulation, regulation of gene expression in bacteria (Lactose operon, Tryptophan operon), regulation of gene expression in eukaryotes.

**rDNA Technology:** Restriction digestion, Ligation, Plasmid and Lambda Vectors, PCR, Cloning etc, Genetic engineering and transgenic organisms. DNA sequencing methods. Concepts of Mapping, Construction of physical maps, Genetic maps and radiation hybrid maps etc.

### Recommended Books:-

1. Norton's P. (2001). Introduction to Computing Fundamental. *McGraw Hill Education, New Delhi*.
2. Sinha P.K. (2001). Fundamental of Computers. *BPB Publication, New Delhi*.
3. Deborah S. Ray, Eric J. Ray (2002) Mastering HTML and XHTML, Sybex Inc.
4. HTML Complete, 3rd Edition (2003), Sybex Inc.
5. Kapila H. (2003). PC Computing Window Based Computer System. *Dinesh Publishers, Jalandhar*.
6. Grauer B. (2005). Exploring Microsoft Office 2003 (Volume 1). *Prentice Hall, New Jersey*.
7. Norton's P. (2001). Introduction to Computing Fundamental. *McGraw Hill Education, New Delhi*.
8. Sinha P.K. (2001). Fundamental of Computers. *BPB Publication, New Delhi*.
9. Brooker, R.J. Genetic Analysis and Principles. Addison Wisely Longman, N.Y. (2001).
10. Pevzner, J. Introduction to Bioinformatics. John Wiley and Sons, N.Y. (2003).
11. Baxevanis A.D. Bioinformatics: A practical guide to the analysis of Gene and Proteins (2nd Edition) 2001.
12. Lodish H, Berk A, Zipursky, S.L., Baltimore, D. Darnel, J. Molecular Cell Biology. W.H. Freeman and Company, USA (2000).
13. Lesk A. M. (2002). Introduction to Bioinformatics. *Oxford University Press*.
14. Krane D. E. and Raymer M. L. (2002). Fundamental Concepts of Bioinformatics. *Benjamin Cummings*.
15. Lehninger, A.L. Nelson, DL and Cox, MM (2008). Principles of Biochemistry, 5<sup>th</sup> Ed., *Worth Publishers, New York*.
16. Benjamin. E (2004). Immunology, *Willey and Liss, New York*.
17. Kubey, J and Goldby, R.A. (2003). Immunology Freeman and Co., *New York*.
18. De Roberties, E.D and De Roberties, E.M (1987). Cell and Molecular Biology, 8<sup>th</sup> Ed, *Lippincott Williams and Wilkins Publication*.

**SEMESTER-I****BIOINFORMATICS (VOCATIONAL)****(LAB IN COMPUTER FUNDAMENTALS)****(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Credit Hours: 4½****MS-WORD**

1. To create, open, close a document and toolbar operations.
2. Practical to demonstrate formatting options
3. Practical based on page setup, print a document.
4. To add headers, footer, pagebreak.
5. Table handling, Mail Merge.

**MS-POWERPOINT**

1. Concept of slide, presentation, custom animation.
2. To insert pictures and sound file to slide.  
Slide transition.

**MS-EXCEL**

1. To create, open, close worksheet.
2. To add numeric as well as character data in a cell.
3. To develop formulas, create and modify charts.

**Installation of Windows and LINUX****Basic commands of LINUX.****Basic DOS commands.****Basic Exercises on HTML.**

**SEMESTER-I**

**BIOTECHNOLOGY (VOCATIONAL)**

**MICROBIOLOGY  
(THEORY)**

**Time: 3 Hours**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Development of microscopy (optical, TEM and SEM); Pasteur's experiments disproving spontaneous generation; The concept of sterilization. Methods of Sterilization (Dry heat, wet heat, radiation, chemical and filtration etc.)

**SECTION-B**

Concept of microbial species and strains; The various forms of microorganisms-PPLOs-cocci, bacilli and spirilla; Spontaneous and induced variation arising in microbial population; Nature of the microbial cell surface. Gram positive and gram negative bacteria. Kinds of flagella. Serotypes; Prokaryotic and eukarotic microbial cells.

**SECTION-C**

Nutritional classification of microorganisms; Microbes in extreme environments–the thermophiles and alkalophiles; Pathogenic microorganisms. Defence mechanism against microorganisms; Symbiosis and antibiosis among microbial populations; N<sub>2</sub>-fixing microbes in agriculture.

**SECTION-D**

Microbial metabolism; Fermentation products; A survey of products from micro-organisms; Strain improvement by enrichment, selection and recombinant DNA methods; Production of heterologous proteins of interest in micro-organisms.

**Books Recommended:**

1. Davis, B.D. Dulbecco. R., Eisen, H.N. and Ginsberg, H.S. (1990), Microbiology: 4th Edition, Harper & Row, Publishers. Singapore.
2. Tortora, G.J., Funke, B.R. and Case, C.L. (1994), Microbiology: An Introduction: 5th Edition, The Benjamin / Cummings Publishing Company, Inc.
3. Stanier, R.Y. (1995), General Microbiology, MacMillan Press, London.
4. Pelezar, M.T. (1995), Microbiology, Tata McGraw Hill Publication, New Delhi.
5. Schlegel, H.G. (1995), General Microbiology, 7th Edition, Cambridge Univ. Press.
6. Prescott and Dunn (1999), Industrial Microbiology, 4th Edition. By S.K. Jain for CBS Publishers & Distributors.
7. Purohit, S.S. (2000), Microbiology; Fundamentals and Applications (6th Edition), Agrobios (India).
8. Postage, J. (2000), Microbes & Man, 4th Edition, Cambridge Univ. Press.
9. Tortora, G.J., Funke, B.R., 2001, Microbiology: An Introduction, Benjamin Cummings.

**SEMESTER-I****BIOTECHNOLOGY (VOCATIONAL)****MICROBIOLOGY  
(PRACTICAL)****Time: 3 Hours****Marks: 25****Microbiological Techniques**

Aseptic techniques

Cleaning of glassware

Preparation of media, cotton-plugging and sterilization

Personal hygiene-Microbes from hands, tooth-scum and other body parts.

Isolation of microorganisms from air, water and soil samples.

Dilution and pour plating. Colony purification.

Enumeration of micro-organisms. Total vs. viable counts.

Identification of isolated bacteria. Gram staining, other staining methods, metabolic characterization (e.g. IMViC test)

Growth curve of microorganisms.

Antibiotic sensitivity of microbes, use of antibiotic discs.

Testing of water quality.

One step growth of bacteriophage.

Alcoholic and mixed-acid fermentation

**Book Recommended:**

Cappucin J.G. and Sherman, N. (1992), Microbiology: A Laboratory Manual, 3rd edition, Benjamin/Cummings Publishing Company, Inc.

**SEMESTER-I**  
**EDUCATION**  
**FOUNDATIONS OF EDUCATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:** The paper setter may set each question in 2/4 parts to ensure maximum representation of the syllabus.

**SECTION-A**

1. Meaning , nature , functions & scope of Education
2. Types of Education- Formal, Informal & Non-formal

**SECTION-B**

1. Analysis of concepts of Education – Schooling, Training & Indoctrination
2. Meaning, need & importance of aims & objectives of Education

**SECTION-C**

1. Individual Vs Social, Liberal Vs Vocational aims of Education & their synthesis
2. Aims & objectives of Education as recommended by Secondary Education Commission (1952-53) and Indian Education Commission (1964-66)

**SECTION-D**

1. Aims of Education as recommended by NPE (1986)
2. Aims of Education for Modern Indian Society in the context of globalization

**Books Recommended:-**

- |                       |  |
|-----------------------|--|
| 1. Bhatia and Narang  | Philosophical & Sociological Foundations Education Doaba House, New Delhi, 1992.           |
| 2. Bhatia and Narang  | Theory & Principles of Education, Parkash Brothers, Ludhiana, 1986.                        |
| 3. Govt. of India     | Ministry Report of Secondary Education Commission (1952–53).                               |
| 4. Prasad and Chandra | Sociological Foundations of Education, Deepak KSK Publishers, Delhi, 2006.                 |
| 5. Sodhi, T.S.        | Philosophical and Sociological Foundations of Education, Bawa Publications, Patiala, 2007. |
| 6. Taneja, V.R.       | Foundation of Education, Chandigarh, Mahindra Capital, Punjab, 2006.                       |
| 7. Taneja. V.R.       | Socio-Philosophical Approach to Education, Delhi : Atlantic Publishers, 1983               |

## SEMESTER-I

### HUMAN RIGHTS

#### CONCEPTUAL UNDERSTANDING OF HUMAN RIGHTS

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:** The paper setter may set each question in 2/4 parts to ensure maximum representation of the syllabus.

#### SECTION-A

Emergence of human rights in society from ancient to the modern times.

#### SECTION-B

Basic Concepts: Individual, group, state, civil society, freedom, equality, justice, violence, counter violence.

#### SECTION-C

Universal Declaration of human rights (1948); international conventions on civil and political; rights, social, economic and cultural rights and responsibilities.

#### SECTION-D

Constitutional vision of fundamental rights, directive principles and fundamental duties.

#### **Recommended Books:-**

1. Kashyap, Subhash, Human Rights and Parliament, Metropolitan Book Co. Delhi.
2. Sinha, P.C. Global sourcebook on Human Rights Part-I, Kanishka Publishers, New Delhi.
3. Sinha, P.C., Global source book on Human Rights Part-II, Kanishka Publishers, New Delhi.
4. Singh, Nagender, Human Rights and International Conventions, S. Chand, New Delhi.
5. Sharma, N.R. Human Rights in the World, Pointer Publishers, New Delhi.
6. Desai, A.R. (ed.), (1986), Violations of Democratic Rights in India, Bombay: Popular Prakashan.
7. Dikshit, R.C., (1998), Human Rights and the Law, Universal and Indian, New Delhi: Deep and Deep.
8. Mehta, P. L. and Neena Verma, (1995), Human Rights Under the Indian Constitutions, New Delhi: Deep and Deep Publications.

**SEMESTER-I**

**DAIRY FARMING (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**General**

Advantages and constraints in dairy farming. Importance of livestock in agriculture and its relation to national economy.

**SECTION-B**

Livestock census, Milk production in Punjab, India, Per capita consumption of milk in Punjab and India as compared to some western countries.

**SECTION-C**

**Breeds**

**Important Breeds of Different Livestock Species, Their Origin, Morphological Traits and Economic Traits:**

- i) Indigenous cattle i.e. Sahiwal, Haryana, Red Sindhi.
- ii) Exotic cattle, i.e. Holstein Friesian, Jersey, Red Dane, Brownswiss, Ayrshire and Guernsey.
- iii) Buffaloes breeds, i.e. Murrah, Nilli Ravi, Surti, Mehsana.
- iv) Milch type goat breeds (both Indian and Exotic)

**SECTION-D**

**Housing**

Location of dairy farm, grouping of different farm buildings. Sanitation, drainage in cattle sheds, disinfections of sheds. Heat stress. Methods of cooling in sheds. Supply of clean and fresh water.

**(PRACTICAL)**

**Time: 3 Hours.**

**Marks: 50**

**Note:** Preparation of practical note book and weekly write-ups of daily jobs assigned is compulsory.

1. Visits to Dairy farms having machine milking, fodder harvesting, feed mixing etc., Veterinary hospitals, Milk collection centre and milk plant. Visit and working study of Milk Producers Co-operative Society.
2. External body parts of Cow and Buffalo.
3. Identification of various breeds of Cows and Buffaloes.
4. Differentiation between 'Desi' and Crossbreed Cow and their calves.

**SEMESTER-I****RSL101****RUSSIAN****PAPER-I (APPLIED GRAMMAR & COMPREHENSION)****Time Allowed: 3 Hrs.****M. M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Grammar (all topics in the textbook to be covered)

**SECTION-B**

2. Comprehension

**SECTION-C**

3. Simple questions of general interest on Russia.

**SECTION-D**

4. Composition of a dialogue on a given situation.

**SEMESTER-I**

**RUSSIAN**  
**PAPER-II (WRITTEN EXPRESSION & TRANSLATION)**

**Time allowed: 3 Hrs.****M.M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Translation from English into Russian (Simple sentences)

**SECTION-B**

2. Translation from Russian into English/Hindi/Punjabi (Simple sentences)

**SECTION-C**

3. Paragraph of about 100 words. (one out of three topics) e. g. My friend, My family, Our Classroom, Our teacher, About myself, My neighbour, My city.

**SECTION-D**

4. General questions pertaining to day to day life situations.

**Note: Glossary of difficult words may be given for translation purpose in the question paper.**

**PAPER-III (ORAL)****Time allowed: 3 Hrs.****M.M.: 20**

- |                       |           |
|-----------------------|-----------|
| - Reading of a text   | <b>05</b> |
| - Dictation           | <b>05</b> |
| - Simple conversation | <b>10</b> |

**Prescribed Textbook:**

“RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 1 - 12)

**Supplementary Reading:**

1. A.K. Maurya: ESSENTIAL RUSSIAN, University of Delhi, 2004.
2. S Khavronina: Russian in Exercise, 1978.
3. I. Pulkina: RUSSIAN A Practical Grammar with Exercise. Russky Yazik. Pub. H. Moscow.
4. Dictionaries: English - Russian dictionary. Russian - English Dictionary.

**SEMESTER-I****FRL-101****FRENCH****PAPER-I (COMPREHENSION & COMPOSITION)****Time allowed: 3 Hrs.****M. M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Questions of general comprehension related to the text.  
e.g.:- Qu'est- ce que vous faites le dimanche ?;Ou apprenez – vous le français?

**SECTION-B**

2. Questions on comprehension of an unseen passage

**SECTION-C**

3. Composition of dialogue of one of three topics covered in the text book.

**SECTION-D**

4. Simple questions of general interest on French civilisation pertaining to the text. (Questions on important cities, regions, mountains, Monuments, rivers, National day, National Flag, National Song, Cuisine etc.  
These questions are to be asked in the form of fill in the blanks or multiple choice questions.

**SEMESTER-I****FRENCH  
PAPER-II (TRANSLATION & GRAMMAR)****Time allowed: 3 Hrs.****M. M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Translation of a simple unseen passage or short sentences from English into French.

**SECTION-B**

2. Translation of a simple unseen passage or short sentences from French into English.

**SECTION-C**

3. Questions on applied grammar pertaining to the topics covered in the textbook.

**SECTION-D**

4. Questions on applied grammar pertaining to the topics covered in the textbook.

**NOTE: Glossary of difficult words may be given for translation purpose in the question**

**SEMESTER-I**

**FRENCH  
PAPER-III (ORAL)**

**Time allowed: 3 Hrs.**

**M. M.: 20**

- Reading of a text	<b>05</b>
- Dictation	<b>05</b>
- Simple conversation	<b>05</b>
- Oral Comprehension	<b>05</b>

**Prescribed Book: “CONNEXIONS-1”** by Regine Merieux & Yves Loiseau, Published by Didier  
(UNIT 1-6) **Recommended Books: Nouveau Sans Frontières 1** by Philippe Dominique & Jacky  
Girardet. Collins et Robert pocket dictionary. Le nouveau Bescherelle Part I.

**SEMESTER-I****URDU****URL101****Prose and Poetry****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Courses of Study****SECTION-A**

Translation of Prose passages

**SECTION-B**

Explanation of verses

**SECTION-C**

- a) Summary of a poem
- b) Summary of a lesson

**SECTION-D**

Direct Questions on Poets and writers studied

**Book Prescribed:-****Urdu Nisab Part II**, Published by M/S Educational Book House A.M.U. Market, Aligarh-2

**SEMESTER-I**

**PERSIAN**

**PRL101:**

**PROSE AND POETRY**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Courses of Study**

**Books Prescribed:-**

Farsi-O-Dastur Part – II by Dr. Zehra Khanlari,  
Published by Idara Adabiyat, 5803- Sadar Bazaar, Delhi-6  
Following lessons are included in syllabus:  
1,2,11,20,26,27,29,30,32,33,38,39,47,49 and 50.

**SECTION-A**

Passages for Translation

**SECTION-B**

Stanzas for explanation

**SECTION-C**

Theme/ Summary/ central Idea of a Poem or Lesson

**SECTION-D**

Questions on life and works of poets studied

**Books Recommended:**

1. Sher-ul-Ajam, Part-I, Pages-30-36 and 144-152.), Anjuman Tarrigi, Urdu Hindi, Delhi.
2. Sher-ul-Ajam, Part-II, (Pages-212-298.), Anjuman Tarrigi Urdu, Jama Masjid, Delhi- 6.
3. Tarikh-e-Adabiyat-e-Iran by Raza Zada Shafaq, Tr.By Mubariz-ud-din Rif'at, Edara Musannifin, hyderabad. 1998, age-87-95 and 150-157)
4. Tarikh-e-Islam by Akbar Shah khan Najibabadi, Part-II, (Pages-362-380) Edara Musannifin, Azamgarh
5. Subak Shinasi Part-II, By Malik-ush-Sho'ara Bahar (pages-124-126)
6. Gulistan-e-Sa'di. Anjuman Tarrigi Urdu, Jama Masjid, Delhi, 110006.
7. Qabus Nameh. Anjuman Tarrigi Urdu, Jama Masjid, Delhi- 06
8. Marzban Nameh. Anjuman Tarrigi Urdu, Jama Masjid, Delhi, 110006.
9. A literary History of Persia, Vol. I, By E. G. Brown - (Pages-275-289 & Vol. II, (Page-489)

**SEMESTER-I**

**HINDI (ELECTIVE)**

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l e; & 3 ?k. Vs

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**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

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काव्य पथ: संपादक— डॉ. सुधा जितेन्द्र, प्रकाशक— गुरु नानक देव यूनिवर्सिटी, अमृतसर, 8 कवि रखे गए हैं।  
1 से 7 और 9।

I D' ku&ch

आदर्श हिन्दी व्याकरण तथा सैद्धांतिकी : डॉ. एच.एम.एल. सूद, वागीश प्रकाशन, जालंधर। हिन्दी व्यावहारिक व्याकरण पुस्तक भी निर्धारित की गयी हैं।

(क) संज्ञा, सर्वनाम, विशेषण, क्रिया (केवल व्यावहारिक पक्ष)

I D' ku&l h

अनुवाद: अर्थ और उपयोगिता, पत्र का सामान्य परिचय और प्रकार (केवलसैद्धांतिक पक्ष)

I D' ku&Mh

अनुवाद: शब्दावली (संलग्न), पत्रलेखन: पारिवारिक, शैक्षिक, प्रार्थनापत्र, निमंत्रण पत्र (केवल व्यावहारिक पक्ष)

vupkn | carkh | kekl; 'kcnkoyh

S.No.		
1.	Advertisement	विज्ञापन
2.	Academic	शैक्षणिक
3.	Attached	संलग्न
4.	Administration	प्रशासन
5.	Action	कार्यवाही
6.	Balance	संतुलन
7.	Acceptance	स्वीकृति
8.	Assurance	आश्वासन
9.	Bond	बंध पत्र / शपथ पत्र
10.	Bonafide	वास्तविक
11.	Board	मण्डल / परिषद्
12.	Capacity	क्षमता
13.	Confidential	गोपनीय
14.	Correspondence	पत्र व्यवहार / पत्राचार
15.	Communication	संचार
16.	Corporation	निगम
17.	Commission	आयोग
18.	Census	जनगणना
19.	Consumer	उपभोक्ता
20.	Constitution	संविधान
21.	Casual Leave	आकस्मिक अवकाश
22.	Democracy	लोकतंत्र / प्रजातंत्र
23.	Document	दस्तावेज
24.	Enrollment	नामांकन
25.	Estimate	आकलन
26.	Faculty	विभाग / संकाय
27.	Forwarded	अग्रसारित
28.	Governor	राज्यपाल
29.	Honorary	अवैतनिक
30.	Homage	श्रद्धांजलि
31.	Honorable	माननीय
32.	Illegal	अवैध
33.	Incharge	प्रभारी
34.	Initiative	पहल
35.	Inauguration	उद्घाटन
36.	Increment	वेतनवृद्धि
37.	Inspection	निरीक्षण
38.	Interference	हस्तक्षेप
39.	Joint	संयुक्त
40.	Junior	कनिष्ठ

B.A./B.Sc. (Semester System) (12+3 System of Education) (*Semester-I*) (*Session 2018-19*)  
(*Faculty of Languages*)

41.	Majority	बहुमत / बहुसंख्यक
42.	Minor	नाबालिग
43.	Member of Parliament	संसद सदस्य
44.	Neutral	तटस्थ
45.	Notification	अधिसूचना
46.	Original	मौलिक
47.	Option	विकल्प
48.	Provident Fund	भविष्य निधि
49.	Ratio	अनुपात
50.	Registration	पंजीयन
51.	Revision	पुनरीक्षण
52.	Superintendent	अधीक्षक
53.	Secretary	सचिव
54.	Training	प्रशिक्षण
55.	Transfer	स्थानांतरण
56.	Vacancy	रिक्त स्थान
57.	witness	साक्ष्य / गवाह
58.	Zonal	क्षेत्रीय
59.	Uniformity	एकरूपता
60.	Unavoidable	अपरिहार्य

**SEMESTER-I**  
**Functional Hindi (Vocational)**  
fglUnh QD' kuy %kds' kuy½

fglUnh dk i z ksxkRed 0; kdj.k vkj i z kstuewyd fglUnh o i fjHkkf"kd 'kCnkoyh

I e; % 3 ?k&/s

i w kkd% 60

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

I D'ku& ,

fu/kkfjr i kB; Øe%

(क) शब्दों और वाक्यों की सामान्य अशुद्धियाँ

I D'ku&ch

(ख) संज्ञा, सर्वनाम, लिंग, वचन, क्रिया, विशेषण, उपसर्ग, प्रत्यय, विराम-चिन्ह, वाक्य-रचना, विभिन्न काल और ध्वनि – अर्थ, परिभाषा और भेद बताना

I D'ku&I h

¼x½ i z kstuewyd fglUnh vkj i kfjHkkf"kd 'kCnkoyh

- प्रयोजनमूलक हिन्दी – अभिप्राय: और स्वरूप
- प्रयोजनमूलक हिन्दी – आवश्यकता और विशेषताएँ

I D'ku&Mh

¼k½ i z kstuewyd fglUnh & : i &Hkn] i fj0; kflr

- पारिभाषिक शब्दावली – अर्थ और स्वरूप
- पारिभाषिक शब्दावली – विशेषताएँ और महत्त्व

**SEMESTER-I**  
**Functional Hindi (Vocational)**  
QD' kuy fglh ½okds' kuy½

i z, ksx vksj ekf[kdh

i w kkid% 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग-पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z, ksx ds fo"k;

- शब्दों और वाक्यों की सामान्य अशुद्धियों को शुद्ध करने का अभ्यास।
- सारांश का अभ्यास (संक्षेपण)
- हिन्दी वर्णमाला की जानकारी देना (अनुच्छेद में से स्वर, व्यंजन निकालने)
- राष्ट्रीयकृत बैंकों, पब्लिक सैक्टर/रेलवे/डाकघर/जीवन बीमा/आयकर विभाग आदि में से हिन्दी में प्रयुक्त होने वाले आंकड़े एकत्रित करना।

**SEMESTER-I**  
**Hindi Patrakarita (Vocational)**  
fglnh i =dkfj rk %oksd's kuy½

i =dkfj rk vkš fglnh i =dkfj rk % l kekl; i fjp;  
l e; % 3 ?ka/s

i wkkd% 60

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

I D'ku&

fu/kkfj r i kB; Øe%

½d½ i d 'kCnkoyh& ¼ kCnkoyh l kFk l byXu g%

(हिन्दी पत्रकारिता: विकास और विविध आयाम—श्रीमती सुशीला जोशी: राजस्थान हिन्दी ग्रन्थ अकादमी, चतुर्थ संस्करण – 2000)

I D'ku&ch

¼[k½ i =dkfj rk% vFk] i fjHkk"kk vkš Lo: i

- पत्रकारिता: उद्देश्य और दायित्व
- पत्रकारिता: प्रशिक्षण
- पत्रकारिता: प्रशिक्षण की समस्याएँ
- पत्रकारिता और पत्रकार
- पत्रकार के गुण और दायित्व

I D'ku&l h

¼x½ fglnh i =dkfj rk% fo"k; vkš {ks=

- हिन्दी पत्रकारिता : प्रकार
- हिन्दी पत्रकारिता : चुनौतियाँ और समस्याएँ
- चतुर्थ स्तम्भ के रूप में हिन्दी पत्रकारिता

I D'ku&Mh

¼?k½ fglnh i =dkfj rk dk fodkl

- भारतेन्दु युग की पत्रकारिता
- द्विवेदी युग की पत्रकारिता
- छायावाद युग की पत्रकारिता
- आधुनिक युग की पत्रकारिता
- हिन्दी भाषा के प्रचार – प्रसार में हिन्दी पत्रकारिता का योगदान
- हिन्दी पत्रकारिता : रोजगार के अवसर

**SEMESTER-I**  
**Hindi Patrakarita (Vocational)**  
fgllnh i =dkfj rk %oksd's kuy½

i z, ksx vksj eks[kdh

i wkkid% 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z, ksx ds fo"k;

- विभिन्न भाषी समान समाचारों का संकलन
- शीर्षक-लेखक का अभ्यास
- हिन्दी-सम्प्रेषण निपुणता (Communication Skill) का प्रशिक्षण
- विभिन्न विषयों (राजनीतिक, सामाजिक आदि) पर समाचार-लेखन का अभ्यास

**SEMESTER-I**  
**SANSKRIT (ELECTIVE)**

¼dk0; , oa 0; kdj . k½

l e; &3 ?k. Vs

i w kkZd&100

i 7 u&i = dk ek/; e fglnh gksxkAmYkj l d'r@fglnh@i atkch@vaxst h ea gks l d'rs gA

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

पूर्णसार्धशतकम् के 1 से 32 श्लोक  
भक्तपूर्ण सिंह जी का जीवनवृत्त, भक्तपूर्ण सिंह जी का जीवन दर्शन,  
1-32 श्लोकों पर आधारित प्रश्न, सार।

**SECTION-B**

पूर्णसार्धशतकम् के 33 से 65 श्लोक  
भक्तपूर्ण सिंह जी का सेवाभाव, भक्तपूर्ण सिंह जी की सेवा के विविध प्रसंग,  
33-65 पद्यों पर आधारित प्रश्न, सार।

**SECTION-C**

1-100 संस्कृतसंख्यावाचक शब्द  
स्वरसन्धि  
निर्धारित धातुओं के लट्, लोट् एवं लृट् में रूप।  
भ्वादिगण-भू, पठ्, हस्, लिख् वद्, गम्, पत्, दृश्, स्मृ, पच्  
अदादिगण-अस्  
जुहोत्यादिगण-दा  
दिवादिगण-दिव्, नृत्, नश्  
स्वादिगण- शक्, श्रु  
तनादिगण- कृ

**SECTION-D**

निर्धारित अव्ययों का संस्कृत वाक्य में प्रयोग  
कुत्र, यत्र, तत्र, सर्वत्र, चिरम्, पुनः, श्वः, सदा, यदा, कदा, यथा, तथा, अधुना, अपि, एवम्।  
यूनिट C में निर्धारित धातुओं के लङ् एवं विधिलिङ् लकारों में रूप।  
वर्णोच्चारण।

lk' ui = fuekZk funZk

पाठ्यक्रम के A, B, C, D 4 सैक्शन हैं। अतः प्रश्न पत्र के भी A, B, C, D 4 सैक्शन बनाये जायेंगे तथा उन में 8 प्रश्न (पाठ्यक्रम के सैक्शन A से 2, B से 2, C से 2, D से 2) दिये जायेंगे। यदि आवश्यकता हो तो किसी भी प्रश्न के क, ख, ग, घ भाग बनाये जा सकते हैं, परन्तु सभी प्रश्नों के अंक समान हों।

### SECTION-A

<b>Question-I</b>	पूर्णसार्धशतकम् के 1 से 32 श्लोकों में से 4 की सप्रसंग व्याख्या	= 20 अंक
<b>Question-II</b>	क. प्रश्नों के लिए निर्धारित बिन्दुओं में से एक प्रश्न	= 10 अंक
	ख. प्रश्नों के लिए निर्धारित बिन्दुओं में से एक प्रश्न	= 10 अंक

### SECTION-B

<b>Question-III</b>	पूर्णसार्धशतकम् के 33 से 65 श्लोकों में से 4 की सप्रसंग व्याख्या	= 20 अंक
<b>Question-IV</b>	क. प्रश्नों के लिए निर्धारित बिन्दुओं में से एक प्रश्न	= 10 अंक
	ख. प्रश्नों के लिए निर्धारित बिन्दुओं में से एक प्रश्न	= 10 अंक

### SECTION-C

<b>Question-V</b>	निर्धारित संख्याओं में से 10 को संस्कृत में लिखवायें।	= 20 अंक
<b>Question-VI</b>	क. निर्धारित धातुओं में से 2 धातु देकर लट्, लोट् एवं लृट् रूप पूछे जायेंगे।	= 10 अंक
	ख. स्वर सन्धि में से 5 का सन्धि/सन्धिच्छेद	= 10 अंक

### SECTION-D

<b>Question-VII</b>	निर्धारित अव्ययों में से 8 का वाक्यों में प्रयोग पूछा जाए।	= 20 अंक
<b>Question-VIII</b>	क. निर्धारित धातुओं में से 2 धातु देकर लङ् एवं विधिलिङ् रूप पूछे जायें।	= 10 अंक
	ख. 5 वर्णों का उच्चारण स्थान पूछा जाए।	= 10 अंक

vuq kfi r xJFk %

1. पूर्णसार्धशतकम् (दलबीर सिंह चाहल), पब्लिकेशन ब्यूरो, गुरु नानक देव विश्वविद्यालय, अमृतसर।

**SEMESTER-I**  
**FUNCTIONAL SANSKRIT (VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

प्रश्न पत्र हिन्दी में होगा।

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन:  
भारतीय संस्कृति  
भारतीय संस्कृति के ग्राह्य तत्त्व

**SECTION-B**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन :  
धार्मिक विधियों के उद्देश्य एवं प्रयोजन  
पंचांग परिचय

**SECTION-C**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन :  
सन्ध्यावन्दन विधि  
प्राणायाम विधि  
अग्नि आवाहन विधि

**SECTION-D**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन :  
ज्योतिष शास्त्र परिचय  
जातकरचनाप्रकाशक  
शान्ति होम

lk' ui = fuekzk funzk

पाठ्यक्रम के A, B, C, D 4 सैक्शन हैं। अतः प्रश्न पत्र के भी A, B, C, D 4 सैक्शन बनाये जायेंगे तथा उन में 8 प्रश्न (पाठ्यक्रम के सैक्शन A से 2, B से 2, C से 2, D से 2) दिये जायेंगे। यदि आवश्यकता हो तो किसी भी प्रश्न के क, ख, ग, घ भाग बनाये जा सकते हैं, परन्तु सभी प्रश्नों के अंक समान हों।

**SECTION-A**

<b>Question-I</b>	प्रश्न	= 20 अंक
<b>Question-II</b>	प्रश्न	= 20 अंक

**SECTION-B**

<b>Question-III</b>	प्रश्न	= 20 अंक
<b>Question-IV</b>	प्रश्न	= 20 अंक

**SECTION-C**

<b>Question-V</b>	प्रश्न	= 20 अंक
<b>Question-VI</b>	प्रश्न	= 20 अंक

**SECTION-D**

<b>Question-VII</b>	प्रश्न	= 20 अंक
<b>Question-VIII</b>	प्रश्न	= 20 अंक

**SEMESTER-I**

**ENGLISH (COMPULSORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Texts Prescribed:-**

1. *Tales of Life* (Guru Nanak Dev University, Amritsar) Stories at Sr.No.1, 2, 3, 5 and 6
2. *Prose for Young Learners* (Guru Nanak Dev University, Amritsar) Essays at Sr. No. 1, 2, 3, 5 and 6
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

**The syllabus is divided in four sections as mentioned below.**

**SECTION-A**

English Grammar in Use, 4<sup>th</sup> Edition by Raymond Murphy, CUP (Units: 1-37)

**SECTION-B**

Paragraph Writing and English Grammar in Use (Units: 38-48)

**SECTION-C**

Tales of Life (Guru Nanak Dev University, Amritsar): Stories at Sr. No. 1, 2, 3, 5 and 6

**SECTION-D**

Prose for Young Learners: Essays at Sr. No. 1, 2, 3, 5 and 6

**SEMESTER-I**  
**ENGLISH (ELECTIVE)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Prescribed Books:**

1. *A Doll's House* by Henrik Ibsen (preferably Penguin Classics Edition)
2. *Spots of Time* G.N.D.U. Amritsar
3. *Glossary of Literary Terms* by M.H. Abrams, Wadsworth CENGAGE Learning Publishers, 8th Edition, 2008.
4. *Better Pronunciation of English* by J.D.O'Connor

**The syllabus is divided in four sections as mentioned below:**

**SECTION-A**

- a) Literary Terms: Ballad, Character, Comedy, Conceit, Epic, Irony, Plot, Paradox
- b) Transcription of Words: comb, crèche, dose, gauge, ghost, castle, gross, mauve, sure sample, wolf, wool, arch, off, of, door, stair, what, cough, clerk, tooth, yak, yawn, sing, tongue.

**SECTION-B**

*Spots of Time*: Poems at serial No. 1,2,3,5,7,8,9

**SECTION-C**

*Spots of Time*: Poems at serial No. 10-12, 14, 19, 20

**SECTION-D**

*A Doll's House* by Henrik Ibsen

**SEMESTER-I**

**FUNCTIONAL ENGLISH (VOCATIONAL)  
PHONETICS AND PHONOLOGY (THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 60  
Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Book Prescribed:** J.D.O'Connor, *Better Pronunciation of English*

**Course Contents:**

**SECTION-A**

The phonology of English: Phonetic Symbols for Consonants, Vowels and Diphthongs, Consonant clusters

**SECTION-B**

The Syllable, Weak Forms and Contractions

**SECTION-C**

Word Stress, Sentence Stress

**SECTION-D**

Intonation: Patterns of Intonation in simple sentence types.

**(PRACTICAL)**

**Marks: 40**

The main emphasis in the practical examination should be to assess the pronunciation of the examinees. Some of the suggested tasks for practical examination are given below:

1. The examinees may be asked to pronounce some individual words, or loudly read a passage. **10 Marks**
2. The examinees may be asked to form groups and to engage in conversation on the given topic. **10 Marks**
3. The examinees may be asked to listen to a recorded conversation and transcribe that conversation. **10 Marks**
4. Any other practical activity **10 Marks**

**Note:** The examiner may use some other similar modes of testing.

**Suggestions for Teaching:**

1. Lists of minimal pairs may be used (e.g. cot-court, ship-sheep, etc.) for practice in listening and speaking.
2. Emphasis is to be placed on the use of spoken language rather than on theory. Once the learners are familiar with the speech sounds, patterns of stress and intonation, they must be given intensive practice in these areas.
3. It must be made clear that the model of pronunciation is not strictly R.P. Learners should follow the dictionary as closely as possible but wherever there are differences between R.P. and the sounds used in Indian English, these differences can be accepted if they do not interfere with intelligibility and clarity of speech. (Teachers may not insist on a perfect articulation of RP sounds).

**SEMESTER-I**

**Punjabi (Compulsory) ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ : 50

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਇੱਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

**ਸੈਕਸ਼ਨ - ਏ**

ਦੋ ਰੰਗ (ਕਵਿਤਾ ਭਾਗ) (ਸੰਪਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿੱਲੋਂ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਸਰਗੋਧੀਆ),  
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

(ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ /ਪ੍ਰਸ਼ਗ ਸਾਹਤ ਵਿਆਖਿਆ/ਕਾਵਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ)

**ਸੈਕਸ਼ਨ - ਬੀ**

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਹਸਤੀਆਂ (ਜੀਵਨੀ ਨੰ: 1 ਤੋਂ 9 ਤੱਕ)

(ਸੰਪਾ. ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ, ਹਰਨਾਮ ਸਿੰਘ ਸ਼ਾਮ),

ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

(ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

**ਸੈਕਸ਼ਨ - ਸੀ**

(ੳ) ਪੈਰਾ ਰਚਨਾ (ਤਿੰਨ ਵਿੱਚੋਂ ਇੱਕ)

(ਅ) ਪੈਰਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ।

**ਸੈਕਸ਼ਨ - ਡੀ**

(ੳ) ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਵਿੱਚ ਅੰਤਰ,  
ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ-ਚਿੰਨ੍ਹ।

(ਅ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ

**SEMESTER-I**

**Punjabi (Elective) ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 100

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

**ਸੈਕਸ਼ਨ- ਏ**

ਸੁਖਨ ਦੇ ਸੂਰਜ (ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਾਵਿ-ਸੰਗ੍ਰਹਿ : 1901-1995),  
(ਸੰਪਾ. ਡਾ. ਬਲਜੀਤ ਕੌਰ ਅਤੇ ਡਾ. ਟੀ.ਡੀ. ਜੋਸ਼ੀ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।  
ਕਵਾ : ਭਾਈ ਵਾਰ ਸਾਘ, ਪ੍ਰ. ਪੂਰਨ ਸਾਘ, ਮਹਨ ਸਾਘ, ਆਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਬਾਵਾ ਬਲਵਤ, ਸ਼ਵ ਕੁਮਾਰ, ਜਗਤਾਰ,  
ਪਾਸ਼, ਸੁਰਜੀਤ ਪਾਤਰ ।

(ਪ੍ਰਸ਼ਗ ਸਾਹਤ ਵਿਆਖਿਆ/ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ)

**ਸੈਕਸ਼ਨ- ਬੀ**

ਸਿਮਟਦਾ ਆਕਾਸ਼ (ਨਾਵਲ) - ਬਲਬੀਰ ਪਰਵਾਨਾ  
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।  
(ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ/ਵਿਸ਼ਾ-ਵਸਤੂ/ਬਰਤਾਤਕ ਜੁਗਤਾ/ਪਾਤਰ-ਉਸਾਰੀ)

**ਸੈਕਸ਼ਨ- ਸੀ**

ਭਾਰਤੀ ਕਾਵਿ- ਸ਼ਾਸਤਰ : ਪਾਰਭਾਸ਼ਾ, ਸਪਰਦਾਵਾ

(ਧੁਨੀ ਸੰਪਰਦਾ, ਰਸ ਸੰਪਰਦਾ, ਅਲੰਕਾਰ ਸੰਪਰਦਾ)

**ਸੈਕਸ਼ਨ- ਡੀ**

ਅਰਥ ਵਿਗਿਆਨ : ਸਫੇਟ ਅਤੇ ਅਪੋਹ ਸਥਾਤ, ਅਰਥ ਆਧਾਰਤ ਸ਼ਬਦ ਵਨਗਾਆ : ਬਹੁਅਰਥਕ, ਸਮਾਨਅਰਥਕ,  
ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦ

**SEMESTER-I**

**Mudhli Punjabi**

**ਮੁੱਢਲੀ ਪੰਜਾਬੀ**

(In lieu of Compulsory Punjabi)

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ**

**ਸੈਕਸ਼ਨ-ਏ**

ਪੈਂਤੀ ਅੱਖਰੀ, ਅੱਖਰ ਕ੍ਰਮ, ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ ਅਤੇ ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ ਅਤੇ ਮਾਤ੍ਰਵਾਂ (ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ)

ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ) : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ

**ਸੈਕਸ਼ਨ-ਬੀ**

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ : ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ

(ਸਾਧਾਰਨ ਸ਼ਬਦ, ਸੰਯੁਕਤ ਸ਼ਬਦ, ਮਿਸ਼ਰਤ ਸ਼ਬਦ, ਮੂਲ ਸ਼ਬਦ, ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ)

**ਸੈਕਸ਼ਨ-ਸੀ**

ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ : ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਰਿਸ਼ਤੇ-ਨਾਤੇ, ਖੇਤੀ ਅਤੇ ਹੋਰ ਧੰਦਿਆਂ ਆਦਿ ਨਾਲ ਸੰਬੰਧਤ।

**ਸੈਕਸ਼ਨ-ਡੀ**

ਹਫ਼ਤੇ ਦੇ ਸੱਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁੱਤਾਂ ਦੇ ਨਾਂ, ਇਕ ਤੋਂ ਸੌ ਤਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ

**SEMESTER-I**

**FUNCTIONAL PUNJABI (VOCATIONAL)**  
**(ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ)**  
**(Theory)**

ਕੁਲ ਅੰਕ : 100

ਪਰਚਾ ਏ : ਲਿਖਣ ਸ਼ੈਲੀਆਂ

ਅੰਕ : 50

ਪਰਚਾ ਬੀ : ਰਸਮੀ ਲਿਖਤ

ਅੰਕ : 50

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਉਚਾਰਨ ਅਤੇ ਲਿਖਤ ਨਾਲ ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ
2. ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਦਾ ਅਭਿਆਸ

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਰਚਾ ਏ - ਲਿਖਣ ਸ਼ੈਲੀਆਂ**

ਸਮਾ : ਦ ਘਟ

ਅੰਕ : 50

ਪਾਠ-ਕ੍ਰਮ

ਸੈਕਸ਼ਨ-ਏ

ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਸੰਰਚਨਾ (ਵਾਕ, ਸ਼ਬਦ)

ਪੰਜਾਬੀ ਉਚਾਰਨ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ

ਸੈਕਸ਼ਨ-ਬੀ

ਉਚਾਰਨ ਅਗਾ ਦਾ ਬਣਤਰ ਅਤ ਕਾਰਜ, ਧੁਨਾਆ ਦਾ ਵਰਗਾਕਰਨ

ਪੰਜਾਬੀ ਸੂਰ, ਵਿਅੰਜਨਾਂ ਤੇ ਸੁਰਾਂ ਦੇ ਉਚਾਰਨ ਤੇ ਵਰਤੋਂ ਦੇ ਨੇਮ

ਸੈਕਸ਼ਨ-ਸੀ

ਅੰਤਰ-ਰਾਸ਼ਟਰੀ ਧੁਨੀ ਲਿਪੀ : ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ

ਅੰਤਰ-ਰਾਸ਼ਟਰੀ ਧੁਨੀ ਲਿਪੀ ਦਾ ਵਰਤ

ਗੁਰਮੁਖੀ ਔਰਥੋਗਰਾਫੀ ਦੇ ਤੱਤ ਅਤੇ ਨਿਯਮ

ਪੰਜਾਬੀ ਉਚਾਰਨ ਨੂੰ ਅੰਤਰ-ਰਾਸ਼ਟਰੀ ਧੁਨੀ ਲਿਪੀ ਅਤੇ ਗੁਰਮੁਖੀ ਵਿਚ ਲਿਖਣ ਲਈ 10-10 ਸਤਰਾਂ ਦ ਪਜ ਅਭਿਆਸ

ਸੈਕਸ਼ਨ-ਡੀ

ਕੰਪਿਊਟਰ ਦੀ ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਮੁਖ ਕਾਰਜ

ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ : ਇਟਰਨਟ, ਏ-ਮੇਲ

**SEMESTER-I**

**FUNCTIONAL PUNJABI (VOCATIONAL)**

(ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ)

(Practical)

ਸਮਾਂ : 1 ਘੰਟਾ

ਪਰਚਾ ਬੀ- ਰਸਮੀ ਲਿਖਤ

ਕੁਲ ਅੰਕ : 50

**ਪਾਠ-ਕ੍ਰਮ**

**ਸੈਕਸ਼ਨ-ਏ**

ਲਿਖਤ ਨੂੰ ਉਚਾ ਆਵਾਜ਼ ਵਿਚ ਪੜ੍ਹਨ ਦਾ ਅਭਿਆਸ

**ਸੈਕਸ਼ਨ-ਬੀ**

ਜੁਬਾਨੀ ਬੋਲਣ ਦਾ ਅਭਿਆਸ

ਯਾਦ ਕਰਕੇ ਜੁਬਾਨੀ ਬੋਲਣ ਦਾ ਅਭਿਆਸ

**ਸੈਕਸ਼ਨ-ਸੀ**

ਬਿਨਾਂ ਤਿਆਗ ਤੇ ਕਿਸ ਘਟਨਾ, ਖ਼ਬਰ, ਸਾਖ਼ਤਾ, ਦ੍ਰਿਸ਼ ਜਾਂ ਵਿਅਕਤੀ ਬਾਰੇ ਮਾਖ਼ਕ ਪਧਰ ਉੱਤੇ ਵਰਣਨ ।

**ਸੈਕਸ਼ਨ-ਡੀ**

ਰਿਸ਼ਤਾ-ਨਾਤਾ ਪ੍ਰਣਾਲੀ ਨਾਲ ਸਬਾਧਤ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਦਾ ਜਾਣਕਾਰੀ

ਦਫ਼ਤਰੀ ਤਕਨੀਕੀ ਸ਼ਬਦਾਵਲੀ ਦੀ ਜਾਣਕਾਰੀ

ਨੋਟ : ਪ੍ਰਕਟਿਕਲ ਵਿਚ ਵਿਦਿਆਰਥੀ ਦਾ ਪੰਜਾਬੀ ਉਚਾਰਨ ਦਾ ਸਮਰਥਾ ਦਾ ਮਾਖ਼ਕ ਪਰੀਖਿਆ ਲਈ ਜਾਵੇਗਾ ।

**SEMESTER-I**  
**PHYSICAL EDUCATION**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Definition of the terms: Education, Physical Education, Physical Training and Coaching.
2. Aims and Objectives of Physical Education.
3. Relationship of Education and Physical Education.

**SECTION-B**

4. Biological Principles:
  - (a) Growth and Development
  - (b) Age and sex differences
  - (c) Effects of heredity and environment on growth and development.
  - (d) Chronological age, physiological age, Anatomical age and Mental age.
5. Body types.

**SECTION-C**

6. Development of Physical Education and Sports in India.
  - (a) Pre-Independence
  - (b) Post- Independence
  - (c) Sports Schemes in India
    - (i) N.S.N.I.S.
    - (ii) Sports Authority of India.
    - (iii) Punjab Sports Department.
    - (iv) Punjab State Sports Council.

**SECTION-D**

7. Olympic Games:
  - (a) Ancient Olympics.
  - (b) Modern Olympics.
8. Commonwealth Games
9. Asian Games

**SEMESTER-I**  
**PHYSICAL EDUCATION**  
**(PRACTICAL)**

**Marks: 40**

**Division of Marks: Athletics (12) + Games (12) +Ground Markings (3+3),  
Practical Note Book (5), Viva-Voce (5)**

- **Athletics Performance** ————— 100M, Shot-put for Boys  
100M, Shot-put for Girls
- **Games (Boys & Girls) ——— Fundamentals, Rules, Performance**  
Volleyball  
Cricket

**Suggested Readings:**

1. Barrow, H.M. Man and His Movements: Principles of Physical education, Lea and Febiger, 1973, Latest Edition.
2. Brar, Gurcharan Singh. Roots of Panjab University and its Sports Archives(1882-1982), Mohindra Publishing House, Chandigarh, 2017.
3. Reverse, R.S., Foundations of Physical Education Houghton Mifflin Co. Boston, 1978, Latest Edition.
4. Bucher, C.S. Foundations of Physical Education 5<sup>th</sup> Edition, 1968, at Louis C.V. Mosby. C.
5. Eraz Ahmad Khan, History of Physical Education – Scientific Book Co., Patna-4, Latest Ed.
6. Singh Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi, 2000.
7. Tadan D.K. et al.: Scientific basis of Physical Education and Sports, Friends Publication, New Delhi, 2001.
8. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
9. Kang G.S. and Deol N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.

# SYLLABUS

FOR

## B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)  
(SEMESTER-II)

**Examinations: 2018-19**



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**GURU NANAK DEV UNIVERSITY**  
**AMRITSAR**

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(ii) Subject to change in the syllabi at any time.  
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**SEMESTER-II**

**POLITICAL SCIENCE**

**MODERN POLITICAL THEORY**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Political System: Meaning, Characteristics and Functions.
2. Political Culture: Meaning, Characteristics and Types.
3. Political Socialisation: Meaning, Characteristics and Agencies.

**SECTION-B**

1. Rights and Duties: Meaning, Types and Relationship between the Two.
2. Universal Declaration of Human Rights.
3. Environmental Protection: Issue and Efforts.

**SECTION-C**

1. Liberty: Meaning, Types and its Safeguards.
2. Equality: Meaning, Types and Relationship between Liberty and Equality.
3. Justice: Meaning and its various Dimensions.

**SECTION-D**

1. Democracy: Meaning, Characteristics and Types.
2. Theories of Democracy: Liberal, Marxian and Elitist Theory.

**Recommended Books:-**

1. J. C. Johari, *Principles of Political Science*, Sterling Publishers, New Delhi.
2. S.P. Verma, *Political Theory*, Geetanjali Publishing House, New Delhi.
3. A.C. Kapur, *Principles of Political Science*, S. Chand & Company, New Delhi.
4. E. Ashirvatham, *Political Theory*, S. Chand & Company, New Delhi.
5. M.P. Jain, *Political Theory*, Authors Guild Publication, Delhi, (Punjabi & Hindi).
6. David Easton, *The Political System*, Scientific Book Agency, Calcutta.
7. D.C. Bhattacharya, *Political Theory*, Vijay Publishing House, Calcutta.
8. O.P. Gauba, *An Introduction to Political Theory*, Macmillan Indian Ltd., New Delhi.
9. Satish Kumar Sharma, *Adhunik Rajnitik Vishleshan*, Publication Bureau, Punjabi University, Patiala.
10. John-Hoffman and Paul Graham, *Introduction to Political Theory*, New Delhi, Pearsons, 2006.
11. Andrew Heywood, *An Introduction to Political Theory*, New Delhi, Palgrave Publications.
12. Aeon J. Skoble and Tibor R. Machan, *Political Philosophy*, 1<sup>st</sup> Edition, New Delhi, Pearson 2007.
13. Catriona Mckinnon, *Issues in Political Theory*, Oxford, 2009
14. R. Bhargava, *Political Theory : An Introduction* , Pearson, 2012
15. N.D Arora, *Introduction to Political Theory*, Har Anand, 2012
16. R.C Vermani, *Understanding Political Theory: Concepts and Issues*, Gitanjali, 2011
17. Anthony H. Birch, *The Concepts and Theories of Modern Democracy*, Routledge, 2013

**SEMESTER-II****HISTORY****HISTORY OF INDIA (C. 1000–A.D.1707)****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. **The Conquests of the Ghaznavis and Ghauris:** Political condition of India; Invasions of Mahmud Ghaznavi; their effects, Battles of Muhammad Ghauri, Causes of the success of the Turks.
2. **Establishment of the Sultanate of Delhi:** Political and military development under Qutabuddin Aibak, Iltutmish and his successors; Consolidation of the Sultanate under Balban and the Mongol invasions.

**SECTION-B**

3. **The Khiljis:** Emergence of the Khiljis under Jalaluddin and Alauddin Khilji; Alauddin's conquests, the Mongol invasions; Treatment of the nobility; Land revenue reforms; Economic reforms. **The Tughlaqs:** Muhammad-bin-Tughlaq; His experiments; Causes of disaffection and revolts; Feroze Tughlaq; Administrative and economic policies and their effects; Taimur's Invasions.
4. **The Vijaynagar Kingdom:** Establishment and expansion; Polity, Economy and Administration; Art and Architecture.

### SECTION-C

5. **Mughal-Afghan Struggle (1526-1556):** Political condition of India; Advent of the Mughals under Babur; Battle of Panipat and its aftermath; Battle of Kanwaha, Battles of Humayun; expansion of the Afghan power under Sher Shah Suri, Administrative reforms; return of Humayun.
6. **Re-establishment and expansion of the Mughal Empire under Akbar:** Conquests, extent of empire, Religious policy, Rajput policy. **Expansion and Decline under Akbar's Successors :** Jahangir and Mewar; North-western campaigns; Extension of influence over the Deccan; Conquest of Ahmednagar by Shah Jahan; Rise of Aurangzeb to power.

### SECTION-D

7. **The establishment of Maratha Power:** The rise of Shivaji, Maratha administration, Land revenue system; Chauth and Sardeshmukhi.
8. **The Mughal Government, Administration and Culture:** Position of the King: Central and local administration; Land revenue system; Mansabdari; Jagirdari; State policy towards agriculture, Trade and Commerce, Literature, Art and Architecture and Culture.

#### Suggested Reading:-

1. Chandra, Satish, *History of Medieval India*, Orient Black Swan, Hyderabad, 2007  
Chandra, Satish, *Medieval India*, Vol. I & II, Har- Anand Publication Pvt. Ltd. New Delhi, 2010
2. Mehta, J.L. *Medieval Indian Society and Culture (Advanced Study in the History of Medieval India, Vol. III)*, Sterling Publication, New Delhi, 2009  
Rizivi, S.A.A., *The Wonder That Was India-II (1200-1700)*, Picador India,  
Mahajan, V.D., *Medieval India*, S. Chand and Publication, New Delhi, 2010

**SEMESTER-II**  
**DEFENCE AND STRATEGIC STUDIES**

**INTERNATIONAL RELATIONS: DEFENCE ASPECTS**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:** *Practicals are only meant for the regular students. For the private students the paper shall be of 100 marks. For private students, each question will be of 20 marks.*

**SECTION-A**

**1. National Interest:**

- i) Concept and definition.
- ii) Vital and non-vital elements
- iii) Instruments of National Interest.

**2. The United Nations:**

- i) Structure (Organs and specialised agencies)
- ii) Functions

**SECTION-B**

**1. Balance of Power:**

- i) Meaning and Concept
- ii) Historical Development of the system.
- iii) Functioning of the system.

**2. Collective Security:**

- i) Meaning & Concept.
- ii) Role of United Nation in maintaining collective security.

**SECTION-C**

**1. Diplomacy:**

- i) Definition.
- ii) Types and uses

**2. Frontiers and Boundaries:**

- i) Difference between Frontiers and Boundaries.
- ii) Types of Boundaries.
- iii) Importance of Boundaries.

### SECTION-D

#### 1. Humanisation of War:

- i) Definition and Concept.
- ii) Geneva Conventions.

#### 2. Means to Settle International Disputes:

- i) Pacific Means.
- ii) Coercive Means

#### 3. Disarmament and Arms Control:

- i) Difference between Disarmament and Arms Control.
- ii) Types of Disarmament.
- iii) Efforts, Made outside the UN towards disarmament.

#### Books Recommended:-

1. Chandra, P. (2014) : International Politics 2<sup>nd</sup> edition
2. Curzon, Lord of Kedleston (1908) : Frontiers.
3. Encyclopedia Americana (Latest edition)
4. Encyclopedia Britannica (Latest edition)
5. Fenwick, Charles G. (1948) : International Law.
6. Ghai, U.R. (2010) : International Politics-Theory and Practice
7. Kapoor, S.K. (2016) : International Law & Human Rights 20<sup>th</sup> edn.
8. Morgenthau, Hans J. (2006) : Politics among Nations 7<sup>th</sup> edition
9. Naik, J.A. (2000) : A Text Book of International Relations.
10. Palmer, N.D. &  
Perkins, H.C. (2001) : International Politics 3ed paperback edition
11. Patel, Satyavrata R. (1964) : A Text Book of International Law.

**SEMESTER-II**

**DEFENCE AND STRATEGIC STUDIES  
(PRACTICAL)**

**Time: 3 Hrs.**

**Total Marks: 20**

**Written: 10**

**Discussion: 05**

**Record & Viva-Voce: 05**

**Instructions for the Examiners:-**

1. Examiners are required to set a question paper containing 10 marks of 1 hour duration in which he is supposed to set at least 3 questions of 5 marks each and students are required to attempt any two.
2. In the written practical Examination, choice in questions may be given to the students. The question paper is to be set at least half an hour before the examination.
3. Each student should be asked to deliver a talk/make short presentation for 5–10 minutes on any of the given topics.
4. Examiners should devote reasonable time for Viva–Voce Test and assess the practical record of a student.
5. For practical paper one group of Students will not comprise of more than 20 students at a time.

**A. WRITTEN TEST**

**Time: 1 Hour**

**Marks: 10**

**1. Directions**

**2. North**

- a. Types of North and finding out True North
- b. The Pole Star Method
- c. The equal altitude method
- d. Watch method & Compass method.

**3. Scale**

- a. Definition,
- b. Methods of representing Scale.
- c. Inter–conversion of scale into Representative Fraction, construction of simple scale line and the comparative scale lines.

**B. TOPICS FOR DISCUSSION/PRESENTATION:**

**Marks: 05**

- a. The role of UN in peace keeping.
- b. Collective Security System
- c. Humanization of War

**C. RECORD AND VIVA-VOCE**

**Marks: 05**

**SEMESTER-II****JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

-Development of Radio, TV, Cinema and Cable in India over the years

**SECTION-B**

-Organs of I & B Ministry: FTII, NFAI, DAVP, Field Publicity, Song and Drama Division, Directorate of film festivals, NFDC, RNI, Film Division  
- Basics of different formats for Radio and TV

**SECTION-C**

-Fundamentals of Hardware of electronic media (Studios, Microphones, Recording and editing equipments)  
- Audio-Visual media and its characteristics

**SECTION-D**

-Print Media, its characteristics (News concept, elements, types, Basics of News reporting, Sources of News, Hard and soft news, specialized reporting, Problems in reporting)

**Books Recommended:-**

1. Professional Journalism M.V. Kamath Vikas
2. The Journalist's Handbook M.V. Kamath Vikas
3. Here is the News Rangaswamy Sterling Parthasarthy Sterling  
Basic News Writing

**SEMESTER-II**

**JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)  
(PRACTICAL)**

**Marks: 20**

Reporting the College Events.

Visit to Newspapers Offices

Rewriting the news (at least 10)

**SEMESTER-II**  
**MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)**  
**AUDIO VISUAL MEDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

-History and Development of Radio, TV, Cinema and Cable in India over the years

**SECTION-B**

-Organs of I & B Ministry: FTII, NFAI, DAVP, Field Publicity, Song and Drama Division, Directorate of film festivals, NFDC, RNI, Film Division

- Basics of different formats for Radio and TV: Talk, Interview, News, Discussion, Voxpox, Live shows, Feature, Documentary, Drama, Serial, Phone in programs, Commercials

**SECTION-C**

-Print Media: characteristics, concept of news

-Elements of news

-Types of news; steps in writing news

-Sources of news

-Basics of news reporting

**SECTION-D**

-Audio-visual media and its characteristics

-Online Journalism

**Books Recommended:-**

<b>Title</b>	<b>Author</b>	<b>Publisher</b>
Outline of Reporting	M.K. Joseph	Anmol Publications, 1997
Radio & TV Journalism	Jan R. Hakemulder	Anmol Publications, New Delhi,
Radio & TV Journalism	K.M. Srivastava	Sterling Publications
Annual Report		I & B Ministry

**SEMESTER-II**

**MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)  
AUDIO VISUAL MEDIA  
(PRACTICAL)**

**Marks: 20**

Visit to AIR, DD and other media organizations, News Writing, Introduction to basic mechanics of production techniques, script writing for Radio & TV programmes. Computer Practicals

**NOTE:- Practical to be conducted by the external examiner.**

**SEMESTER-II**

**PUBLIC ADMINISTRATION**

**INDIAN ADMINISTRATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Main Features of Indian Administration:** Nature of Indian Federalism, Union-State Relations. Legislative, Administrative and Financial.

**SECTION-B**

**Central Administration:** President, Prime Minister, PMO, Council of Ministers. Central Secretariat; Organisation and Functions, Cabinet Secretariat.

**Parliament:** Lok Sabha, Rajya Sabha, Speaker.

**Judicial System:** Supreme Court and High Court.

**SECTION-C**

**State Administration:** Governor, Chief Minister, Council of Ministers, Chief Secretary, State Legislature. State Planning Commission.

**Divisional and District Administration:** Features, Functions and Role of Divisional Commissioner and Deputy Commissioner.

**SECTION-D**

**Issues in Indian Administration:** Relationship between permanent and political executive, Generalist versus specialist.

**Suggested Readings:-**

1. Arora Ramesh K. and Goyal R., Indian Public Administration, Vishwa Prakashan, New Delhi, 2002.
2. Avasthi and Avasthi, Indian Administration, Lakshmi Narain, Agra, 2000.
3. Bhagwan Vishnoo and Bhushan Vidya, Indian Administration, S. Chand & Company, New Delhi, 2000.
4. Fadia B.L. Fadia Kuldeep, Indian Administration, Sahitya Bhawan Publishers, New Delhi, 2005.
5. Hoshiar Singh, Indian Administration, Kitab Mahal, Allahabad, 2000.
6. Jain R.B. Contemporary Issues in Indian Administration, Vishal Publications, New Delhi, 1976.
7. Maheshwari S.R., Indian Administration, Orient Longman, New Delhi, 2000.
8. Maheshwari S.R., State Government in India, McMillan, New Delhi, 1979.
9. Sachdeva Pardeep, Bharti Prashasan, Publication Bureau, Panjabi University, Patiala, 2002.
10. D.D.Basu, Introduction to the Indian Constitution.

**SEMESTER-II**  
**SOCIOLOGY**

**FUNDAMENTALS OF SOCIOLOGY-II**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- a) **Socialization:** Meaning, Processes, Agencies and Theories of self (C.H.Cooley, Sigmund Freud).
- b) **Culture:** Meaning, Elements and Cultural lag.

**SECTION-B**

- a) **Social Stratification:** Meaning and Forms.
- b) **Social Mobility:** Meaning, Types and Causes.

**SECTION-C**

- a) **Social Control:** Meaning and Significance.
- b) **Agencies of Social Control- Formal:** Law. **Informal:** Folkways and Mores.

**SECTION-D**

- a) **Social Disorganization:** Meaning and Forms: Corruption, Crime and Terrorism.

**Recommended Readings:-**

1. Ahuja, Ram. 1993, *Indian Social System*. Jaipur: Rawat Publications.
2. Abraham, M. Francis. 2006, *Contemporary Sociology*. New Delhi: Oxford University.
3. Bottomore, T.B.S. 1972, *Sociology*. Punjabi Translation by Parkash Singh Jammu, Publication Bureau, Punjabi University, Patiala.
4. Gisbert, Pascual. 1969, *Fundamentals of Sociology*. Bombay: Orient Longmans.
5. Jayaram, N. 1988, *Introductory Sociology*. Madras: Macmillan.
6. Johnson, H.M. 1995, *Sociology: A Systematic Introduction*. New Delhi: Allied Publishers.
7. Kapila, S. 1989, *A Text Book of Sociology*, Part-I & II. Jalandhar: New Academic House.
8. Kapila, S. 2001, *Fundamentals of Sociology*, Vol. I. Panchkula, Kapila Publishers.
9. McGee, Reece et al. 1977, *Sociology-An Introduction*. Hindale: Reinehart and Winston.
10. Giddens, Anthony. 2006, *Sociology*. Cambridge: Polity Press.
11. Haralambos, Michael and Robin Heald. 2013, *Sociology: Themes and Perspectives*. New Delhi: Oxford University Press.
12. Oommen, T.K and C.N Venugopal. 2010, *Sociology*. Lucknow: Eastern Book Company.
13. Macionis, John.J and Ken Plumer. 2014, *Sociology: A Global Introduction*. London: Pearson.

**SEMESTER-II**

**WOMEN EMPOWERMENT**

**WOMEN INEQUALITY: SOCIAL, POLITICAL AND ECONOMIC ASPECTS**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Women Inequality: Social Aspects**

1. **Women Inequality and Violence:** Discriminations, Sexual Harassment, Child Marriage, Dowry, Abortion, Trafficking, Rape and Acid throwing.
2. **Social Issues Related to Women and Practice of Inequality:** Health, Female Foeticide, Female Infanticide.

**SECTION-B**

**Women Inequality: Economic Aspects**

1. **Women and Economy:** Poverty and inclusive growth.
2. **Women in Formal Sector:** Information Technology and Industry.
3. **Women in Informal Sector:** Domestic workers and unpaid labour.

**SECTION-C**

**Women Inequality: Political Aspects**

1. Political Movement in Pre Independence and Post Independence period and Women Participation
2. Women Rights and Judiciary in India.

**SECTION-D**

**Women Inequality and Women Movements in India**

1. **Women's Movements and Struggle for Women's Rights:** Role of state, women groups and economy.
2. Women Activism, Protests and Civil Society.

## SEMESTER-II

### Drug Abuse: Problem, Management and Prevention

#### DRUG ABUSE: MANAGEMENT AND PREVENTION

**Time: 3 Hours**

**Max. Marks: 50**

#### Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

##### Prevention of Drug abuse:

Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

#### SECTION-B

School: Counselling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students.

#### SECTION-C

##### Controlling Drug Abuse:

Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program

#### SECTION-D

Legislation: NDPs act, Statutory warnings, Policing of Borders, Checking Supply/Smuggling of Drugs, Strict enforcement of laws, Time bound trials.

#### References:-

1. Ahuja, Ram (2003), *Social Problems in India*, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. *The Drug Crime Connection*. Beverly Hills: Sage Publications.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.
5. Kessel, Neil and Henry Walton. 1982, *Alcoholism*. Harmond Worth: Penguin Books.

6. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
7. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
8. Ross Coomber and Others. 2013, *Key Concept in Drugs and Society*. New Delhi: Sage Publications.
9. Sain, Bhim 1991, *Drug Addiction Alcoholism, Smoking obscenity* New Delhi: Mittal Publications.
10. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab: A Sociological Study*. Amritsar: Guru Nanak Dev University.
11. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
12. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation*, Cambridge University Press.
13. Verma, P.S. 2017, "*Punjab's Drug Problem: Contours and Characteristics*", Economic and Political Weekly, Vol. LII, No. 3, P.P. 40-43.
14. World Drug Report 2016, United Nations office of Drug and Crime.
15. World Drug Report 2017, United Nations office of Drug and Crime.

**SEMESTER-II****PSYCHOLOGY****BASIC PSYCHOLOGICAL PROCESSES-II  
(THEORY)****Time: 3 hours****Max. Marks: 100****Pass Marks: 35% of the subject  
(Theory and Practical Separately)****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****Biological Bases of Behaviour:**

Nervous System (Central and Peripheral), Glands (Endocrine and Exocrine), Neuron (Structure and Functions), Resting and Action Potentials, Synapse and Types of Synapse

**Memory:** Nature, Encoding, Storage and Retrieval, Types of Memory (Sensory, Short-term and Long-term)

**SECTION-B**

**Motivation:** Biogenic and Sociogenic Motives, Instincts, Drives and Incentives, Intrinsic-Extrinsic Framework, Content Theory, The Need Hierarchy Model, Conflicts and Frustration

**Emotions:** Development and Types of Emotions, Theories of Emotions (James Lange & Cannon Bard Theory) Physiological Correlates of Emotions

**SECTION-C**

**Personality:** Concept of Personality, Theories of Personality (Freud, Allport, Murray, Cattell & Eysenck). Techniques of Assessment (Psychometric and Projective)

**SECTION-D**

**Measures of Variability:** Meaning and Characteristics of Good Measure of Variability,  
**Measures of Variability:** Range, Quartile, Average and Standard Deviation, Variance with Merits and Demerits

**References:-**

1. Benjamin, Jr. L.T., Hopkings, J.R. & Nation, J.R. (1987). *Psychology*. Mcmillan Publishing Company, New York.
2. Chaplin, J.R. & Kraiwic, T.S. (1985). *Systems and Theories of Psychology*. Holt, Rinehart and Winston, Inc., New York.
3. Crooks, R.L. & Strin, J. (1988). *Psychology; Sciences: Behaviour and Life*. Holt Rinehart and Winston, Inc., New York.
4. Morgan, G.T., King, P.A., Weisz, T.R. & Schopler, J. (1999). *Introduction to Psychology*. McGraw Hill Book Co., New York.
5. Baron, R.A. (1996). *Psychology*. New Delhi: Prentice Hall of India.
6. Aron (2007). *Statistics for Psychology*. Pearson Education, New Delhi.
7. Coon, D.L., & Mitterer, J.O. (2007). *Introduction to Psychology; Gateways to Mind and Behaviour*. Thomson Wadsworth.
8. Solso, R.L. (2007). *Cognitive Psychology*. Pearson Education, New Delhi.
9. Hall, S.S. & Lindzey (1969). *Theories of Personality*. Wiley Eastern Ltd. New Delhi.
10. Pinel, J.P.J. (2007). *Biopsychology*. Pearson Education, New Delhi.

**SEMESTER–II  
PSYCHOLOGY**

**(PRACTICAL)**

**Marks: 25**

**Instructions for the Practical Examination:-**

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

**Five Practical have to be performed out of the following:**

1. Effect of Knowledge of Results on Performance.
2. Measurement of Motivation through Drive Induction or Level of Aspiration.
3. Projective Techniques–Incomplete Sentence Blank.
4. Personality Inventory
5. Memory Span.
6. Public Opinion Survey.

**SEMESTER-II****GEOGRAPHY****PHYSICAL GEOGRAPHY – II: CLIMATOLOGY & OCEANOGRAPHY  
(THEORY)****Time: 3 Hours****Max. Marks: 100****Theory Marks: 70****Practical Marks: 30****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note: Stencil outline maps are allowed****Objective:**

The objective of this paper is to acquaint the students with the elements and attributes of climatology and oceanography as climate plays a very vital role in human life and oceans are storehouses of resources.

**SECTION-A****Definition of Climatology:** Climate and Weather.**Climate:** Elements and controls.

Physical structure of the atmosphere and attributes of different layers, Physical and Chemical composition of the atmosphere: Dust particles, vapour particles, active gases, inert gases.

**Insolation and Temperature:** Horizontal distribution of insolation, factors affecting temperature of a place, vertical and horizontal and annual, seasonal and diurnal distribution of temperature.

**SECTION-B**

**Atmospheric Pressure and Winds Distribution:** Atmospheric disturbances (Tropical cyclones, temperate cyclones and anticyclones).

**Atmospheric Moisture:** Forms of condensation – Cloud, dew, fog and frost. Precipitation forms and types. World patterns of precipitation: Spatial and seasonal.

**Climatic Classifications and their Bases:** Elementary discussion of Koppen's classification of climates and climatic types.

**Role of Climate in Human Life:** Atmospheric pollution and global warming – general causes, consequences and measure of control.

### SECTION-C

**Oceanography:** Definition, topography of the ocean basins; continental shelf, continental slope, deep sea plain and oceanic deep.

**Features:** Trench, trough, oceanic ridge, guyots, seamount. Factors controlling the world patterns of distribution of temperature and salinity in the ocean waters.

### SECTION-D

**Movements of Oceanic Waters:** Waves and currents. Surface currents of the oceans. Marine Flora, Fauna and Deposits, Corals. Ocean as storehouse of resources for the future.

#### Recommended Books:-

1. Bhutani, Smita: *Our Atmosphere*, Edited by R.C. Chandna, Kalyani Publishers, Ludhiana, Delhi, **2002**.
2. Critchfield, H.J.: *General Climatology*, Prentice Hall of India, Private Ltd., New Delhi, **1983**.
3. Gross, Grant, M.: *Oceanography: A View of the Earth*, Prentice Hall, New Jersey, **1995**.
4. Lal, D.S.: *Climatology*, **Sharda Pustak Bhawan, Allahabad, 2011**.
5. Mathew, J.R.: *Climatology*, McGraw Hill, New Latest Edition.
6. Monkhouse, F.J.: *The Principles of Physical Geography*, University of London Press, London Latest Edition, **1975**.
7. Pattersen, S.: *Introduction to Meteorology*, McGraw Hill Book Co., London, Latest Edition.
8. Stringer, E.T.: *Foundations of Climatology*. Subject Publications, Delhi, 1982.
9. Trewartha, G.T.: *An Introduction to Climate*, McGraw Hill Book Co., New Delhi, International Student Edition, 1980.
10. Khan, N.: *An Introduction to Physical Geography*. Concept New Delhi, **2002**.
11. King, C.A.M.: *Beaches and Coasts*, E. Arnold, London, 1959.
12. King, C.A.M.: *Oceanography*, E. Arnold, London, Latest Edition.
13. Sharma, R.C. & M. Vatel: *Oceanography for Geographers*, Chetyna, Allahabad 1970.
14. Shepar, F.P. : *Submarine Geology*, Harper & Sons, New York, 1948.
15. Sverdrup, H.U. et.al. : *The Oceans*. Prentice Hall, New Jersey, U.S.A. 1959.
16. Singh, Savinder: *Physical Geography*, **Pravalika Publications, Allahabad, 2015**.

**SEMESTER-II  
GEOGRAPHY**

**CARTOGRAPHY-II  
(PRACTICAL)**

**Time: 3 Hours**

**Total Marks: 30**  
**Written Paper of 3 Hours: 15 Marks**  
**Practical Record (File): 08 Marks**  
**Viva: 07 Marks**

**Objectives:**

Geography is an amalgam of physical as well as social sciences and as such it is necessary for the students to go through laboratory exercises particularly to show directions and bearings and different methods of representing relief. Knowledge of directions and bearings is essential and an introduction to weather maps is also required.

**UNIT-I**

**Direction and Bearings:** Plotting of a course, true north, magnetic north, finding true north with the pole star, a watch and a rod; bearing and its conversion.

**Enlargement and Reduction:** Graphic methods—square and triangle; instrumental methods—Pantographic, Xeroxing photographic.

**UNIT-II**

**Weather Maps:**

General Introduction to the study of weather maps, the scheme of weather symbols including Beaufort's scale employed in Indian daily weather maps; weather in India: summer season (period of summer monsoon), winter season, forecasting of weather through the study of weather maps and recent advances in weather forecasting.

**Note:**

1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 units. Eight questions will be set out of the whole syllabus, four from each unit. The students will be required to attempt two questions from each unit. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number one. (Total 12 marks)
3. Evaluation of Practical record will be done at the time of viva-voce examination. A minimum of 12 sheets are to be prepared by the students in each semester.
4. In case the candidate has applied for the improvement, he/she should be required to make a fresh practical note book.
5. For practical classes, the number of students in one group shall not exceed fifteen.

**Recommended Books:-**

**Essential Readings:-**

1. Khullar, D.R.: *Essentials of Practical Geography*, New Academic Publishing Co., Mai Hiran Gate, Jalandhar, 2016.
2. Singh, Gopal: *Mapwork and Practical Geography*, Vikas Publishing House, Pvt. Ltd., New Delhi, 1995.
3. Singh L.R. & Singh, Raghunandan : *Mapwork and Practical Geography*, Central Book Depot, Allahabad, 1993
4. Phyllis Dink: *Mapwork*, Atma Ram & Sons, 1991.

**Further Readings:-**

1. Mishra, R.P. & Ramesh, A.: *Fundamental of Cartography*, Concept Publishing Co., New Delhi, 1989.
2. Monkhouse, F.J. and Wilkinson, H.R.: *Maps and Diagrams*, Methuen & Co., London, Third Edition, 1976.
3. Robinson, A.H. & Randall, D. Sale: *Elements of Cartography*, John Wiley & Sons, New York, (Sixth Edition), 1995.

**SEMESTER-II**

**PUNJAB HISTORY & CULTURE (C 321 TO 1000 A.D.)**  
**(Special Paper in lieu of Punjabi compulsory)**  
**(For those students who are not domicile of Punjab)**

**Time: 3 Hours****Max. Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Punjab under Chandragupta Maurya and Ashoka.
2. The Kushans and their Contribution to the Punjab.

**SECTION-B**

3. The Panjab under the Gupta Emperor.
4. The Punjab under the Vardhana Emperors

**SECTION-C**

5. Political Developments 7<sup>th</sup> Century to 1000 A.D. (Survey of Political) Institutions.
6. Socio-cultural History of Punjab from 7<sup>th</sup> to 1000 A.D.

**SECTION-D**

7. Development of languages and Literature.
8. Development of art & Architecture

**Suggested Readings:-**

1. L. Joshi (ed): *History and Culture of the Punjab*, Art-I, Patiala, 1989 (3<sup>rd</sup> edition)
2. L.M. Joshi and Fauja Singh (ed); *History of Punjab*, Vol.I, Patiala 1977.
3. Budha Parkash: *Glimpses of Ancient Punjab*, Patiala, 1983.
4. B.N. Sharma: *Life in Northern India*, Delhi. 1966.

**SEMESTER-II****ECONOMICS****INDIAN ECONOMY****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Nature of Indian Economy, Agriculture in India: Nature and Importance of Agriculture, Causes of Decline in Productivity, Sustainable Agricultural Growth. Green Revolution and New Agricultural Strategy, WTO and Indian Agriculture (Introductory).

**SECTION-B**

**Industry:** Performance and Problems of Industrial Development, Public Sector versus Private Sector, Role of Privatization, Role of Small and Cottage Industries. Latest Industrial Policy.

**SECTION-C**

**Foreign Trade:** Direction and Composition of Exports and Imports Since 1991, Recent Foreign Trade Policy, Balance of Payment Problem. Foreign Capital and Multinational Corporations in India.

**SECTION-D**

Features of Population Growth in India, Major Problems of the Economy – Inflation, Unemployment, Poverty and Inequality, Current Indian Tax Structure. Planning- Objectives, Strategy, Evaluation of Planning in India. A Brief Idea of Objectives, Targets, Resources of the Latest Five Year Plan (Twelfth Five Year Plan).

**Recommended Texts:-**

1. Mishra and Puri: Indian Economy, Himalaya Publication House, Mumbai, 2003.
2. Rudder Dutt and: Indian Economy (Latest), S. Sundharam Chand & Co. Ltd., New Delhi, 1998.
3. A.N. Aggarwal: Indian Economy, Vikas Publications, Delhi, 1975.
4. C.D. Wadhwa: Indian Economic Policy (1980), Tata McGraw Hill, Bombay, 1973.

## SEMESTER-II

### QUANTITATIVE TECHNIQUES-II

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

**Statistics:** Definition, Scope in Economics, Significance, Limitations. Tabulation, Classification and Graphical representation of data (Pie Chart, Bar Diagram, Histogram, Frequency Polygon, Ogive Curve, etc.).

#### **SECTION-B**

**Concepts and Measures of Central Tendency:** Mean, Median and Mode; Concepts and Measures of Relative Dispersion; Concepts and Measures of Skewness and Kurtosis (Stress on numerical examples).

#### **SECTION-C**

**Correlation Analysis:** Introduction, Importance, Karl-Pearson's Coefficient of Correlation, Spearman's Rank Correlation Coefficient, Simple Regression Analysis; Difference between Correlation and Regression, Lines of Regression, Properties of Correlation and Regression Coefficients (Stress on numerical examples).

#### **SECTION-D**

**Index Numbers:** Concept of Index Number, Purpose Construction & Problems, Laspeyre, Paasche and Fisher's Formulae, Tests of Consistency.

**Analysis of Time Series:** Definition, Components of Time Series, Measurement of Trend by different methods, Measurement of Seasonal Variations (through ratio to move average method); stress on examples.

#### **Books Recommended:-**

1. Gupta, S.P.: Statistical Methods (1981).
2. Croxton, Cowden & Klein: Applied General Statistics (1973).
3. Ya-lun-chou: Statistical Analysis (1975)
4. Kapur and Sexena: Mathematical Statistics (1970)
5. Murry, R. Speigal: Theory and Problems of Statistics (1972).

**SEMESTER-II**

**INDUSTRIAL ECONOMICS**

**INDUSTRIAL ECONOMICS-II**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Industrial Relations:** Concept, approach and organisation.

**Theory of Industrial Relations:** Dunlop's industrial relation system; Classical Marxist Theory; human relation theory; Pluralism and radical approach.

**SECTION-B**

Growth, pattern and structure of labour unions in India—achievements and failures.

Nature and Causes of industrial disputes—settlement and prevention mechanism; Role of tripartism.

**SECTION-C**

**Collective Bargaining:** Theories, types and role; current trends in collective bargaining.

**SECTION-D**

Labour legislation in India with reference to Trade Union Act, 1926; Industrial Disputes Act, 1947, and their contemporary relevance since labour market reforms.

**Recommended Texts:-**

1. Giri, V.V.: Industrial Relations, N.M. Tripathi Asia Publications, Bombay, 1972.
2. Memoria. C.B.: Dynamic of Industrial Relations in India, Himalaya Publishing House, Bombay, 1983.
3. Myers, C.A.: Industrial Relations in India, Asia Publishing House, Bombay, 1970.
4. Ramaswamy, E.A. and U. Ramaswamy: Industrial Relations in India, Macmillan, Delhi, 1978.
5. Punekar, S.D.: Labour Welfare, Trade Unionism and Industrial Relations, Himalaya Publishers, Bombay, 1978.
6. Rees, A: Economics of Work and Play.

**SEMESTER-II****AGRICULTURAL ECONOMICS & MARKETING****AGRICULTURAL MARKETING - I****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Marketing:** Definition, scope, product, production, selling and marketing concepts, marketing efficiency, farmers and marketing.

**SECTION-B**

Consumer-market and buying behaviour, trends in population and income distribution variations in food consumption, market segmentation, market integration, market consideration.

**SECTION-C**

**Agricultural Production in India:** Farm size, land utilization and cropping pattern, characteristics of producer and production.

Variations in production-seasonal, annual and geographic Marketed and marketable surplus.

**SECTION-D**

Agricultural Marketing in India, structure, type and defects, marketing function, processing and standardisation, grading, transportation, distribution and storage, marketing agencies.

**Suggested Readings:-**

1. Cundiff, Still & Goveni, Fundamentals of Modern Marketing.
2. Memoria, C.B., Agricultural Problems of India.
3. Bansil, P.C., Agricultural Problems of India.
4. Rudder Dutt and Sundram, Indian Economy.
5. Indian Council of Agricultural Research, Handbook of Agriculture.
6. S.S. Acharya Marketing of Farm Products.
7. Fundamentals of Agri. Economics, Sadhu & Singh, Himalyan Publishers House, 1996.

## SEMESTER-II

### RURAL DEVELOPMENT-II

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

Rural Development; Concept and Objectives; Rural Development since Independence; community Development Programme (C.D.P.), National Extension Service (N.E.S.), High Yielding Varieties Programme (H.Y.V.P.), Intensive Agricultural District Programme (I.A.D.P.).

#### **SECTION-B**

Small Farmers Development Agencies (S.F.D.A), and Marginal Farmers and Agricultural Labour Agencies (M.F.A.L.A.). Integrated Rural Development Programme (I.R.D.P.), Training of Rural Youth for Self Employment (TRYSEM), National Rural Employment Programme (N.R.E.P.), National Rural Employment Guarantee Act (NREGA).

#### **SECTION-C**

Organisation Set up: Ministry of Rural and Agriculture Development at the Central Level Planning and Planning Machinery, Deptt. of Agriculture and Rural Development at the State level.

#### **SECTION-D**

Panchayati Raj : Rural Development, District Administration and Rural Development. Planning at local level, Role of Block Development Officers in rural development.

#### **Books Suggested:-**

1. Sharma, S.K.: Rural Development Approach Perspective and Strategy, Abhinav Publications, New Delhi.
2. Mehta, S.R.: Rural Development Policies and Programmes.
3. Jain, S.C.: CommUNITY Development and Panchayati Raj in India, NIRD Publications, Hyderabad.
4. Raw, S.K.: Rural Development in India, Some Factors in India, NIRD Publications, Hyderabad.
5. Puri, K.K. and: Local Government in India, Bharat G.S. Brown Pakistan, Jalandhar.

**SEMESTER-II**  
**OFFICE MANAGEMENT AND SECRETARIAL PRACTICES (VOCATIONAL)**  
**COMPUTER APPLICATIONS – II**

**Time: 3 hours**

**Marks: 100**  
**Theory: 60**  
**Practical: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Advanced Word Processing:** Tables: Creating a new table, entering text in a table, adding and inserting rows/columns to a table, deleting rows/column from a table, resizing rows and columns, merging cells, adding borders and shading, deleting a table. Mail Merge: creating a document with mail-merge, creating database for addresses, generating multiple letters for mail merge.

**SECTION-B**

**Spreadsheet:** What is a Spreadsheet? Need and uses of Spreadsheets, advantages and limitations of using Spreadsheets, software used for working with Spreadsheets. Why MS- Excel and which version? Keywords: cell, row, column, label, value, cell address, workbook, worksheet, cell range. Starting Excel: Excel interface, creating a workbook, saving a workbook, editing a workbook, inserting/deleting worksheets, entering data in a cell, selecting cells, moving data from selected cells, rearranging worksheets, imports to spreadsheets, resizing rows/columns. Working with Excel: Creating simple charts: Pie, Line, Bar-chart, using chart wizard.

**SECTION-C**

**Power Point Presentation:** Meaning of PowerPoint presentation, extension of PowerPoint document, Need and use of presentation in office administration, Software available in the market for presentations, Widely used software: PowerPoint by Microsoft and its advantages, PowerPoint interface: title bar, menu bar, toolbars, status bar, task pane., Components of a presentation: slides, outlines, speaker notes, handouts, Creating a simple presentation in PowerPoint, Add-ons to a presentation: images, videos, audio files

**SECTION-D**

**Working with Slides in PowerPoint:** Power Point formatting basics: Slide layouts, changing the background of the slides, applying design templates, changing the color schemes, font and formatting. Viewing a presentation: Normal view, Slide Sorter view, Notes page view, Slide Show view, Adding transition between slides, and adding animation in a slide, automatic slideshow. Working with Slides: Changing layout, duplicating a slide, hiding a slide, moving a slide, deleting a slide, inserting pictures into a slide, inserting word art into a slide, inserting auto shapes.

**Note:** The relevant short cut keys for MS Excel and MS Power Point to be discussed.

**Suggested Readings:-**

- 1) Absolute Beginner's Guide to Computer Basics, Michael Miller.
- 2) Microsoft Word 2010 Step by Step (Microsoft) by Curtis Frye.
- 3) Excel 2010 For Dummies, Greg Harvey.
- 4) Teach Yourself VISUALLY Excel 2010, Paul McFedries.
- 5) PowerPoint 2010 All-in-One For Dummies, Peter Weverka.
- 6) Microsoft Office PowerPoint 2010 Step by Step (Microsoft) by Joyce Cox and Joan Preppernau.

**(PRACTICAL)**

**Marks: 40**

**Word Processing:**

- How to Draw Tables
- How to Insert Text in Tables
- Merging Mails.

**Spreadsheet:**

- Working in Excel
- Creating a Workbook
- Inserting Values in Cells
- Performing Basic Functions

**Power Point Presentation:**

- Creating a Power Point Presentation
- Add-ons like Images, Videos & Audio Files
- Adding transition, animations etc.
- Designing Automatic Slideshow

## SEMESTER-II

### TRAVEL & TOURISM

#### INDIAN HERITAGE AND TOURIST RESOURCES

**Time: 3 Hrs.**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

##### **Geography and Tourism**

Physical features of Indian subcontinent.  
Climatic conditions of India.

##### **Natural Resources and Tourism**

Wildlife Sanctuaries: Jim Corbett Tiger Reserve,  
Bharatpur Bird Sanctuary  
National Parks and Natural Reserves of India: Valley of Flowers, Kanha, Kaziranga,  
Ranthambhore.

#### SECTION-B

##### **Architectural Heritage**

Overviews of Ancient, medieval and modern forms of architecture.

##### **Important Monuments**

Stupa at Sanchi, Brihadeshwara Temple (Tanjore),  
Red Fort (Delhi), Taj Mahal (Agra), Lutyen's Delhi,  
Lotus Temple (Delhi).

#### SECTION-C

##### **Performing Arts**

Schools of painting.  
Classical dances and dance styles  
Folk dances.  
Schools of music.  
Musical instruments.

##### **Handicrafts and Handlooms**

Types of Handicrafts and Handlooms in India.  
Major Fairs for Promotion of Handicrafts and  
Handlooms–Dilli Haar, Central Cottage Industries  
Emporium, Fab India.

## SECTION-D

### Fairs and Festivals

Traditional: Kumbha, Pushkar, Chhatha, Pongal, Holi, Onam, Durga Puja, Ramalila, Diwali, Dashahara (Kullu), Rathayatra, Id-ul-Fitr. Muharram, Christmas.  
Modern: Carnival (Goa), Ganga Mahotsava, Taj Mahotsava, Khajuraho Mahotsava and Desert Festival.

### Hill Stations and Coastal Tourism

Major Hill Stations: Shimla, Darjelling, Ooty, Gangtok, Gulmarg, Ladhak, Kodikannal  
Coasts and Beaches: Beaches of Andaman & Nicobar Islands, Marina Beach (Chennai), Konark Beach (Orissa), Juhu Beach (Mumbai).

### Suggested Readings:-

1. Harle, J.C., *The Art and Architecture of the Indian Subcontinent*, Penguin Books, 1990.
2. Brown, Percy, *Indian Architecture (Buddhist and Hindu) and (Islamic Period)*, Bombay, 1942 and Calcutta, 1942 respectively.
3. Basham, A.L., *The Wonder that was India*, Rupa and Co., Delhi, 1988.
4. Westlake, Graeme, D., *An Introduction to the Hill Stations of India*, Harper Colins Publishers, India, 1993.
5. Mishra, Lavkush, *Cultural Tourism in India*, Mohit Publications, New Delhi, 1999.
6. Day, C.R., *The Music and Musical Instruments of Southern India and the Deccan*, Delhi, Reprint, 1990.
7. Rele, Kanak, *Indian Classical Dances and the Seven Classical Dance Styles*, A Video Film; Handbook of Indian Classical Dance Terminology, Bombay, 1992.

**SEMESTER-II****TOURISM AND HOTEL MANAGEMENT (VOCATIONAL)****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Growth and development of tourism in India

**SECTION-B**

Definition, nature and characteristics of tourism, Types and components of tourism

**SECTION-C**

Impacts of Tourism- Socio-cultural impacts, Economic impacts, Environmental impacts

**SECTION-D**

Tourism as an industry; India a destination for all; Case study of ITDC.

**Note:** One tour/summer training is compulsory every year of which the students shall prepare “A Tour/Project Report”. This report shall be evaluated by the examiner and shall be given grades A, B & C.

**Training: One Month**

During the summer vacation one month training is a must.

## SEMESTER-II

### TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)

#### TOURISM PRODUCT OF INDIA

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

**Tourist Resources:** Definition and differentiation, typology of tourism resources

**Cultural Resources:** Historical Museums of India, Fairs and festivals of India, Customs and Costumes of India.

#### **SECTION-B**

**Socio Cultural Resources:** Historical Monuments of ancient, medieval and modern period, Archaeological sites of India, Art galleries of India, Libraries of India, Religious centres and Shrines of all religions

#### **SECTION-C**

**Social Cultural Resources:** Performing arts of India-Dances, Music, Handicrafts, Yoga and Meditation

#### **SECTION-D**

**Natural Tourist Resource:** Hill stations of India with special reference to Shimla, Manali, Nainital, Ooty.

**Beach Tourism** with special reference to Mumbai, Goa and Kerala

**Island Tourism** with special reference to Andaman and Nicobar Islands

**Desert Tourism**

#### **Books Recommended:-**

1. Percy Brown Indian Architecture–Hindu and Budhist period.
2. Harla, J. C. The Art and Architecture of Indian sub continent.
3. Bhartiya Vidya Bhawan Imperial UNITY.
4. Acharya Ram Tourism & Cultural Heritage of India Rousa Publications (Jaipur, 1986).
5. Basham Al. L.The Wonder that was India: Rupa and Co., Delhi, 1988.
6. The Gazettee of India; History and Culture, Vol. 2, Publication Division Ministry of Information & Broadcasting, Government of India, 1988.
7. Hussain, A.A, The National Culture of India, National Book Trust, New Delhi, 1987.
8. Mukerji, R.K.The Culture and Art of India: George Allen Unwin Ltd.; London, 1959.
9. The Treasure of Indian Museums Marg Publications, Bombay.

**SEMESTER-II****TAX PROCEDURE & PRACTICES****INCOME TAX LAW-II****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Computation of Total Income and Tax Liability of Individuals; Assessment of Agriculture Income. Rates of Tax. Advance Tax

**SECTION-B**

Computation of Total Income and Tax Liability of HUF; (Hindu undivided Family)  
Computation of Total Income and Tax Liability of Firms.

**SECTION-C**

Computation of total income and tax liability of corporative society.

Assessment of Companies: - Meaning; Types situations in which company may be treated as widely held company; determination of Residential status; Computation of Total Income.

**SECTION-D**

Provisions of MAT;

How to determine book profit u/s 115 Dividend Tax

Tax Deducted at Source

**Suggested Readings:-**

1. Datey, V.S., "*Indirect Tax Law & Practice*", 2008, Taxmann Publications Pvt. Ltd. New Delhi
2. Mehrota, H.C., "*Indirect Taxes Law and Practice*", 2009, Sahitya Bhawan Publications, Agra
3. Ahuja, G. and Gupta, R., "*Systematic Approach to Income Tax*", 2011, Bharat Law House Pvt. Ltd., New Delhi
4. Singhania, V.K. and Singhania, M., "*Students' Guide to Income Tax*", 2013, Taxmann Publication Pvt. Ltd, New Delhi.
5. Ahuja, G. and Gupta, R., "*Simplified Approach to Corporate Tax Planning and Management*", 2012, Bharat Law House Pvt. Ltd., New Delhi.

**SEMESTER-II**  
**ADVERTISING SALES PROMOTION AND SALES MANAGEMENT**  
**(VOCATIONAL)**

**Periods per Week**

L	T	Ext.
3	3	

**IInd Semester: Advertising-I**

**On-the-Job Training' of 4 Weeks**

1. A consolidated report on the job training shall be prepared by every student and, must be submitted in the college concerned. The consolidated report will be evaluated by the external examiner and shall be given in the grades as follows :

- O – Outstanding
- A – Very Good
- B \_ Good
- C \_ Average
- D \_ Unsatisfactory

In case the training report as rated as unsatisfactory, the candidate shall have to submitted it again incorporating the changes suggested by the examiner, within one month from the date of intimation to the candidate by the concerned college.

**Advertising Sales Promotion and Sales Management**

**Objectives:**

This course is intended to impart knowledge and develop skill among the participants in the field of marketing communication, so as to equip them to man junior and lower-middle level positions in the fast-growing and challenging business areas of advertising, sales promotion, selling and sales management and Public relations. The course shall consist of six papers, two each of the three years of under graduate programme in the Indian Universities and other institutions. The six papers are:

1. Marketing Communication.
2. Advertising-I
3. Advertising-II
4. Personal Selling and Salesmanship.
5. Management of the Sales-Force.
6. Sales Promotion and Public relations.

All the papers will be handle so as to have practical orientation, with Indian cases and examples.

## **SEMESTER-II**

### **ADVERTISING SALES PROMOTION AND SALES MANAGEMENT (VOCATIONAL)**

#### **ADVERTISING-I**

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

Importance of advertising in modern marketing. Role of advertising in the national economy.

#### **SECTION-B**

Types of advertising: Commercial and noncommercial advertising; primary demand and selective demand advertising; classified and display advertising; comparative advertising' cooperative advertising.

#### **SECTION-C**

Setting of advertising objectives, Setting of advertising budget, Factors affecting the, advertising expenditure in a company.

#### **SECTION-D**

Advertising message, Preparing and effective advertising copy; elements of a print copy; headlines, illustration, bodycopy, slogan, logo seal of approval role of colon, elements of a broadcast copy, copy for direct mail.

#### **Suggested Readings:-**

1. Batra, Rajeev, John G. Myers & David A. Aaker, Advertising Management, 5th ed., PHI, 2006.
2. Rampal, M.K. and S.L. Gupta, Cases & Simulations in Marketing Management, Galgotia Publishing Co., 2000.
3. Belch, George E and Michael A. Batch. Advertising & Promotion, McGraw Hill 2003.

**SEMESTER-II****COMMERCE****BOOK KEEPING AND ACCOUNTANCY****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**50% numerical problem should be asked.**

**The candidates are allowed to use simple (Non-Scientific) calculators.**

**SECTION-A**

Generally accepted accounting principles, concepts, Convention, theory and practice of Double Entry system of book keeping.

**SECTION-B**

Subsidiary Books and ledger, Trial Balance, Bank reconciliation statement, Errors and their Rectifications.

**SECTION-C**

Preparation of trading profit and loss Account and Balance sheet of sole trader and partnership, Treatment of capital and Revenue expenditure.

Preparation of receipts and payments account and income and expenditure accounts.

Bills of exchange.

**SECTION-D**

Elementary knowledge of consignment and joint venture, Indian System of book keeping (Mahajani lekha vidhi).

**Books Recommended:-**

1. Bhattacharyya, "Financial Accounting for Business", Prentice Hall of India, 2007.
2. Grewal T.S. "Double Entry Book Keeping", Sultan Chand, 2007.
3. Tulsian P.C. "Financial Accounting", Pearson Education, 2007.
4. Maheshwari S.N. "Financial Accounting", Vikas Publications, 2007.
5. Horngren, "Introduction to Financial Accounting", Pearson Education, 2007.
6. Naryanaswamy, "Financial Accounting: A Management Perspective." Prentice Hall of India, 2007.

**Note:-**

1. The candidates will visit major (trading/ manufacturing/ services) Organisation with view to be acquainted with the different systems of book keeping.
2. The college will organise atleast five lectures by experts/ professional. Accountants on final Accounts/maintenance of different books of accounting.

**SEMESTER-II**  
**MATHEMATICS**  
**PAPER-I: CALCULUS AND DIFFERENTIAL EQUATIONS**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Asymptotes, Tests for concavity and convexity, Points of inflexion, Multiple Points, Curvature, Tracing of Curves (Cartesian and Parametric coordinates only).

**SECTION-B**

Integration of hyperbolic functions. Reduction formulae. Definite integrals. Fundamental theorem of integral calculus. Quadrature, rectification.

**SECTION-C**

Exact differential equations. First order and higher degree equations solvable for  $x, y, p$ . Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories.

**SECTION-D**

Linear differential equations with constant and variable coefficients. Variation of Parameters method, reduction method, series solutions of differential equations. Power series method, Bessel and Legendre equations (only series solution).

**Books Recommended:-**

1. D.A. Murray: Introductory Course in Differential Equations. Orient Longman (India), 1967.
2. G.F. Simmons: Differential Equations, Tata McGraw Hill, 1972.
3. E.A. Codington: An Introduction to Ordinary Differential Equations, Prentice Hall of India, 1961.
4. Gorakh Prasad: Integral Calculus, Pothishala Pvt. Ltd., Allahabad.
5. Erwin Kreyszig: Advanced Engineering Mathematics, John Wiley and Sons, 1999. 52

**SEMESTER-II****MATHEMATICS****PAPER-II: CALCULUS****Time: 3 Hours****Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Limit and Continuity of functions of two variables, Partial differentiation, Change of variables, Partial derivatives and differentiability of real-valued functions of two variables, Schwartz's and Young's Theorem, Statements of Inverse and implicit function theorems and applications.

**SECTION-B**

Euler's theorem on homogeneous functions, Taylor's theorem for functions of two variables, Jacobians, Envelopes. Evolutes, Maxima, Minima and saddle points of functions of two variables.

**SECTION-C**

Lagrange's undetermined multiplier method, Double and Triple Integrals, Change of variables., Applications to evaluation of areas, Volumes, Surfaces of solid of revolution, Change of order of integration in double integrals.

**SECTION-D**

Application to evaluation of area, volume, surface of solids of revolutions.

**Books Recommended:-**

1. Narayan, S. and P.K. Mittal: Integral Calculus. Sultan Chand & Sons.
2. Kreyszig, E.: Advanced Engineering Mathematics.
3. Narayan S. and P.K. Mittal: Differential Calculus, Sultan Chand & Sons.

**SEMESTER-II****STATISTICS****PAPER-I: STATISTICAL METHODS – II****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Bivariate data, scatter diagram, covariance, Karl–Pearson's correlation coefficient and its properties, calculation of correlation coefficient from grouped data, bounds of the correlation coefficient, interpretation of the value of the correlation coefficient.

**SECTION-B**

Spearman's rank correlation coefficient, The principle of least squares, fitting of straight line, polynomials, exponential, logarithmic curve.

**SECTION-C**

Regression lines, relation between correlation coefficient and regression coefficients.

**SECTION-D**

Independence and association of attributes, measures of association, contingency table.

**Books Recommended:-**

1. Goon, A.M. Gupta, M.K. and Dasgupta B., Fundamentals of Statistics, Vol. I, World Press, 2005.
2. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

**Books Suggested for Supplementary Reading:-**

1. Goon, A.M. Gupta, M.K. and Dasgupta B., Basic Statistics, World Press, 2005.
2. Gupta, S.C., Statistical Methods, Himalayan Publishing House, 2003.
3. Nagar, A.L. and Das, R.K., Basic Statistics, Oxford University Press, 2005.

**SEMESTER-II****STATISTICS****PAPER-II: PROBABILITY DISTRIBUTIONS****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Discrete Distributions: Uniform distribution, Bernoulli distribution, Binomial distribution, Poisson distribution, Poisson distribution as limiting form of Binomial distribution, Fittings of Binomial and Poisson distributions,

**SECTION-B**

Geometric distribution, Pascal distribution and Hyper geometric distribution. Properties, expected value, variance and moment generating functions of these distributions.

**SECTION-C**

Continuous Distributions: Normal distribution, Fitting of normal distribution, Exponential distribution, Uniform distribution.

**SECTION-D**

Gamma distribution, Beta distribution. The properties of these distribution including their expected values, variances and moment generating functions

**Books Recommended:-**

1. Meyer, P.L. Introductory Probability and Statistical Applications, Addison—Wesley, (1970).
2. Hogg. R.V., Mcken, J.W. and Craig. A.T., Introduction to Mathematical Statistics, Pearson Education, 2007.

**Books Suggested for Supplementary Reading:-**

1. Biswal, P.C., Probability and Statistics, Prentice Hall, India, 2007.
2. Ross, S.A. First Course in Probability, Sixth Edition, Pearson Education, 2007.
3. Miller, I, and Miller, M. Mathematical Statistics with Applications, Seventh Edition, Pearson Education, 2007.

**SEMESTER-II****STATISTICS****PAPER-III: - PRACTICAL BASED ON PAPER-I: STATISTICAL METHODS-II AND  
PAPER-II: PROBABILITY DISTRIBUTIONS****Time: 2 Hours****Marks: 30**

Teaching time for practical paper would be one hour per week.

**List of practical exercises**

1. Exercises on calculation of Karl Pearsons correlation coefficient
2. Exercises on calculation of Spearman's rank correlation coefficient
3. Exercises on fittings of regression lines, polynomials, exponential and logarithmic curves.
4. Exercises on fittings of Binomial, Poisson and Normal Distributions
5. Exercises on calculation of probabilities for Binomial, Poisson and Normal Distributions

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and other one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non-Programmable calculators. The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

**SEMESTER-II****CHEMISTRY (INORGANIC CHEMISTRY-A)  
(THEORY)****Time: 3 Hrs.****45 Hrs. (3 Hrs./Week)****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****I. p-Block Elements-I****10Hrs.**

Comparative study (including diagonal relationship) of groups 13-17 elements, compounds like hydrides, oxides, oxyacids and halides of groups 13-16, hydrides of boron-diborane and higher boranes, Borazine, borohydrides, fullerenes.

**SECTION-B****II. s-Block Elements****10 hrs.**

Comparative studies, diagonal relationship, salient features of hydrides, salvation and complexation tendencies.

**III. Acids and Bases**

Arrhenius, Bronsted-Lowry, the Lux-Flood, solvent system and Lewis concepts of acids and bases.

**SECTION-C****IV. p-Block Elements-II****10 Hrs.**

Carbides, fluorocarbons, silicates (structural principle), tetrasulphur tetranitride, basic properties of halogens, interhalogens and polyhalide, Silicones and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.

**SECTION-D****V. Chemistry of Transition Elements****15 Hrs.**

Characteristic properties of *d*-block elements. Properties of the elements of the first transition series, their simple compounds and complexes illustrating relative stability of their oxidation states, coordination number and geometry. General characteristics of elements of Second and Third Transition Series, comparative treatment with their 3d analogues in respect of ionic radii, oxidation states, magnetic behaviour.

**Books Suggested:-**

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 2nd edition, Pubs: John Wiley and Sons, 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman & Hall Ltd., 1991.
3. Shriver, D.E., Atkins, P.W., Inorganic Chemistry; 4th edition, Pubs: Oxford University Press, 2006.
4. Douglas, B., Medaniel, D., Atenander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994,
5. Porterfeild, W.W., Wesky, A., Inorganic Chemistry; Pubs: Addison-Wesky Publishing Company, 1984.
6. Miessler, G.L., Tarr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004,
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: Tata McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B.Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.K., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

**SEMESTER-II****CHEMISTRY (PHYSICAL CHEMISTRY-B)  
(THEORY)**

**Time: 3 Hrs.  
45 Hrs. (3 Hrs./Week)**

**Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note: Log table and scientific calculators are allowed**

**SECTION-A****I. Gaseous States**

**11 Hrs.**

Postulates of kinetic theory of gases, deviation from ideal behaviour, van der Waal's equation of state.

**Critical Phenomena:** PV isotherms of real gases, continuity of states, the isotherms of van der Waal's equation, relationship between critical constants and van der Waals constants, the law of corresponding states, reduced equation of state.

**Molecular Velocities:** Root mean square, average and most probable velocities. Qualitative discussion of the Maxwell's distribution of molecular velocities, collision number, mean free path and collision diameter. Liquefaction of gases.

**SECTION-B****II. Liquid State**

**11 Hrs.**

Intermolecular forces, structure of liquids (a qualitative description). Structural differences between solids, liquids and gases. Liquid crystals: Difference between liquids crystal, solid and liquid. Classification, structure of nematic and cholestric phases. Thermography and seven segment cell.

**SECTION-C****III. Colloidal State**

**11 Hrs.**

Definition of colloids, classification of colloids. Solids in liquids (Sol): kinetic, optical and electrical properties, stability of colloids, protective action, Hardy Schulze law, gold number. Liquids in liquids (emulsions): Types of emulsions, preparation. Emulsifiers. general applications of colloids.

**SECTION-D****IV. Solutions, Dilute Solutions and Colligative Properties****12 Hrs.**

Ideal and non-ideal solutions, methods of expressing concentrations of solutions, activity and activity coefficient. Dilute solution, colligative properties, Raoult's law, relative lowering of vapour pressure, molecular weight determination. Osmosis, Law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point, Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods for determining various colligative properties. Abnormal molar mass, degree of dissociation and association of solutes.

**Books Suggested:-**

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Inc, 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems; Pubs: Wiley Eastern Limited, 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
10. University General Chemistry, C.N.R. Rao, Macmillan.

**SEMESTER-II**

**CHEMISTRY  
(PRACTICAL)**

**Duration: 3½ Hrs.  
6 Period/Week**

**Marks: 30**

**Crystallisation:**

Concept of indication of crystallisation. Phthalic acid from hot water (using fluted filter paper & stem less funnel)

Acetanilide from boiling water.

Naphthalene from Ethanol

Benzoic acid from water

**Physical Chemistry**

1. To determine the specific reaction rate of hydrolysis of ethyl acetate catalysed by Hydrogen ions at room temperature.
2. To study the effect of acid strength on hydrolysis of an ester.

**Viscosity, Surface Tension (Pure Liquids)**

3. To study the viscosity and surface tension of CCI glycerine solution in water.
4. To determine the solubility of benzoic acid at different temperatures and to determine  $\Delta H$  of the dissolution process.
5. To determine the enthalpy of neutralisation of a weak acid/weak base versus strong base/strong acid and determine the enthalpy of ionisation of the weak acid/weak base.
6. To determine the enthalpy of dissolution of solid calcium chloride and calculate the lattice energy of calcium chloride from its enthalpy data using Born Haber cycle.

**Practical Examination:**

	<b>Marks</b>
1) Crystallisation	05
2) Physical Experiment	18
3) Viva-Voce	04
4) Note Book	03

**Books Suggested:-**

1. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
2. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
3. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
5. Experiments in Physical Chemistry, R.C. Das and B. Behra, Tata McGraw Hill.
6. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.
7. Advanced Experimental Chemistry, Vol. I, Physical, J.N. Guru and R. Kapoor, S. Chand & Co.
8. Selected Experiments in Physical Chemistry, N.G. Mukherjee, J.N. Ghosh & Sons.
9. Experiments Physical Chemistry, J.C. Ghosh, Bharati Bhavan.

## SEMESTER-II

### PHYSICS

#### PAPER-A: RELATIVITY AND ELECTROMAGNETISM (THEORY)

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

Postulates of special theory of relativity. Lorentz transformations, observer and viewer in relativity. Relativity of simultaneity, Length, Time, velocities. Relativistic Doppler effect. Variation of mass with velocity, mass-energy equivalence, rest mass in an inelastic collision, relativistic momentum & energy, their transformation, concepts of Minkowski space, four vector formulation.

**11 Lectures**

#### SECTION-B

Invariance of charge, E in different frames of references. Fields of a point charge moving with constant velocity, Lorentz's force, Definition of B. Biot Savart's Law and its application to long straight wire, circular current loop and solenoid. Ampere's Circuital law and its application. Divergence and curl of B. Hall effect, derivation of Hall coefficient. Vector potential, current-density and its applications. Transformation equation of E and B from one frame to another.

**11 Lectures**

#### SECTION-C

Faraday's Law of EM induction, Displacement current, Mutual inductance and reciprocity theorem. Self inductance, L for solenoid, Coupling of Electrical circuits. Analysis of LCR series and parallel resonant circuits, Q-factor, Power consumed, power factor.

**11 Lectures**

#### SECTION-D

Maxwell's equations their derivation and characterizations, E.M. waves and wave equation in a medium having finite permeability and permittivity but with conductivity  $\sigma$ ). Poynting vector, Impedance of a dielectric to EM waves. EM waves in a conducting medium and Skin depth. EM wave velocity in a conductor and anomalous dispersion. Response of a conducting medium to EM waves. Reflection and transmission of EM waves at a boundary of two dielectric media for normal and oblique incidence.

**12 Lectures**

#### **Recommended Books:**

1. Introduction to Electrodynamics - D.J. Griffiths-Pearson Education Ltd., New Delhi, 1991
2. Physics of Vibrations and Waves by H.J. Pain.
3. EM Waves and Radiating Systems by Edward C. Jordan and K.G. Balmain.
4. Fields and Waves Electromagnetic by David K. Cheng.

## SEMESTER-II

### PHYSICS

#### PAPER-B: VIBRATION AND WAVES

##### (THEORY)

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

Simply harmonic motion, energy of a SHO. Compound pendulum. Torsional pendulum  
Electrical Oscillations Transverse Vibrations of a mass on string, superposition of two  
perpendicular SHM having periods in the ration 1:1 and 1:2.

**11 Lectures**

#### SECTION-B

Decay of free Vibrations due to damping. Differential equation of damped harmonic motion,  
types of motion, types of damping. Determination of damping co-efficient- Logarithmic  
decrement, relaxation time and Q-Factor. Electromagnetic damping (Electrical oscillator).

**11 Lectures**

#### SECTION-C

Differential equation for forced mechanical and electrical oscillators. Transient and steady state  
behaviour. Displacement and velocity variation with driving force frequency, variation of phase  
with frequency, resonance. Power supplied to an oscillator and its variation with frequency.  
Q-value and band width. Q-value as an amplification factor. Stiffness coupled oscillators,  
Normal co-ordinates and normal modes of vibration. Inductive coupling of electrical oscillators.

**12 Lectures**

#### SECTION-D

Types of waves, wave equation (transverse) and its solution characteristic impedance of a string.  
Impedance matching. Reflection and Transmission of waves at boundary. Reflection and  
transmission of energy. Reflected and transmitted energy coefficients. Standing waves on a  
string of fixed length. Energy of vibrating string. Wave and group velocity.

**11 Lectures**

#### **Recommended Books:-**

1. Fundamentals of Vibrations and Waves by S.P. Puri.
2. Physics of Vibrations and Waves by H.J. Pain.

**PHYSICS**  
**SEMESTER-II**

**(PRACTICAL)**

**Marks: 30**

**General Guidelines for Practical Examination:**

- I. The distribution of marks is as follows :
 

i) One experiment	15 Marks
ii) Brief Theory	5 Marks
iii) Viva-Voce	5 Marks
iv) Record (Practical file)	5 Marks
- II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
- III. Number of candidates in a group for practical examination should not exceed 12.
- IV. In a single group no experiment be allotted to more than three examinee in any group.
  1. To determine low resistance with Carey-Foster's Bridge.
  2. To study the magnetic field produced by a current carrying solenoid using a search coil and calculate permeability of air.
  3. To study the induced e.m.f. as a function of the velocity of the magnet.
  4. Study of phase relationships using impedance triangler for LCR circuit and calculate impedance.
  5. Resonance in a series and parallel LCR circuits for different R-value and calculate Q-value.
  6. Capacitance by flashing and quenching of a neon lamp.
  7. Measurement of capacitance, determination of permittivity of a medium air and relative permittivity by de-Sauty's bridge.
  8. To determined L using Anderson Bridge.
  9. To find the value of  $B_H$  the horizontal component of earth's magnetic field in the lab using a deflection & vibration magnetometer.
  10. To study the variation of magnetic field with distance along the axis of coil carrying current by plotting a graph.

**SEMESTER-II**

**HOME SCIENCE**

**(THEORY)**

**FAMILY RESOURCE MANAGEMENT AND PHYSIOLOGY**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. **Meaning & Definition of Home Management.** Steps in management process
2. **Furniture:** Basic considerations while selection of furniture.
3. **Flower Arrangement:** Types, Essential equipment used in flower arrangement, Selection of material, Application of elements and principles of Art in Flower Arrangement

**SECTION-B**

4. **Resources:** Classification of resources, Human & Nonhuman, Factors affecting the use of resources.
5. **Money Management:** Types of income, Budget, its advantages and limitations.  
Planning of Budget  
Means of supplementing family income.
6. **Time:** Steps in making plans, tools in time management—peak loads, work curves, rest periods.
7. **Energy Management:**
  - Introduction
  - Fatigue—types causes and effects of fatigue
  - Principles of work simplification

**SECTION-C**

8. **Circulatory System**  
Blood and its composition  
Coagulation of blood  
Structure and functions of heart.
9. **Digestive System:** Structure and functions of the alimentary canal.

**SECTION-D**

10. Reproduction system—male and female sex organs and their functions.
11. Structure & Functions of lungs, kidney & skin.

**SEMESTER-II****HOME SCIENCE****FAMILY RESOURCE MANAGEMENT  
(PRACTICAL)****Time: 3 Hrs.****Marks: 40**

1. Cleaning of window pane, Refrigerator, Food Processor, Microwave, Gas Burner, Cooking Range.
2. Flower Arrangements– Fresh & Dry Arrangement.
3. Table Manners, Table setting and Napkin Folding.
4. Craft workshop – Glass Painting, pot painting, utility article like bag, magazine holder pot holder etc.
5. To prepare any article using the above techniques.

**Instructions for the Practical Examiner:**

There will be 2 questions from the syllabus.

- a. Fresh flower arrangement-10 marks
- b. Preparation of utility/decorative article-15 marks
- c. Files and schemes -10 marks
- d. Viva -5 marks

**SEMESTER-II**

**COSMETOLOGY (VOCATIONAL)  
(THEORY)**

**Time: 3 hrs.**  
**Periods/Week-6**

**Total Marks: 100**  
**Theory Marks: 40**  
**Practical Marks:60**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**OBJECTIVES**

**To create awareness about the colours & yoga**

**To impart knowledge of Nails and Visual Poise**

**SECTION-A**

**Nail**

- Structure of nail
- Disorder and Disease of the nails

**SECTION-B**

**Colours**

- Basic knowledge of colours: Primary & Secondary.
- Colours, effects and selection acc. To season and occasion.
- Planning of wardrobe and acc. To figure, complexion, occupation and weather.

**SECTION-C**

**Visual Poise**

- Corrective stance, standing, walking, sitting.

**SECTION-D**

**Yoga**

- What is Yoga?
- Role of Yoga for a good health.

**SEMESTER-II****COSMETOLOGY (VOCATIONAL)  
(PRACTICAL)****Time: 4hrs.****Marks: 60****Periods/Week – 6****Note: Paper will be set on the spot by the examiner.****Project file will be evaluated by External Examiner which carries – 10 marks.****1. Nails and Hand care:**

- a) Plain Manicure
- b) Manicure Pedicure
- c) Pedicure Spa
- d) Artificial Spa
- e) Waxing, Threading

**2. Yoga Asanas:**

- a) Guide line for Yoga practice
- b) Asanas:
  - i) Virbhadrasana
  - ii) Tar Asana
  - iii) Dhanurasansa
  - iv) Padmasana
  - v) Bhujangasana

**SEMESTER-II****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****PAPER-A: MEAL MANAGEMENT (THEORY)**

**Time-3 hrs**  
**Pds-4/Week**

**Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**OBJECTIVE:** To enable the students to acquire knowledge of the principles of planning diets for various age groups and socio-economic levels.

**SECTION-A**

1. Balanced diet: Concept of Balanced Diet, Food Groups, Exchange Lists, Definition and Objectives of RDA, RDA for different age groups. (ICMR)
2. Caloric consumption units in planning meals for a family.
3. Meal planning: Introduction and Principles of Meal planning.

**SECTION-B**

4. Physiological changes and nutritional requirement during pregnancy and lactation.
5. Growth & development and nutritional requirement during infancy breast feeding /vs. bottle feeding and weaning, immunization schedule.

**SECTION-C**

6. Growth & development, food habits and nutritional requirement of preschooler, school going and adolescent boy and girl.
7. Nutritional requirement for adult male & female (Sedentary, moderate & heavy worker).
8. Physiological changes during old age and meeting their nutritional requirement.

**SECTION-D**

9. Food Preservation: Definition, Importance & Principles, Causes of food Spoilage.
10. Household methods of preservation – Pickling Sun drying, Jams, Squash.

## SEMESTER-II

### CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)

#### PAPER-B: FOOD MICROBIOLOGY (THEORY)

**Time-3 hrs**  
**Pds-6 Pds/Week**

**Marks: 40**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **OBJECTIVE**

To help students to acquire knowledge about microorganism.  
To develop an understanding of the role of microorganism in environment, industry and Maintenance of health.

#### **COURSE CONTENT**

##### **SECTION-A**

1. Introduction to microbiology and its relevance to everyday life. General Morphology of Microorganism general characteristics of bacteria, fungi, virus, protozoa, algae.
2. Control of microorganism growth curve, effects of environmental factors on growth of Microorganism - Ph. water activity, oxygen availability, temp and others.

##### **SECTION-B**

3. Microbiology of different foods- Spoilage and contamination sources types effect on the Following.
  - a) Cereals and cereal products
  - b) Sugar and Sugar products
  - c) Vegetable and fruit
  - d) Meat and Meat products
  - e) Fish and other sea foods.
  - f) Eggs and poultry
  - g) Milk and Milk products
  - h) Canned foods.

##### **SECTION-C**

4. Environmental microbiology- water, air, soil and sewage other agent of contamination humans, domestics animals, vermins, birds, hormones, antibiotics, chemical and metal contamination.
5. Relevance of Micro Biological standards for food safety.

##### **SECTION-D**

6. Microbial intoxications and infections sources of contamination of foods, toxin production and physiological organism- Symptoms and methods of control.
7. Beneficial effects of micro organism.

#### **References:-**

1. Frazier, W.C., Food Microbiology. 4th Ed, 2006. McGraw Hill, New York.
2. Blackburn, Food Spoilage Microorganism, 3rd edition, 2006, Wood Heal, New

**SEMESTER-II****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****MEAL MANAGEMENT (PRACTICAL)****Time-3 hrs****Marks: 20****Pds- 6 Pds/Week**

**Note:** Paper will be set on the spot by the Examiner Instructions for the Paper Setters:

1. One dish of any cooking method. (5 Marks)
2. Preservation (5 marks)
3. Recipe file. (5 Marks)
4. Viva (5 Marks)

**Practical:**

Planning, preparation and calculation(using exchange list, detail calculation of protein, energy & one essential mineral or vitamin needed for that group) of diets for:

- (a) Infancy-weaning food.
- (b) Pre-school.
- (c) School going child.
- (d) Adolescent girl and boy
- (e) Adult male female (sedentary moderate and heavy worker)
- (f) Pregnant and lactating Women
- (g) Old Age

Preparation of dishes by following methods:

- a) Baking- e.g. Cakes & Biscuits, Continental dishes etc.
- b) Grilling- e.g. Pizza and variation of sandwiches, grilled and tandoori snacks etc.
- c) Sprouting & Salads.
- d) Microwave cooking
- e) Preservation: jams, pickles, squashes, chutneys, etc Daily and occasional cleaning of kitchen equipments, utensils counters, floor and cupboards.

**References:**

1. Guthrie, Helen, Andrews, Introductory Nutrition 6th ed. St. Louts, Times Mirror/Mosby College: 1988.
2. Mudambi S.R. M.V. Rajgopal. Fundamental of foods & Nutrition (2nd ed.) Wily Eastern Ltd. 1990.
3. Swaminathan S: Advanced Text Book on Foods Nutrition, Vol. I, II (2nd ed. Revised & Enlarged) B. app C-1985.
4. Willson, EVAD Principles of Nutrition 4th ed, New York, John Willey & Sons, 1979.

**SEMESTER– II**  
**FASHION DESIGNING AND GARMENT CONSTRUCTION**  
**(VOCATIONAL)**  
**FASHION DESIGNING - II**  
**(THEORY)**

**Time: 3 Hrs.**  
**Period: 3/Week**

**Max Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. (a) Concept of Fashion forecasting- Awareness factor, Measurements and Indicators.  
(b) Sources of Inspiration.

**SECTION-B**

2. Size and structure of Fashion Market
3. Concept of Fashion Merchandising and Visual Merchandising.

**SECTION-C**

4. Promotion of Fashion.
  - (a) Advertising.
  - (b) Publicity.
  - (c) Fashion show.

**SECTION-D**

5. Concept of Fashion Distribution
  - (a) Departmental store
  - (b) Speciality store
  - (c) Chain store
  - (d) Mill showroom
  - (e) Factory Outlets
  - (f) Catalogue Retail
  - (g) Discount store
  - (h) Designer retail store
  - (f) Franchise retail store
  - (j) Boutique

## SEMESTER-II

### FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL) SCALE DRAWING AND GARMENT CONSTRUCTION (PRACTICAL)

**Time: 5 Hrs.**

**Marks: 60**

**Periods/week: 2x6**

#### Instructions for the Paper Setters:

- |  |                  |
|--|------------------|
| 1. Construction of any one garment from Section A. | <b>Marks: 25</b> |
| 2. One question from Part B.                       | <b>Marks: 25</b> |
| 3. File Work.                                      | <b>Marks: 10</b> |

#### SECTION-A

1. Make a Sample of 10 embroidery stitches: Stem, Chain, Cross, Satin, Herringbone, Lazy-daisy, Bullion, French Knots, Fly stitch, Feather stitch.
2. Design, Draft and construct the following:
  - a) Romper/Sun Suit
  - b) Designer Frock (3-6 yrs)
  - c) Sleeves – puff, cap, petal, magyar, kimono.
  - d) Collars – Peter pan , cape, sailor's, baby

#### SECTION-B

3. Using any of the following details drape the fashion figures, preparing 10 sheets in all using Textured backgrounds.
  - (i) Bias/Drapes
  - (ii) Yokes + Waistlines
  - (iii) Bows + Pockets
  - (iv) Drawstrings + Fasteners + Zips
  - (v) Trimming (Tucks, Piping, Embroidery, Tassels, Rouleau, Smocking, Shirring, Appliqué, Patch work).
  - (vi) Tops
  - (vii) Accessories–Bags, Footwear, Jewellery.
4. a) Value Chart, Intensity chart  
b) Basic Design Motifs– Geometrical, Traditional, Abstract.

**SEMESTER-II**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**

**Periods/week: 6 Theory**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Physical Development: Definition, Principles of Physical Development, Physical Growth Cycles
2. Factors affecting Physical Growth Cycles.

**SECTION-B**

3. Motor Development: Definition. Motor Skills (hand and leg skills),
4. Factors affecting Motor skills, Importance of Motor Skills.

**SECTION-C**

5. Language Development: Importance of Speech, Factors affecting Language Development.
6. Emotional Development: Definition: Emotional Development during Infancy & Childhood, Temper Tantrums, Factors affecting Emotional Development.

**SECTION-D**

7. Social Development: Definition, Social Development during Infancy & Childhood, Role of Family & School in socialization of child.
8. Play: Meaning & Importance of Play, Selection of suitable toys & Play Material for the child.

**(PRACTICAL)**

**Time: 3 Hrs**

**Periods/week: 4**

**Marks: 40**

**Instructions for the Paper Setters:**

Question Paper will be set on the spot by the examiner

**Distribution of marks for practical examination**

Written Practical:	10 Marks
Class Performance:	10 Marks
Practical File:	5 Marks
Oral examination:	5 Marks
Preparation of activity material:	10 Marks

**Course Content:**

1. Conduct a Height/ Weight Survey on a sample of 25 School going children assessing their physical development.
2. Conduct a Case Study on a School going Child assessing his Motor Development, Social Development, Emotional Development and Language Development.
3. Prepare an Educational Toy suitable for a pre-school/ school going child.
4. Prepare a toy using house-hold material.
5. Exhibit appropriate safety measures for the child using posters or leaflets

## SEMESTER-II

### FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL) FSQC (3): FOOD PLANT HYGIENE & SANITATION (Theory)

**Time: 3 Hours**

**Max. Marks: 75**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

Importance of personal hygiene of food handler-habits, clothes, illness, education of handler in handling and service. Cleaning agents and disinfectants.

#### **SECTION-B**

Cleaning methods – sterilization, disinfection, heat & chemicals, chemical tests for sanitizer strength.

#### **SECTION-C**

Food sanitation-Principles & methods, control, inspection.

Sanitation in fruits & vegetables industry, cereals industry, dairy industry, meat, egg & poultry units.

#### **SECTION-D**

Control of infestation, rodent control, vector control, Use of pesticides. Hygiene of water used for processing. Planning & implementation of training programmes for health personnel. Waste disposal and treatment.

#### **Recommended Books: -**

1. Principles of Food Sanitation by Marriott, 5th ed., 2006, CBS Publisher, New Delhi.
2. Hobbs, B. C. and R. J. Gilbert Food Poisoning and Food Hygiene, 4th Edition The English Language Book Society and Edward Arnold.
3. Longree K. (1967) Quantity Food Sanitation, Inter Science Publishers, New York.
4. Kawata K. (1963) Environmental Sanitation in India, Lucknow Publisher, New York.
5. Principles of Food Sanitation – II Edition, AVI Book, Van Nostrand Reinhold, New York.

**FSQC (4): FOOD PLANT HYGIENE & SANITATION (PRACTICAL)**

**Max. Marks: 25**

Instructions for the Paper Setters: Question Paper will be set with the mutual consent of Internal and External Examiners at the spot.

**List of Practical**

1. Sterilization of equipments used in the laboratory by using heat and chemicals.
2. Determination of B.O.D
3. Determination of C.O.D
4. Determination of sanitary status of plant equipment.
5. Chlorination of water.
6. To study the bacteriology of water.
7. Chemical analysis of water.

**SEMESTER-II**  
**FINE ARTS**  
**PAPER-A: FINE ARTS (DRAWING & PAINTING)**  
**(THEORY)**

**Time: 3 Hrs.**

**Max. Marks 100**  
**Theory Marks: 50**  
**Practical Marks: 25+25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Mauryan Art:**

What do you mean by Mauryan Pillars?  
Lion Capital of Sarnath  
Bull Capital from Rampurva  
Yakshi from Didarganj  
Yaksha from Parkham

**SECTION-B**

Stupa, Chaityas and Viharas  
Karle and Bhaja Caves  
Bharhut Sculptures:  
Dream of Queen Maya  
Cholakoka Devata

**SECTION-C**

Sanchi Stupa  
Amaravati

**SECTION-D**

**Kushana Period:**

Mathura Art  
(i) Portraits–Kanishka and Vima Kadaphises  
(ii) Seated Buddha from Katra  
(iii) Head of Buddha  
(iv) Gandhara Art  
(v) Standing Bodhisattava

**SEMESTER-II**  
**FINE ARTS**  
**PAPER-B: STILL LIFE STUDY**  
**(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Study different type of still objects. Emphasis should be given to Proportion, Volume, Texture and light and shade.

Number of Objects: Three excluding drapery.

**Medium:** Any Medium

**Size:** ½ Imperial

**SEMESTER-II**  
**FINE ARTS**

**PAPER-C: POSTER / BOOK COVER**  
**(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Prepare creative posters on social awareness and advertisement, study of letter writing in number of colors.

At least 5 works. (3 posters & 2 book covers) will be prepared.

**Medium:** - Poster Colors

**Size:** - ½ Imperial

**Book Cover Design**

Block lettering, Roman Lettering and free hand brush lettering.

To design book cover with illustration title, author's name etc. in any number of colours.

**Medium:** - Poster Colors.

**Size:** - ½ Imperial

**Candidates will submit:–**

5 Sheets of each paper.

Sketch book containing 50 sketches.

## SEMESTER-II

### GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL) (THEORY)

**Time: 3 Hrs.**

**Max. Marks: 100**

**Theory Marks: 50**

**Practical: Marks: 50**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

1. Basic Introduction of Gem Stones with examples:
  - (i) Organic Gems
  - (ii) Inorganic Gems
2. Formation of Gem Stones with examples:
  - (i) Igneous Rocks
  - (ii) Sedimentary Rocks
  - (iii) Metamorphic Rocks

#### **SECTION-B**

1. Introduction to Jewellery:
  - (i) Fine Jewellery
  - (ii) Costume design Jewellery

#### **SECTION-C**

Introduction to Metals, Physical Properties:

- (i) Precious Metals: GOLD, PLATINUM, SILVER
- (ii) Semi-precious Metals: COPPER, IRON

#### **SECTION-D**

1. Nature of Gem Stones.
  - (i) Characteristics of natural gems
  - (ii) Synthetic gem stones
  - (iii) Association of navgrah and gemstones (Gem therapy)
  - (iv) Identification of gem stones by their color and inclusions

**SEMESTER-II**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
INNOVATIVE JEWELLERY DESIGN  
(PRACTICAL)**

**Time: 5 Hours**

**Marks: 50**

**Instruction for the Paper Setters:**

The Paper will be set by the external examiner on the spot out of prescribed syllabus.

**Exercises on:**

- i) Learning basic techniques of jewellery making like jump-ring, threading of beads, etc.
- ii) Different techniques and methods of creating jewellery and accessories like wearable belts, hair accessories using innovative materials like paper, plastic, jute, threads, wires, beads, macramé, etc.

Each student has to submit 20 such pieces of jewellery and accessories at the end of second semester.

## SEMESTER-II

### STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL) (THEORY)

**Time: 3 Hours**

**Max. Marks: 50**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **SECTION-A**

**Press Evaluation:** Evaluation of Press and its role in different Socio-Economic and Political Systems.

**Press Laws in India:** History of press Laws in India, Press Registration Act, Copyright and Defamation, Contempt of Court.

#### **SECTION-B**

**Forms of communication:** Traditional forms of Communication.

- (i) News reporting and editing.
- (ii) Newspaper Layout, News Analysis.
- (iii) Desktop publishing techniques and word Processor.

#### **SECTION-C**

**Radio as a medium:** Introduction to Radio as a medium of Mass Communication and its Characteristics, Radio Development in India.

**T.V. as a medium:** Introduction of T.V. as a medium of Mass Communication and its Characteristics, Development of T.V. in India.

#### **SECTION-D**

**Lens Aberration:** Lens aberration, lens equation, correction of aberrations, ray diagram.

Comparison of human eye with the camera.

Processing of light sensitive chemical, latent image, development, fixing.

#### **Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Hand Book of Journalism & Mass Communication	Mr. Vir Bala Aggarwal
2.	Dark Room Basics... And Beyond	Roger Hicks & Frances Schultz
3.	Basic Photography	John Hedgecoe

**SEMESTER-II**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)  
BASIC PHOTOGRAPHY  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. The paper will be set by the external examiner on the spot considering the syllabus.
2. Creative work on the part of the students is to be emphasized.  
Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. as desired by the examiner.
4. Extra weightage will be given for creative and professional approach.

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by External Examiner (Class- Teacher) as per requirement.

**Course Contents:**

1. Operations.
2. Exposure, tables of lighting, T.C.R.S.C.R. films format: large, medium miniature disc etc.
3. Photograph.
4. Processing B/W film.
5. Contact print.
6. Enlargements B/W.
7. Photo feature.
8. Maintenance of camera.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Hand Book of Journalism & Mass Communication	Mr. Vir Bala Aggarwal
2.	Dark Room Basics... And Beyond	Roger Hicks & Frances Schultz

**SEMESTER-II**

**APPLIED ARTS**

**ART APPRECIATION AND ADVERTISING  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Colour Wheel:** Introduction of colour wheel and its elements - Primary, Secondary, and Tertiary etc.

**Colours of Colour Wheel:** All colours of colour wheel and symbolic value of every colour.

**SECTION-B**

**Types of Colour Scheme:** Monochromatic, Complementary, Analogous, Achromatic and Polychromatic colour scheme with examples.

**SECTION-C**

**Methods and material:** Basic Tools used by Applied Artist according to the projects and importance of tools.

**Need of Applied Artist:** List the points which describe the need of applied artists in today's world and its scope.

**SECTION-D**

**Meaning of Applied Arts:** Definition of Applied Art with detailed introduction and its characteristics.

**Difference between Applied and Fine Arts:** Give difference between both the style of arts including its methods, techniques and etc. with appropriate examples.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	2000 Color Palette Swatches	Graham Davis
2.	Logo Cafe	Page 1 Publisher

**SEMESTER-II  
APPLIED ARTS**

**ILLUSTRATION (SKETCHING) / FASHION FIGURES  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Size: ¼ imperial**

**Medium: Pencil, Charcoal, Pen & Ink, Water Colors and Poster Colors**

**Instructions for the Paper Setters:**

1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Extra weightage will be given for creative and professional approach.

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.

**Course Contents:**

Object drawing, Nature Study, Birds and Animals, Story Based Illustrations, Portraits and Fashion Figures.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Human Figures	Papin Press Publisher
2.	Illustration Now 3	ED Jullis Wiedeall

**SEMESTER-II****SCULPTURE  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Canons of Indian Art (Shadanga),  
Bhangas in Indian Sculptures

**SECTION-B**

Artists (only with reference to one sculpture),  
D.P. Chaudhary: The Triumph of Labour  
Ramkinker Baij: Santal Family

**SECTION-C**

Chintamani Kar: Skating the stag  
Prodosh Das Gupta: Volume in three masses  
Sankho Chaudhary: Standing Figure:

**SECTION-D**

Dhanraj Bhagat: Flute Player  
Balbir Singh Katt: Sun 85

**SEMESTER-II**

**SCULPTURE**  
**(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

1. Relief in Plaster and Terracotta (Total Work: 2)
2. Head Study (Cast in Plaster, Total work 1)
3. Figure Composition in Paper Clay or M-Seal (Total work 2)

**SEMESTER-II****MUSIC (VOCAL)****(THEORY)****Time: 3 Hours****Max. Marks: 100****Theory Marks: 50****Practical Marks: 50****Teaching 3 periods per week****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Historical Development of Indian Music in Vedic Period
2. Definition and explanation of the following Musical Terms: Raga, Thata, Vadi, Samvadi, Meend.

**SECTION-B**

3. Salient features of Time Theory in Indian Music.
4. Contribution and Life Sketches of the following musicians: Pt.Vishnu Narayan Bhathkhande, V.D. Puluskar.

**SECTION-C**

5. Description and notation of the following Ragas: Kalyan, Asavari, Kafi.
6. Description and notation of the following Taals: Kehrva, Ektal

**SECTION-D**

7. Contribution of Bhai Mardana towards Music.
8. Definition and explanation of the following terms in the context of Gurmat Sangeet: Ashtpadi, Ank, Kirtaniya, Pada.

**SEMESTER–II**

**MUSIC (VOCAL)**

**(PRACTICAL)**

**Time: 20 Minutes**

**Marks: 50**

**Teaching 9 periods per week**

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Kalyan, Asavari, Kafi.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. Elementary Knowledge of the following non–detailed Ragas: Jaunpuri, Bhimplasi, Shudh Kalyan.
4. One Shabad from prescribed Ragas.
5. Ability to play five alankars on the Harmonium based on the Thatas of prescribed Ragas in the course.
6. Ability to recite Keharva and Ektal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Recitation of Suhag.
8. Ability to play thekas of Keharva & Dadra on Tabla.

**Books Recommended:-**

1. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
2. Sangeet Shastra Darpan Part – II (Punjabi) published by PunjabiUniversity, Patiala.
3. Sangeet Vishard Sangeet Karayalya, Hathras.
4. Sangeet Shastra Darpan Shanti Govardhan.
5. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
6. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
7. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
8. Sikh Dharam Ate Bhakti Sangeet, Dr. Jitender Kaur.
9. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

## SEMESTER–II

### MUSIC (INSTRUMENTAL) (THEORY)

**Theory: 3 Hrs.**  
**Theory: 3 periods per week**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION–A

1. History of Indian music during Vedic Period.
2. Definition and explanation of the following musical terms:–Bols of mizraab, Maseetkhani Gat, Razakhani Gat, Vadi, Samvadi, Purvang and Uttrang.

#### SECTION–B

3. Classification of Indian Musical Instruments.
4. Life–sketch and contribution of the following musicians: Vidushi Annapurna Devi, Ustad Vilayat Khan.
5. Explain Alap, Jod and Jhalla.

#### SECTION–C

6. Description of all and Notation of any of the following Ragas: Bhairav, Kafi and Bageshwari.
7. Brief knowledge and notation of the following Talas: Kehuva and Rupak.

#### SECTION–D

8. Contribution of Bhai Mardana towards music.
9. Detailed knowledge of the instruments used in Gurmat Sangeet: Rabab, Dilruba and Saranda.

#### **Books Recommended:-**

1. Raag Parichay (Part 1,2) by H.C.Shrivastava.
2. Sangeet Shastra Darpan (Part–1,2) by Shanti Gowardhan.
3. Sangeet Visharad, Sangeet Karyalaya Hathras.
4. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
5. Punjab Ki Sangeet Prampara by Geeta Paintal.
6. Sangeet Subodh by Dr. Davinder Kaur
7. Gurmat Sangeet (Vishesh Ank) Amrit kirtan Trust, Chandigarh.
8. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
9. Sitar Vadan Di Prampara, Publication Bureau :- Punjabi University Patiala.

**SEMESTER-II**  
**MUSIC (INSTRUMENTAL)**

**(PRACTICAL)**

**Time: 20 minutes**

**Marks: 50**

**Practical: 20 Min. for each student**

**Practical: 9 periods per week**

1. Ability to play Ten Alankars of Bhairav Thaata on your Instrument.
2. (i) One Razakhani Gat in each of the following ragas with toras and jhalla:–  
Bhairav, Kafi & Bageshwari  
(ii) Play only gat in other two ragas.
3. One Maseetkhani Gat in any of Ragas prescribed in the course.
4. Ability to recite Kehrva and Rupak Taal by hand in Ekgun and Dugun Layakaries.
5. Ability to play One Dhun based on Folk music of Punjab on any instrument other than Sitar.

**SEMESTER-II**

**INDIAN CLASSICAL DANCE  
(THEORY)**

**Time: 3 Hrs.**  
**Teaching 3 periods per week**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Origin & Development of Bharat Natyam Dance.
2. Essential characteristics of Manipuri Dance.
3. Definition of the following terms: Kavit, Chakardar Paran, Bhaav, Kasak, Masak, Vandana, Gat, Laya.

**SECTION-B**

4. Knowledge of:
  - i) Four neck movements
  - ii) Eight eye glances.
  - iii) Seven eye-brow movements.
  - iv) Nine head movements.
5. Study of Asmyukta Mudras based on Abhinaya Darpan and detailed description of any fifteen with its uses.

**SECTION-C**

6. Write an Essay on:
  - i) Importance of Tal and Lehra in Kathak Dance.
  - ii) Advantages of Dance in Physical fitness.
7. Writing notation of Jhaptal with its:
 

(a) Tatkar with its Thaah, Dugan, Tigun and Chaugun Layakaries		
(b) Thaah	–	1
(c) Tehai	–	1
(d) Amad	–	1
(e) Tora	–	1
(f) Paran	–	1
(g) Chakardar Paran	–	1

### SECTION-D

8. Historical background of the Folk Dances of Rajasthan.
9. Importance of Vocal & Instrumental Music with Dance.
10. Description of following talas with the notation of their Thekas in Thaah, Dugun, Tigun and Chaugun Layakaries.
  - a. Jhaptal
  - b. Ektal
  - c. Dadra

### Books Recommended:-

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.
2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers, New Delhi, 2006.
3. Atihasik Pripeksh Mein Kathak Nritya, Maya Taak, Knishka Publishers, New Delhi, 2005.
4. Nibandh Sangeet, Laxmi Narayan Garg, Sangeet Karyalaya, Hathras, 2004.
5. Kathak Nritya Shiksha Part-1, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP).

**SEMESTER-II**

**INDIAN CLASSICAL DANCE  
(PRACTICAL)**

**Time: 20 Minutes**  
**Teaching 9 periods per week**

**Marks: 50**

**Practical Demonstration of the following:**

**1. Teen Taal its:**

- (a) Tatkar in Thaah, Dugun, Tigun and Chaugun Layakaries.  
 (b) Thaat – 1  
 (c) Tehai – 1  
 (d) Amad – 1  
 (e) Salami – 1  
 (f) Tora – 2  
 (g) Paran – 1  
 (h) Chakardar Paran – 1  
 (i) Kavita – 1

**2. Jhaptal:**

- (a) Tatkar with its Thaah, Dugun, Tigun and Chaugun Layakaries.  
 (b) Thaat – 1  
 (c) Tehai – 1  
 (d) Amad – 1  
 (e) Tora – 1  
 (f) Paran – 1  
 (g) Chakardar Paran – 1

3. Padhant of whole material by hand in all taals mentioned above.  
 4. Recognition of the compositions such as Tehai, Layakaries etc. composed by the Examiner.  
 5. Practice of (Hand movements with Tal).  
 6. (i) Two Gat Nikas in Taal.  
 (ii) One Bhajan  
 7. Ability to demonstrate Panjabi or Rajasthani Folk Dance  
 8. Ability to play Nagma on Harmonium in Teentaal & Jhaptaal.  
 9. Ability to play theka of Dadra Taal on table.

**Books Recommended:-**

1. Kathak Nritya Ka Prichey Subhashni Kapoor Radha Publications, New Delhi, 1997.
2. Kathak Sundaryatmak Shikhakharey Shashtriya Nritya Krishka Publishers, New Delhi, 2005.
4. Atihasik Pripeksh Mein Maya Tak Kathak Nritya Knishka Publishers, New Delhi, 2006.
5. Nibandh Sangeet Laxmi Naryan Garg Sangeet Karyalya, Hathras, 2004.

## SEMESTER–II

### TABLA (THEORY)

**Theory: 3 Hours**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Theory 3 periods per week.**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION–A

- Definitions with full explanations of the following:  
Tukda, Vibhag, Mukhra, Mohra, Tipalli, Gat, Paran, Rela.
- Detailed knowledge and Notations of the following Taalas in Dugun, Tigun and Chaugun  
Laykaris:- Teentaal, Ektaal, Chartal

#### SECTION–B

- The Place of Tabla in Light Music.
- Comparative study of the following Taals :-  
Ektal and Chartal

#### SECTION–C

- Life & Contribution of the following Musicians in the field of Tabla vadan:-  
Pt. Samta Prasad, Ustad Alla Rakha Khan, Pt. Lakshman Singh Seen.
- Comparitive study of Delhi & Ajrara Gharanas of Tabla

#### SECTION–D

- Role of following Instruments in Rhythm:-  
Dholak, Mridang, Khol.
- Detailed Knowledge of Folk Instruments (Percussion) of Punjab.

**SEMESTER-II****TABLA****(PRACTICAL)****Time: 20 Minutes****Marks: 50****Practical: 20 Minutes for each student****Practical: 9 periods per week.**

1. Tals Prescribed: Teental, Ektal, Keharwa.
2. Teental – Peshkar, Two Qaidas with Four Paltas each, One Paran, One Gat, One Chakardar Tihaai.
3. Ektal – Two Qaidas with Four Paltas each, Two Tukra, Two Tihais.
4. Keharwa : Laggis (three), Two Tiharris, Two Mukhra
5. Practice of playing the above Taals with Vocal and Instrumental performance.
6. Ability to play Nagma on Harmonium in Ektal.
7. Tuning of Tabla.
8. Ability to play any folk percussion instrument of Punjab.

**Books Recommended:-**

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Misher Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Mani Mishra, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vashishath, Sangeet Karyalaya Hathras, 1994.
6. Tal Parichay Part –I to IV, Harish Chandra Srivastav, Sangeet Karyalaya, Hathras.
7. Tal Prakash, Bhagwat Saran Sharma, Sangeet Karyalaya, Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita, Chitragupta, Radha Publication, New Delhi, 1992.

**SEMESTER-II**  
**COMPUTER SCIENCE**  
**PROGRAMMING USING C**  
**(THEORY)**

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note for the Candidates:**

The students can use only Non-programmable & Non-storage type calculator.

Practical marks will include the appropriate weightage for proper maintenance of Lab record

**SECTION-A**

Data Representation, Introduction to Number Systems and Character Codes, Flow Charts, Problem Analysis, decision tables, pseudo codes and, algorithms.

**SECTION-B**

**Programming Languages C:**

**Basics of C:** Introduction to C, Applications and Advantages of C, Tokens, Types of Errors

**Data Types:** Basic & Derived Data Types, User Defined Data Types, Declaring and initializing variables.

**Operators and Expressions:** Types of operators (Unary, Binary, Ternary), Precedence and Associativity

**Data I/O Functions:** Types of I/O function, Formatted & Unformatted console I/O Functions

**SECTION-C**

**Control Statements:** Jumping, Branching and Looping-Entry controlled and exit controlled, Advantages/Disadvantages of loops, difference between for, while and do-while.

**Arrays:** Types of Arrays, One Dimensional and Two Dimensional Arrays.

**Strings:** Introduction to Strings and String functions, array of strings.

**SECTION-D**

**Functions:** User Defined & Library Function, Function (Prototype, Declaration, Definition), Methods of passing arguments, local and global functions, Recursion.

**Storage Classes:** Introduction to various storage classes, scope and lifetime of a variable, Storage class specifiers (auto, register, static, extern), advantages and disadvantages.

**Structure and Union:** Introduction to structure and union, pointers with structure.

**SEMESTER–II**

**COMPUTER SCIENCE**

**(PRACTICAL)**

**Marks: 25**

Practical based on Programming in C  
**2 Hours/week**

**Books Suggested:-**

- (i) Programming with C Languages C. Schaum Series.
- (ii) YashwantKanitkar – Let Us C
- (iii) C Programming by Stephen G Kochan

**SEMESTER-II****INFORMATION TECHNOLOGY (VOCATIONAL)****INTERNET & DATA COMMUNICATION  
(THEORY)****Time: 3 Hours****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note for the Candidates:**

The students can use only Non-programmable & Non-storage type calculator.

Practical marks will include the appropriate weightage for proper maintenance of Lab record

**SECTION-A****Internet:**

Internet Applications, Domain Name System, Electronic Mail the World Wide Web, Multimedia Audio, Video, Data corporate File transfer Protocol, Mail transfer Protocol, Telnet, HTTP.

**SECTION-B**

Introduction to HTML, HTML and the World Wide Web, HTML elements, basic structure of elements, creating HTML pages, viewing pages in different browsers, rules for nesting the HTML tags, color and fonts, formatting the body section, creating links, creating external links, creating internal links, adding graphics with image elements, image element attributes, using image as links.

**SECTION-C**

Computer Networks, Network Hardware, Network Categorization-LAN, MAN, WAN, OSI & TCP/IP Reference Models,

**SECTION-D**

Transmission Media, Wireless Transmission, Communication satellites.

**SEMESTER-II**

**INFORMATION TECHNOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**On the basis of Internet & Data Communication**

**Marks: 25**

**Books Recommended:**

1. D.H. Sanders, "Computers Today", McGraw Hill, 1998.
2. Complete Network by Andrew Tanenbaum, 4th Edition, Prentice Hall India.

**SEMESTER-II****COMPUTER MAINTENANCE (VOCATIONAL)  
COMPUTER ORGANIZATION AND ASSEMBLING  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note for the Candidates:**

The students can use only Non-programmable & Non-storage type calculator.  
Practical marks will include the appropriate weightage for proper maintenance of Lab record

**SECTION-A**

**Top Level View of Computer Function & Interconnection:** Computer Component, Functions Interconnection Structure, Bus Interconnection.

**Computer Arithmetic:** ALU, Integer Representation, Integer Arithmetic, Floating Point Representation, Floating Point Arithmetic.

**SECTION-B**

**Basics Computer Organization & Design:** Instruction Codes, Computer Registers. Computer Instructions, Timing and Control, Instruction Cycle, Memory Reference Instruction.

**Micro Programmed Control:** Control Memory, Addressing Sequence, Micro Program Example, Design of Control UNIT.

**SECTION-C**

**CPU:** Stack Organization, Instruction Format, Addressing Modes, Data Transfer and Manipulation, RISC.

**I/O Organization:** Asynchronous Data Transfer, Modes of Transfer, Priority Interrupt DMA, IOP.

**SECTION-D**

**PC Assembling :** Introduction of Motherboards, Power Supply, RAM, Drivers, Keyboard Monitor, Processors and assembling the Computer System.

**References:-**

1. Computer Architecture: Morris Mano-Pearson Education, 3rd Edition, 1993
2. PC Upgrade & Maintenance Guide: Mark Minasi-BPB Publishers, 15th Edition 2004.

**SEMESTER-II****COMPUTER MAINTENANCE (VOCATIONAL)****(PRACTICAL)****List of Practicals Based on Computer Organization and Assembling****Marks: 25**

1. To study the various I/O devices.
2. To study the power supply system.
3. To study the usage of various tools.
4. To study the techniques of soldering and desoldering.
5. Installation of operating systems and software.
6. PC Assembling & Disassembling.

**SEMESTER-II****COMPUTER APPLICATIONS (VOCATIONAL)****PROGRAMMING USING C  
(THEORY)**

**Time: 3 Hrs.  
4 Hours/week**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note for Candidate:**

Attempt five questions in all by selecting one question from each section and the fifth question may be attempted from any sections.

The students can use only Non-programmable & Non-storage type calculator.

Practical marks will include the appropriate weightage for proper maintenance of Lab record

**SECTION-A**

Data Representation, Flow Charts, Problem Analysis, Decision tables, Pseudo codes and Algorithms.

**Programming Using C:**

**Basics of C:** Introduction to C, Applications and Advantages of C, Tokens, Types of Errors

**Data Types:** Basic & Derived Data Types, User Defined Data Types, Declaring and initializing variables.

**SECTION-B**

**Operators and expressions:** Types of operators (Unary, Binary, Ternary), Precedence and Associativity

**Data I/O Functions:** Types of I/O function, Formatted & Unformatted console I/O Functions

**Control Statements:** Jumping, Branching and Looping-Entry controlled and exit controlled, Advantages/Disadvantages of loops, difference between for, while and do-while.

### SECTION-C

**Arrays:** Types of Arrays, Advantages/Disadvantages of arrays. Insertion, Deletion, Searching and sorting operations on array

**Strings:** Introduction to Strings and String functions, array of strings.

**Functions:** User Defined & Library Function, Function (Prototype, Declaration, Definition), Methods of passing arguments, local and global functions, Recursion.

### SECTION-D

**Storage Classes:** Introduction to various storage classes, scope and lifetime of a variable, Storage class specifiers (auto, register, static, extern), advantages and disadvantages.

**Pointers:** Introduction, Advantages/Uses of pointers, Limitations of pointers, Difference between void pointer and Null pointer, Pointer arithmetic, operators not allowed on pointers, Types of Pointer, Passing Pointers to function, concept of pointer to pointer.

**Structure and Union:** Introduction to structure and union, pointers with structure.

#### References:-

1. Programming in C : Schaum Outlines series.
2. C Programming : Stephen G. Kochan.
3. Let Us C : Yashwant Kanitkar

**SEMESTER-II**

**COMPUTER APPLICATIONS (VOCATIONAL)**

**PROGRAMMING USING C**

**(PRACTICAL)**

**Marks: 25**

**2 Hours/week**

**SEMESTER-II****INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)****PROGRAMMING (C++)  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note for the Candidates:**

The students can use only Non-programmable & Non-storage type calculator.

**SECTION-A**

Object Oriented Programming  
Objects & Classes, Constructor & Destructor.

**SECTION-B**

Operator Overloading.  
a) Overloading Unary Operators.  
b) Overloading Binary Operators.  
c) Data Conversion.  
d) Pitfalls Operator Overloading and Conversion.

**SECTION-C****Inheritance**

a) Derived Class and Base Class.  
b) Derived Class Constructors.  
c) Overriding Member Functions.  
d) Inheritance in the English Distances Class, Class Hierarchies.  
e) Public and Private Inheritance.  
f) Level of Inheritance.

**SECTION-D****Polymorphism**

a) Problems with Single Inheritance.  
b) Multiple Inheritance.

**SEMESTER–II**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**(PRACTICAL)**

**C++ Programming**

**Marks: 25**

**Operational Knowledge of C++ Programming**

**Note: Oral and written test will be conducted by External examiner with the help of internal examiner**

**SEMESTER-II****AUTOMOBILE MAINTENANCE (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**  
**Periods/week: 6**

**Theory Marks: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Automotive Engines, Engine fundamentals; Piston-Engine Operation, Engine Types Engine Constructions, Valves and Valves Trains Engine Measurements and performance.

**SECTION-B**

Automotive Engine Systems; Automotive Engine fuels; Automotive fuel exhaust system; Automotive carburetors; Carbureted-Fuel-System service; Diesel Fuel-Injection Systems.

**SECTION-C**

Operation and service; Engine lubrication System: Operation and service.

**SECTION-D**

Engine Cooling system; Cooling System Service.

**(PRACTICAL)****LAB-II**

**Time: 3 Hours**  
**Period/week: 6**

**Marks: 40****Practical:**

1. Carburetor dismantling, cleaning and fault diagnosing.
2. Fuel Injection Pump timing with engine.
3. Injector O/H and Testing.
4. Water Pump cooling system and fault diagnosing.

**References:-**

1. Basic Automobile Engineering Written by CP Nakra (Punjabi Edition) Published by Dhanpat Rai and Sons, Jalandhar, Delhi.
2. Automotive Mechanics William H. Crouse. (English Edition) Donald L. Angkin Published by Tata McGraw-Hill Publishing Company Ltd., New Delhi.

**SEMESTER-II**

**REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**  
**Periods/week: 6**

**Theory Marks: 60**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Air Refrigeration System:** Introduction, Reversed Carnot cycle, Reversed Brayton or Belt Coleman cycle & their C.O.P. Advantages & disadvantages of air.

**Measuring Instruments:** Fundamental & Concepts & Principles Ohm's Law measuring instruments as multimeter, Megger.

**SECTION-B**

**Electrical Aspects of Refrigeration and Air Conditioning:** Concepts of volt, current, power A.C. & D.C. Operations, code & electrical wiring for practice, Instruments for voltage, current & resistance measurements. Single phase motors: Starting, running & Winding current & voltage thermal relays, solenoid valves.

**SECTION-C**

**Electrical Wiring & Electrical Circuit of Following:** Refrigeration, Air Conditioner & Water Cooler. Air Conditioning Cycle, Psychrometric Processes: Sensible cooling, heatix, dehumidification / humidification etc. Thermal comfort, standard conditions & ventilation Requirements.

**SECTION-D**

**Types of air conditioning system Direct Expansion:** chilled Water Window cycle, package air conditioning split units & conts of plants.

**Components of Air Conditioning:** Chillers, coils, blowers, ducts distributor & pumps.

**(PRACTICAL: LAB-II)**

**Time: 3 Hours**  
**Period/week: 6**

**Marks: 40**

**List of Experiments:**

1. To make different types of joints with help of elbows. T's socket etc.
2. To study different types of comp. eg open & sealed type.
3. To study different types of condensers eg. Air cooled & Water cooled.
4. To study the various types of expansion devices. Capillary tube Exp. Values. Thermostatic Exp. value.
5. To study pressure & Temperature measuring instruments.

**List of Reference Books:**

1. Ref & AC S. Domkundwar Dhanpat Rai
2. Ref & AC S.C. Arora —do—
3. A Course in P.L. Batlaney Khanna Ref. & A.C. M. Singh Khurmy Publishers Royal.

**SEMESTER-II**

**RELIGIOUS STUDIES**

(ਧਰਮ ਅਧਿਐਨ)

ਪ੍ਰਮੁੱਖ ਭਾਰਤੀ ਧਰਮ

ਸਮਾਂ 3 ਘੰਟੇ  
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100  
ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**ਸੈਕਸ਼ਨ-ਏ**

**ਵੈਦਿਕ ਧਰਮ**

1. ਆਰੀਅਨ ਦੀ ਜਾਣਕਾਰੀ
2. ਆਰੀਆ ਧਰਮ: ਸੰਖੇਪ ਜਾਣਕਾਰੀ (ਵੇਦ, ਬਲੀ ਤੇ ਯੱਗ)
3. ਵੈਦਿਕ ਦੇਵਤੇ: ਬਹੁ-ਦੇਵਵਾਦ

**ਸੈਕਸ਼ਨ-ਬੀ**

**ਹਿੰਦੂ ਧਰਮ**

1. ਪ੍ਰਮੁੱਖ ਫਿਰਕੇ: ਵੈਸ਼ਨਵ, ਸ਼ੈਵ ਅਤੇ ਸ਼ਾਕਤ (ਜਾਣ-ਪਹਿਚਾਣ ਅਤੇ ਮੁੱਖ ਸਿੱਧਾਂਤ)
2. ਭਗਵਤ ਗੀਤਾ: ਜਾਣ-ਪਹਿਚਾਣ ਅਤੇ ਮੁੱਖ ਸਿੱਧਾਂਤ
3. ਮਹਾਂਭਾਰਤ ਤੇ ਰਾਮਾਇਣ: ਜਾਣ ਪਹਿਚਾਣ ਅਤੇ ਮੁੱਖ ਸਿੱਧਾਂਤ

**ਸੈਕਸ਼ਨ-ਸੀ**

**ਜੈਨ ਧਰਮ**

1. ਤੀਰਥੰਕਰ ਅਤੇ ਭਗਵਾਨ ਮਹਾਂਵੀਰ ਦਾ ਜੀਵਨ
2. ਮੁੱਖ ਸਿੱਧਾਂਤ: ਪੰਜ ਮਹਾਵਰਤ, ਕਰਮ ਅਤੇ ਮੁਕਤੀ
3. ਧਰਮ ਗ੍ਰੰਥ ਅਤੇ ਫਿਰਕੇ

**ਸੈਕਸ਼ਨ-ਡੀ**

**ਬੁੱਧ ਧਰਮ**

1. ਮਹਾਤਮਾ ਬੁੱਧ ਦਾ ਜੀਵਨ
2. ਮੁੱਖ ਸਿੱਧਾਂਤ: ਚਾਰ ਆਰੀਆ ਸੱਚ ਅਤੇ ਪ੍ਰਤੀਤਿੱਯਸਮੁਤਪਾਦ
3. ਧਰਮ ਗ੍ਰੰਥ ਅਤੇ ਫਿਰਕੇ

### ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:

#### English:

1. Bhalla, K.S., *Major Religions in India*, Star Publications, 2005.
2. Bhaskar, V.S., *Faith and Philosophy of Buddhism*, Kalpaz Publications, 2009.
3. *Buddhism*, Punjabi University, Patiala, 1969.
4. David, Neel, Alexander, *Buddhism-Its Doctrines and Its Methods*, B.I. Publications, Grate Britain, 1977.
5. Gopalan, S., *Outlines of Jainism*, Wiley Western Ltd., New Delhi, 1975.
6. Gupta, Das, S.N., *A History of Indian Philosophy*, Vol. I, Cambridge University, Press, New York, 1969.
7. Hiriyanna, H., *Outlines of Indian Philosophy*, George Allen & Cnwin Ltd., London, 1931.
8. Hume, R.E., *The Thirteen Principal Upanishads*, Oxford University Press, New York, 1975.
9. Nathmal, Tatia Muni & Mahandra Kumar, *Aspects of Jain Monasticism: Today and Tomorrow*, Jain Vishva Bharti, Printers and Publishers, New Delhi, 1981.
10. Richard, A.Gard (Ed.), *Buddhism*, Prentice Hall, International, London, 1961,
11. Slevenson, S., *The Heart of Jainism*, Munshi Ram Manohar Lal, New Delhi, 1979.

#### Punjabi:

1. ਅਮੋਲ, ਸ.ਸ, ਧਰਮਾਂ ਦੀ ਮੁੱਢਲੀ ਜਾਣਕਾਰੀ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1999.
2. ਐਮ. ਹਿਰਿਆਨਾ, ਭਾਰਤੀ ਦਰਸ਼ਨ ਦੀ ਰੂਪ-ਰੇਖਾ, ਅਨੁ. ਪ੍ਰਭਕੀਰਤ ਸਿੰਘ, ਯੂਨੀਸਟਾਰ, ਚੰਡੀਗੜ੍ਹ, 2014.
3. ਗੁਪਤਾ, ਸ਼ਾਂਤੀ ਨਾਥ, ਭਾਰਤੀ ਦਰਸ਼ਨ, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ, 1974.
4. ਨਿਰਾਕਾਰੀ, ਆਰ.ਡੀ., ਭਾਰਤੀ ਦਰਸ਼ਨ, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ, 1994.
5. ਡਾ.ਹਰਪਾਲ ਸਿੰਘ ਪੰਨੂ, ਭਾਰਤ ਦੇ ਪੁਰਾਤਨ ਧਰਮ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

#### Hindi:

1. ਸਿਨਹਾ, ਹਰੇਂਦ੍ਰ ਪ੍ਰਸਾਦ, ਭਾਰਤੀਯ ਦਰਸ਼ਨ ਕੀ ਰੂਪ ਰੇਖਾ, ਮੋਤੀਲਾਲ ਬਨਾਰਸੀ ਦਾਸ, ਦਿੱਲੀ, 1963.
2. ਮਿਸ਼ਰ, ਉਮੇਸ਼ (ਡਾ.), ਭਾਰਤੀਯ ਦਰਸ਼ਨ, ਉੱਤਰ ਪ੍ਰਦੇਸ਼, ਹਿੰਦੀ ਸੰਸਥਾਨ, ਲਖਨਊ, 2003.
3. ਰਾਧਾ ਕ੍ਰਿਸ਼ਨਨ, ਭਾਰਤੀਯ ਦਰਸ਼ਨ, ਭਾਗ ਪਹਿਲਾ, ਰਾਜਪਾਲ ਐਂਡ ਸੰਨਜ਼, ਦਿੱਲੀ, 1973.

**SEMESTER-II**  
**PHILOSOPHY**  
**ETHICS: WESTERN AND INDIAN**

**Time: 3 Hours**

**Max. Marks: 100**

**Lectures to be delivered: 6 per week**

**Pass Marks 35 %**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Definition, Nature, Scope and Utility of Ethics.
2. Relation of Ethics with Religion and Science

**SECTION-B**

1. Plato: Virtues.
2. Kant: Categorical Imperative, Good Will.
3. Bentham, Mill: Utilitarianism

**SECTION-C**

1. Bhagavad Gita: Nishkama Karma.
2. Guru Granth Sahib: Truth, Contentment and Hukam.

**SECTION-D**

1. Buddhism: Four Noble Truths and Eight-Fold Path
2. Yoga Philosophy: Ashtangyoga
3. Jainism: Tri Ratna and Kaivalya.

### Recommended Readings:-

#### English Books:-

1. Avtar Singh, *Ethics of the Sikhs*, Punjabi University, Patiala, 1970.
2. Balbir Singh, *Principles of Ethics*, S. Nagin, Jalandhar, 1978.
3. Duignan, Brian, *The History of Western Ethics*, Britannica Educational Pub., New York, 2011.
4. Gupta, S.N. Das, *A History of Indian Philosophy*, Vol. II, George Allen and Unwin, London, 1971.
5. Intyre, Alasdair C Mac, *A Short History of Ethics*, Routledge, 1998.
6. Joshi, H.M, *Traditional and Contemporary Ethics; Western and Indian*, Bharatiya Vidya Prakashan, Delhi, 2000.
7. Kaveeshwar G.W., *The Ethics of the Gita*, Motilal Banarsidass, Delhi, 1971.
8. Mackenzie, J.S., *Manual of Ethics*, Hinds, Noble & Eldridge, New York, 2005.
9. Norman Richard, *The Moral Philosophers: An Introduction to Ethics*, Oxford University Press, Oxford, 1998.
10. Tiwari, Kedar Nath, *Classical Indian Ethical Thoughts: A Philosophical Study of Hindu, Jaina and Buddha Morals*, Motilal Banarsidass, Delhi, 1998.
11. Vasu, Srisa Chandra, *An Introduction to the Yoga Philosophy*, AMS Press, New York, 1974.
12. William Lillies, *Introduction to Ethics*, Methuen, London, 2001.

#### Punjabi Books:-

1. ਹਉਰਾ, ਕੁਲਦੀਪ ਸਿੰਘ, *ਸਿੱਖ ਨੈਤਿਕਤਾ ਦੀ ਰੂਪ ਰੇਖਾ*, ਸਿਮਰ ਸਾਹਿਤ ਸਦਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਗੁਪਤਾ, ਸ਼ਾਂਤੀ ਨਾਥ, *ਭਾਰਤੀ ਦਰਸ਼ਨ*, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ, 1994.
3. ਚੰਦ, ਰਣਧੀਰ ਸਿੰਘ, *ਯੋਗ ਦਰਸ਼ਨ*, ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਆਪਰੇਟਿਵ ਸੋਸਾਇਟੀ, ਲੁਧਿਆਣਾ।
4. ਨਿਰਾਕਾਰੀ, ਆਰ.ਡੀ., *ਭਾਰਤੀ ਦਰਸ਼ਨ*, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ, 1994.

#### Hindi Books:-

1. ਵਰਮਾ, ਵੇਦ ਪ੍ਰਕਾਸ਼, *ਨੀਤੀ ਸ਼ਾਸਤਰ*, ਅਲਾਇਡ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ, 1977.

**SEMESTER-II**  
**ZOOLOGY**

Paper	Maximum Marks		Hours of Teaching	
	Theory Marks	Practical Marks	Theory	Practical
			<b>Credit Hrs. per Week (60 min. each)</b>	
ZOO-IIA (Ecology)	35	—	3 Hrs	—
ZOO-IIB (Biodiversity-II)	35	—	3 Hrs	—
PRACTICAL-II (RELATED TO ZOO-IIA and ZOO-IIB)	—	30	—	4½ Hrs

**SEMESTER-II**

**ZOOLOGY**  
**ZOO-II A: ECOLOGY**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Ecology: Definition, Subdivisions and scope of ecology.  
Ecosystem: Components, ecological energetics, food web, major ecosystems of the world.  
Ecological factors: Temperature, light and soil as ecological factors.

**SECTION-B**

Nutrients: Biogeochemical cycles and concept of limiting factors.  
Ecological Adaptations: Morphological, physiological and behavioural adaptations in animals in different habitats.

**SECTION-C**

Population: Characteristics and regulations of population. Inter and Intra Specific relationship: Competition, Predation, Parasitism, Commensalism and Mutualism.  
Biotic community: Characteristics, ecological succession, ecological niche.

**SECTION-D**

Natural resources: Renewable and nonrenewable natural resources and their conservations.  
Environmental Issues: Causes, impact and control of environmental pollution.

**Suggested Readings:-**

1. Anderwartha, H.G. and Birch, L. C. (1970), The distribution and abundance of animals, University of Chicago Press, Chicago London.
2. Beeby, A. (1992), Applying Ecology, Chapman and Hall Madras.
3. Begon, M., Harper J. L. and Townsend, C. R. (1995), Ecology – Individuals, populations and communities, Blackwell Science, Cambridge UK.
4. Brewer, R. (1994), The science of Ecology, Saunders College of Publishing, New York.
5. Chapman, J. L. and Resis, M. J. (1995), Ecology- Principles and applications, Cambridge University Press, Cambridge UK.
6. Kaeighs, S. C. (1974), Ecology with special references to animal and Man, Prentice Hall Inc.
7. Kormondy, E.J. (1975), Concept of Ecology, Englewood Cliffs, N.J. Prentice Hall Inc.
8. Krebs C.J. (1982), Ecology, Harper & Row, New York.
9. Putmann, R. J. and Wratten, S. D. (1984), Principles of Ecology, Crown Helm, London.

**SEMESTER-II**  
**ZOOLOGY**

**ZOO-II B: BIODIVERSITY-II**  
**(ARTHROPODA TO HEMICHORDATA)**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Arthropoda:** Type study- *Periplaneta americana* (Cockroach),  
Social organizations in insects (Honey bee and Termite)

**SECTION-B**

**Mollusca:** Type study- *Pila globosa*, Tortion, Pearl formation

**SECTION-C**

**Echinodermata:** Type study - *Asterias* (Star fish), Study of Echinoderm larvae

**SECTION-D**

**Hemichordata:** Type study - *Balanoglossus* (External characters only). Affinities of Hemichordates with Non-Chordates and Chordates

**Suggested Readings:-**

1. Barnes, R.D. (1999), Invertebrate Zoology. W.B. Saunder, Philadelphia.
2. Dhama, P.S. & Dhama, J. K., Invertebrates, R. Chand & Co., New Delhi, 2001.
3. Barth, R. H. and Broshears, R. E (1982), The Invertebrate world. Holt Saunder, Japan.
4. Brusca, R. C. and Brusca, G. J. (2003), Invertebrates (2<sup>nd</sup> ed), Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts.
5. Engemann, J. G. and Hegner, R. W. (1981), Invertebrate Zoology (3rd ed), Macmillan, New York.
6. Gardiner, M. S. (1972), The Biology of Invertebrates, McGraw Hill, New York.
7. Meglitsch, P. A. and Schran, F. R. (1991), Invertebrate Zoology (3<sup>rd</sup> ed), Oxford University Press, New York.
8. Pechenik, A. Jan. (2000), Biology of the invertebrates, (4<sup>th</sup> ed), McGraw Hill Book Co. Singapore.

## SEMESTER-II

### ZOOLOGY

#### PRACTICAL-II (RELATED TO ZOO-II A and ZOO-II B)

**Time: 3hrs.**

**Marks: 30**

#### **Important Note for Practical:-**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines (D.O.No. F. 14-6/2014(CPP-II) dated 01-08-2014) the dissections should not be conducted. The guidelines on this issue are available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)

#### **1. Classification up to orders with ecological notes and economic importance (if any) of the following animals :**

- A. Arthropoda : *Peripatus*, *Palaemon* (prawn), *Lobster*, *Cancer* (crab), *Sacculina*, *Eupagurus* (hermit Crab), *Lepas*, *Balanus*, *Cyclops*, *Daphnia*, *Lepisma*, *Periplaneta* (cockroach), *Schistocerca* (locust), *Poeciloceris* (ak grasshopper), *Gryllus* (cricket), *Mantis* (praying mantis), *Cicada*, *Forficula* (earwig), Dragonfly, Termite queen, Bug, Moth, Beetles, Polistes, (wasp), *Apis* (honey bee), *Bombyx*, *Pediculus* (body louse) Millipede and Centipede, *Palamnaeus* (scorpion), *Aranea* (spider) and *Limulus* (king Crab).
- B. Mollusca: *Anodonta*, *Mytilus*, *Ostrea*, *Cardium*, *Pholas*, *Solen* (razor fish), *Pecten*, *Haliotis*, *Patella*, *Aplysia*, *Doris*, *Limax*, *Loligo*, *Sepia*, *Octopus*, *Nautilus* shell (Complete and T.S.), *Chiton*, *Dentalium*.
- C. Echinodermata: *Asterias*, *Echinus* *Ophiothrix*, *Antedon*.
- D. Hemichordata: *Balanoglossus*.

**2. Study of the following permanent stained preparations:**

A. Trachea and mouth parts of Insects

B. Radula and osphradium of *Pila*

C. T.S. Star fish (Arm).

3. **Demonstration of** digestive and nervous systems of *Periplaneta* (cockroach) with the help of charts/models/videos.

**4. Ecology:**

A. Study of animal adaptations with the help of specimens, charts and models.

B. Study of abiotic and biotic components of an ecosystem.

C. Study of different types of nests of birds.

D. Study and preparation of Zoogeographical charts.

**5. Assignment**

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of practical Examination:-**

- |    |   |   |
|----|---|---|
| 1. | Identify and classify the specimens upto order. Write a note on their habit, habitat, special features and economic importance. | 6 |
| 2. | Draw a well labelled sketch of the given system of the animal & explain it to the examiner.                                     | 4 |
| 3. | Identify the slides/models and give two reasons for identification.   | 4 |
| 4. | Identify the adaptive feature/nest.   | 4 |
| 5. | Mark the distribution of animals of a realm on the map.   | 4 |
| 6. | Assignment  | 3 |
| 7. | Viva-voce & Practical file.   | 5 |

**SEMESTER-II****MICROBIOLOGY**  
**BASIC FOOD MICROBIOLOGY**  
**(THEORY)****Time: 3hrs****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Food as a substrate for microorganisms, intrinsic and extrinsic factors affecting the growth of various microorganisms in foods. Microorganisms important in food microbiology—bacteria, yeasts and molds, sources of contamination in foods.

**SECTION-B**

2. Fermented foods, origin of fermentation as a method of preparing indigenous foods, bread, dosa idli, warri, temper miso.

**SECTION-C**

3. Principles of food preservation and spoilage, asepsis, anaerobic conditions, aseptic packaging, preservation methods, high temperature, low temperature, drying, chemical preservatives.

**SECTION-D**

4. Spoilage of various milk and milk products, cereal and cereal products, vegetable and fruits, meat and meat products, canned foods. Food poisoning and food infection. *Staphylococcal*, *Clostridium* and *Salmonella* intoxications.

**Books Recommended:-**

1. Frazier. W.C. and Westhoff, D.C. 1978, Food Microbiology, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Banwart, G.J., 1987, Basic Food Microbiology, CBS Publishers and Distributions, New Delhi.
3. Powar, C.B. and Dagniwala, H.F. 1992. General Microbiology Volume II. Himalaya Publishing House, New Delhi.

**SEMESTER-II****MICROBIOLOGY  
(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. To enumerate the total microbial cells in a suspension by serial dilution and pour plating.
2. To enumerate the total bacteria in milk by direct microscopic count.
3. To measure the size of microbial cells by ocular micrometer.
4. To study the morphology of bacteria, yeasts and molds.
5. To check the bacteriological quality of raw milk by methylene blue reduction test.

**SEMESTER-II****INDUSTRIAL MICROBIOLOGY (VOCATIONAL)  
INTRODUCTION TO FOOD MICROBIOLOGY  
(THEORY)****Time: 3hrs****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Food as a substrate for microorganisms, intrinsic and extrinsic factors affecting the growth of various microorganisms in foods.

**SECTION-B**

2. Microorganisms important in food microbiology: bacteria, yeast and molds, sources of contamination in foods.
3. Fermented foods, fermentation as a method of preparing indigenous foods, bread, dosa idli, warri, soy sauce, miso.

**SECTION-C**

4. Principles of food preservation and spoilage, asepsis, anaerobic conditions, aseptic packaging, preservation methods, high temperature, low temperature, drying, irradiation and chemical preservatives.

**SECTION-D**

5. Spoilage of various milk and milk products, cereal and cereal products, vegetable and fruits, eggs, canned foods and meat and meat products.
6. Food poisoning and food infection. Staphylococcal Chlostridium and Salmonella intoxication.

**Books Recommended:-**

1. Jay, J.M. 1986, Modern Food Microbiology, 3rd edition, an Nostrand Reinhold.
2. Banwari, G.J., 1989, Basic Food Microbiology, CBS Publishers and Distributions, New Delhi.
3. Frazier, W.C. and Westhoff, D.C. 1995, Food Microbiology, Tata McGraw Hill Publishing Co., Ltd., New Delhi.

**SEMESTER-II****INDUSTRIAL MICROBIOLOGY (VOCATIONAL)  
(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. To study the practical growth curve of bacteria
2. To enumerate the total microbial cells in a suspension by the serial dilution and pour plating.
3. To enumerate the total bacteria in milk by direct microscopic count.
4. To measure the size of microbial cell by ocular micrometer.
5. To study the morphology of bacteria, yeast and molds.
6. To check the bacteriological quality of raw milk of methylene blue reduction test.

**SEMESTER-II****MICROBIAL & FOOD TECHNOLOGY  
FUNDAMENTALS OF FOOD PROCESSING AND TECHNOLOGY  
(THEORY)****Time: 3 Hrs.****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Cereal & Cereal Products:** Structure and composition of wheat and rice, milling of wheat, shelling and polishing rice, Preparation of bread by straight dough, sponge dough & continuous methods.

**Oil & Fats Technology:** Rendering Pressing, Solvent extraction, refining & hydrogenation.

**SECTION-B**

**Milk & Milk Products Technology:** Standardized milk, Toned milk, Double toned milk Clarification, Pasteurization & Homogenization of milk. Manufacturing of procured cheese, cheddar cheese, Fermented milks (Cultured butter-milk, yogurt, Acidophilus milk, Kefir & Kumiss).

**SECTION-C**

**Fruit & Vegetable Technology:** Canning, Preparation of vinegar, Jam, Jellies & Pickles.  
**Egg, Meat & Fish Technology:** Preservation methods of egg, spray drying of egg. Tenderization and curing of meat, dressing of poultry, Rigor mortis of fish, preservation methods of fish.

**SECTION-D**

**Spices & Flavour Technology:** List of major & minor spices of India, Traditional & Cryo milling of spices. Preparation of oleoresins, essential oils, spice decoctions & encapsulated spices.

**Food Packaging Technology:** Types of containers, (Primary, Secondary & Tertiary) Form-fill-seal packaging, Aseptic packaging Food packaging materials & forms glass containers, laminates, metal cans & Retortable pouches.

**Books:-**

1. Lal G., Siddappa, G.S. & Tandon G.L. Preservation of fruits & vegetables. Publication & Information Division. I.C.A.R., New Delhi.
2. Desrosier N.W. & Desrosier J.N. The technology of food preservation, 4th edition, CBS Publishers & Distributors.
3. Sukumar De. Outlines of Dairy Technology. Oxford University Press.
4. Potter N.N. & Hotchkiss J.H. Food Science, 5th edition CBS Publishers & Distributors.
5. Manay N.S. & Shadaksharaswamy M. Foods Facts & Principles. New Age International Ltd., Publishers.
6. Kent, N.L. Technology of Cereal Processing.

**SEMESTER-II****MICROBIAL & FOOD TECHNOLOGY  
FUNDAMENTAL AND FOOD MICROBIOLOGY  
(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. To enumerate the total number of bacteria by direct microscopic count.
2. To measure the size of microbial cell by ocular micrometer.
3. To study the morphology of bacteria, yeast and molds.
4. To check the bacteriological quality of raw milk of methylene blue reduction test.
5. To study the typical growth curve of Bacteria.

**SEMESTER-II****BOTANY**  
**PAPER-II A: CELL BIOLOGY**  
**(THEORY)****Time: 3 Hrs.****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Structure and Function of Nucleus;** Ultrastructure; nuclear membrane; nucleolus.

**SECTION-B**

**Extra nuclear Genome:** Presence and function of mitochondrial and plastid DNA; plasmids. structure and function of other organelles: Golgi bodies, ER, Peroxisomes, Vacuoles

**SECTION-C**

**Chromosome Organization:** Morphology; centromere and telomere; chromosome alterations; deletions, duplications, translocations, inversions; variations in chromosome number, Aneuploidy, polyploidy; sex chromosomes.

**SECTION-D**

**The Cell Envelopes:** Plasma membrane; bilayer lipid structure; functions; the cell wall.

**Suggested Readings:-**

1. Gupta, P.K. (2013). A Text-book of Cell and Molecular Biology (3rd edition). Rastogi Publications, Meerut, India
2. Johnson, A., Raff, L. and Walter, R. (2008). Molecular Biology of the Cell (5th Edition). Taylor and Francis Group, USA.
3. Karp, G. (2013). Cell and Molecular Biology: Concepts and Experiments (7th Edition). Wiley Publishers, USA.
4. Kleinsmith, L.J. and Kish, V.M. (1995). Principles of Cell and Molecular Biology (2<sup>nd</sup> edition). Harper Collins College Publishers, New York, USA.
5. Lodish, H., Berk, A., Kaiser, C. A., Krieger, M., Bretscher, A. and Ploegh, H. (2016). Molecular Cell Biology, W.H. Freeman & Co., New York, USA.
6. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics (5th Edition). John Wiley and Sons Inc., U.S.A.

**SEMESTER-II****BOTANY**  
**PAPER-II B: GENETICS**  
**(THEORY)****Time: 3 Hrs.****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**DNA the Genetic Material:** DNA structure; replication; DNA-protein interaction; the nucleosome model; genetic code; satellite and repetitive DNA.

**SECTION-B**

**Cell Division:** Mitosis; meiosis. Genetic Inheritance: Mendelism; laws of segregation and independent assortment; linkage analysis; allelic and non-allelic interactions.

**SECTION-C**

**Gene expression:** Structure of gene; transfer of genetic information; transcription, translation, protein synthesis, tRNA; ribosomes; regulation of gene expression in prokaryotes and eukaryotes; proteins, 1D, 2D, and 3D structure.

**SECTION-D**

**Genetic Variations:** Mutations, spontaneous and induced; transposable genetic elements; DNA, damage and repair.

**Suggested Readings:-**

1. Brown, T.A. (2011). Genetics: A Molecular Approach (3rd Edition). BIOS Scientific Publishers, UK.
2. Fletcher, H., Hickey, I. and Winter, P. (2010). Instant Notes on Genetics (3rd edition) Taylor and Francis Group, USA.
3. Gardner, E.J., Simmons, M.J. and Snustad, D.P. (2012). Principles of Genetics (8th Edition). Wiley Sons, USA.
4. Gupta, P.K. (2016). Cell and Molecular Biology, Rastogi Publications, Meerut, India.
5. Kleinsmith, L.J. and Kish, V.M. (1995). Principles of Cell and Molecular Biology (2<sup>nd</sup> Edition). Harper Collins College Publishers, New York, USA.
6. Krebs, B. E., Goldstein, E.S. and Kilpatrick, S.T. (2011). Lewins Genes X. Jones and Bartlett Publishers, LLC, UK.
7. Lodish, H., Berk, A., Kaiser, C. A., Krieger, M., Bretscher, A. and ploegh, H. (2016). Molecular Cell Biology, W.H. Freeman & Co., New York, USA.
8. Singh, B.D. (2007). Molecular Genetics. Kalyani Publishers, India.
9. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics (5th Edition). John Wiley and Sons Inc., U.S.A.

## **SEMESTER-II**

### **BOTANY PRACTICAL-II (BASED ON PAPERS-II A AND II B)**

**Practical Hours: 4½ Hours/week**

**Marks: 30**

#### **Suggested Laboratory Exercises**

1. Teachers may select plants/material available in their locality/institutions.
2. To study cell structure from onion leaf peels; demonstration of staining and mounting methods.
3. Comparative study of cell structure in onion cells, Hydrilla and Spirogyra. Study of cyclosis in Tradescantia Staminal Cells.
4. Study of plastids to examine pigment distribution in plants (e.g. Cassia, Lycopersicon and Capsicum).
4. Examination of electron micrographs of eukaryotic cells with special reference to organelles.
5. Study of electron micrographs of viruses, bacteria, cyanobacteria and eukaryotic cells for comparative cellular organization.
6. Examination of various stages of mitosis and meiosis using appropriate plant material (e.g. onion root tips, onion flower buds).
7. Preparation of karyotypes from dividing root tip cells and pollen grains.
8. Cytological examination of special types of chromosomes: bar body, lampbrush and polytene chromosomes.
9. Working out the laws of inheritance using seed mixtures.
10. Working out the mode of inheritance of linked genes from test cross and/or F2 data.

#### **Suggested Readings:-**

1. Fukui, K. and Nakayama, S. 1996. Plant Chromosomes; Laboratory Methods, CRC Press, Boca Raton, Florida.
2. Gunning, B.E.S. and Steer, M.W. 1996. Plant Cell Biology; Structure and Function, Jones and Barlett Publishers, Boston, Massachusetts.
3. Harns, N. and Oparka, K.J. 1994. Plant Cell Biology, A Practical Approach. IRL Press, at Oxford University Press, Oxford, UK.
4. Sharma, A.K. and Sharma, A. 1999. Plant Chromosomes; Analysis. Manipulation and Engineering, Harwood Academic Publishers, Australia.
5. Plopper, G. (2016). Principles of Cell Biology. Jones and Barnett Learning, Boston, Massachusetts.

**SEMESTER-II****BIOINFORMATICS (VOCATIONAL)****BASIC MATHEMATICS, BIOSTATISTICS & DATABASE MANAGEMENT SYSTEMS  
(THEORY)**

**Time: 3 Hrs.**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Matrices and Vectors:** Matrix Algebra, -Addition, Subtraction, Multiplication, Transpose inverse and conjugate of a Matrix. Determinants (**upto third order**), Vectors in space, Addition, Subtraction Dot, Cross and Scalar triple product.

**Functions:** Concept of functions, its domain and range, only graphs of some well known functions such as linear, exponential, sine and cos.

**Coordinate Geometry:** Equation of a line, circle.

**Differentiation:** Limits of functions, Complete Differentials (Simple examples), Partial differentials of functions with one variable.

**Integration:** Indefinite (**Simple examples**) and Introduction to Definite Integral.

**Differential Equation:** Ordinary Differential Equation of 1st order & 1st degree, Partial Differential equations.

**SECTION-B**

**Elementary Statistics:** The mean, median, mode, standard deviation, variance, covariance of data.

**Probability:** Basic concepts, sample space and events, use of counting method in probability, addition law, sample problems involving the estimation of probabilities, Conditional Probability and Independent Events, Bayes theorem.

**Introduction to Correlation & Regression:** Scatter diagram, Linear correlation, linear regression lines.

**Probability Distributions:** Bernoulli, Binomial, Poisson and Normal Distributions.

### SECTION-C

**Introduction to DBMS:** Data, Information, Knowledge, Database approach, Characteristics of Database approach, Database System Concept, Components of Database System, DBMS, Database languages, DBMS Architecture and data Independence.

**Data Models:** ER Model Concepts, Notation for ER Diagram, Relational Model Concepts, relational Model Constraints.

Normalization and its forms like 1NF, 2NF, 3NF, BCNF, 4NF and 5NF. Functional Dependencies.

### SECTION-D

**SQL:** Introduction, DDL statements, DML statements, TCL statements, Queries in SQL: Nested Queries, Single row sub queries, multiple row sub queries, Multiple Column sub queries, views in SQL.

**Introduction to PL/SQL:** Basic Elements of PL/SQL, Procedures: Local and stored procedures, Functions: Local functions, Return statement and stored functions. Difference b/w procedures and functions.

#### Recommended Books:-

1. Elhance D.N. (1984). Fundamentals of Statistics. *Kitab Mahal, Allahabad.*
2. Mendenhall W. and Sincich T. (1995). Statistics for Engineering and Sciences (IVth Edition). *Prentice Hall.* And sciences (IVth Edition). Prentice Hall.
3. Gupta S.P. (2000). Statistical Methods. *Sultan Chand and Company, New Delhi.*
4. Kapoor V.K. and Gupta S.C. (2000). Fundamentals of Mathematical Statistics. *Sultan Chand and Company, New Delhi.*
5. J. Crawshaw and J Chamber (2002). Advanced Level Statistics, 4<sup>th</sup> Edition, *Melson Thornes.*
6. Spiegel M.R. (1974). Theory and Problems of Advanced Calculus. *Tata McGraw Hill Company Ltd., New Delhi.*
7. Edward Batschelet (1992) "Introduction to Mathematics for Life Sciences", 3rd Edition, *Springer-Verlag.*
8. Brown R. (1994). Theory and Problems of Differential Equations. *Tata McGraw Hill Company Ltd., New Delhi.*
9. Kapoor V.K. and Gupta S.C. (2000) Fundamentals of Mathematical Statistics. *Sultan Chand and Company, New Delhi*
10. Nell and D. Qualing (2002) Pure Mathematics (Advanced Level Mathematics) Vol. 1, 2 & 3, *Cambridge University Press.*
11. Fundamentals of Database Systems by Elmasari and Navathe, Prentice Hall (India), 2001.
12. Fundamentals of DBMS: Anurag Gupta, Nishan Singh Dhillon, Jagmohan Magho, Anshuman Sharma.
13. Data Mining Concepts and Techniques-Jiawei Han, Micheline Kamber, *Morgan Kaufmann Publisher, 2001.*

**SEMESTER-II****BIOINFORMATICS (VOCATIONAL)****PAPER-B: LAB IN DATABASE MANAGEMENT SYSTEMS  
(PRACTICAL)****Time: 3 Hrs****Marks: 25****Credit Hours: 4½**

Exercise to understand RDBMS: Oracle, SQL etc.

Usage of important Commands/instructions

DDL statements

DML statements

TCL statements

Queries in SQL

Operators

Functions

Views

Basic elements of PL/SQL

Procedures

Functions

**SEMESTER-II****BIOTECHNOLOGY (VOCATIONAL)****GENETICS AND BIOCHEMISTRY  
(THEORY)****Time: 3 Hrs.****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Mendelian laws of inheritance; gene interactions. Sex determination in plants and animals, sex-linkage, non-disjunction as a proof of chromosomal theory of inheritance. Linkage; mapping genes; Chromosomes: chemical composition; structural organization of chromatids, centromeres, telomeres, chromatin, nucleosome organisation; eu- and heterochromatin; special chromosomes (e.g., polytene and lampbrush chromosomes; banding patterns in human chromosomes.

**SECTION-B**

Structural and numerical aberration involving chromosomes; Hereditary defects- Klinefelter, Turner, Cri-du-Chat and Down syndromes. Mutations-spontaneous and induced; chemical and physical mutagens; induced mutations in plants, animals and microbes for economic benefit of man. Conjugation, transduction, transformation, isolation of auxotrophs, replica plating techniques. Extrachromosomal inheritance, mitochondrial and chloroplast genetic systems. Population genetics: Hardy-Weinberg equilibrium, gene and genotypic frequencies.

### SECTION-C

Nature of biological material; Suitability of organic compounds for generation of structure, storage of energy and information; Hydrophilic and hydrophobic groups in biological molecules.

- i) Carbohydrates, peptidoglycans, polysaccharides and membrane lipids.
- ii) The signal molecules: Hormones.

The repeating UNITS in nucleic acids and conformation of DNA (A, B & Z). Proteins, Helicity, bending, looping, pleats, salt bridges etc. and their determinants.

### SECTION-D

The basis for intermolecular interaction e.g. enzyme-substrate. Protein and nonprotein enzymes. Kinetics of enzyme catalysed reactions (first order), Enzyme inhibition. Enzymes and their applications in industry. Enzymes in food processing, medicine, diagnostics and production of new compounds. Enzymes as research tools-ELISA methods, modifications of biological compounds with the help of enzymes.

#### **Books Recommended:**

1. De-Robertis, F.D.P. and De-Robertis Jr. E.M.F. (1991), Cell and Molecular Biology, Saunders, Philadelphia.
2. Maloy, S.R. Crown, J.E. and Freifelder, D. (1994), Microbial Genetics: 2nd Edition, Jones & Bartlett Publishers.
3. Hartl. D.L. (1994), Genetics: 3rd Edition, Jones & Bartlett Publishers.
4. Lodish, H., Baltimore, D., Berk, A., Zipursky, S.L., Matsudaria, P and Darnell, J. (1995), Molecular Cell Biology, 3rd Edition, Scientific American Books Inc.
5. Brooker, R.J. (1999), Genetics: Analysis and Principles, Jim Green.
6. Antherly A.G., Girton. J.R. (1999). The Science of Genetics. Harcourt College Publishers.
7. Freifelder, D. (2000), Microbial Genetics, Narosa Publishing House.
8. Geoffrey, M. (2000), The Cell: A Molecular approach, 2<sup>nd</sup> Edition, ASM Press.
9. Hartl, D.L., Jones E.W., (2001). Genetics: Analysis of Genes & Genomes, 5th Edition Jones & Bartlett Publishers.

**SEMESTER II**  
**BIOTECHNOLOGY (VOCATIONAL)**  
**(PRACTICAL)**

**Time: 3 Hours**

**Marks: 25**

**Credit Hours: 6**

**I-Biochemical Techniques:**

Verification of Beer Lamberts for P-nitrophenol or cobalt chloride.

Determination of pKa value of p nitrophenol

Quantitative estimation of the following in biological samples

Sugar in given solutions and biological samples

Extractions and separation of lipids

The determination of acid value of a fat

Estimation of proteins

Estimation of DNA/RNA

**II-GENETICS**

Demonstration of Law of Segregation (use of coloured beads, capsules etc.).

Demonstration of Law of Independent Assortment (use of coloured beads, capsules etc.).

Numerical problems based on of Law of Segregation and Law of Independent Assortment.

Numerical problems based on Paternity Disputes (Blood groups)

Preparation of slide of Barr Body.

Preparation and study of mitosis slides from onion root tips by squash method.

Dermatographics : Palm print taking and finger tip patterns.

Study of inheritance of Human Phenotypic Traits (ability to taste PTC/Thiourea, rolling of tongue etc.)

**SEMESTER-II**  
**EDUCATION**

**PHILOSOPHICAL FOUNDATIONS OF EDUCATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:** The paper setter may set each question in 2/4 parts to ensure maximum representation of the syllabus.

**SECTION-A**

1. Philosophy of Education- Definition, nature and scope
2. Difference between philosophy of education & educational philosophy

**SECTION-B**

1. Relationship between Philosophy & Education.
2. Impact of Philosophy on different aspects of Education.

**SECTION-C**

1. Idealism –its main features & contribution to Education
2. Naturalism – its main features & contribution to Education

**SECTION-D**

1. Pragmatism–its main features & contribution to Education
2. Meaning & importance of values; ways & means for inculcation of values.

**Books Recommended:-**

1. Bhatia and Narang      Philosophical & Sociological Foundation of Education Doaba House, New Delhi, 1992.
2. Bhatia and Narang      Theory & Principles of Education, Parkash Brothers, Ludhiana, 1986.
3. Dayakar, Reddy, D.      Value Oriented Education, Discover Publishers, New Delhi, 2006.
4. Sodhi, T.S              Philosophical and Sociological Foundations of Education, Bawa Publications, Patiala, 2007.
5. Taneja, V.R.              Foundation of Education, Chandigarh, Mahindra Capital, Punjab, 2006.
6. Taneja. V.R.              Socio-Philosophical Approach to Education, Delhi : Atlantic Publishers, 1983

**SEMESTER-II****HUMAN RIGHTS****OUR DUTIES IN RELATION TO SOCIETY****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note:** The paper setter may set each question in 2/4 parts to ensure maximum representation of the syllabus.

**SECTION-A**

Identification of human duties in relation to society.

**SECTION-B**

Duties towards self; family; neighborhood; environment and society at large.

**SECTION-C**

Conflicts in duty performance at individual level, socio cultural level; causes of these conflicts.

**SECTION-D**

Suggestions for resolving conflicts and better duty performance at different levels-individual, organization work place, socio cultural level.

**Recommended Books:-**

1. Vijay and Kumar, Perspectives on Human Rights, Manak Publications, New Delhi.
2. Khare, Subhash Chandra, Human Rights and UNITED Nations Metropolitan Co. New Delhi.
3. Iyer, V.R. Krishna, Human Rights and the Law, Vapul law, Indore.
4. Sharma, N.R. Human Rights in the World, Pointer Publishers, New Delhi.
5. Naseema, C. Human Rights Education, Kanishka Publishers, New Delhi.
6. Dikshit, R.C., (1998), Human Rights and the Law, Universal and Indian, New Delhi: Deep and Deep.
7. Kashyap, Subhash C., (1978), Human Rights and Parliament, Delhi: Metropolitan. Kirpal, B.N. et al., (2004), Supreme but Not Infallible, New Delhi: OUP

**SEMESTER-II**  
**DAIRY FARMING (VOCATIONAL)**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Anatomy and Physiology**

Anatomy & Physiology of udder. Milk synthesis and its secretion including let down of milk. Digestive and reproductive system of cattle

**SECTION-B**

**Feeding Practices**

Classification of feeding stuffs. Study of roughages and concentrates. Silage and hay making. General principles of feeding cattle & buffaloes.

**SECTION-C**

**Management**

- 1) General care of cattle, grooming, exercise, bathing, oestrus observation, care during pregnancy, parturition, milking, clean milk production, drying off.
- 2) Care of calves: Care and feeding of weaned calves, Identification marks (tattooing, branding and ear tagging) disbudding and castration etc.
- 3) Principles of grading up in cattles. Various systems of breeding i.e. inbreeding, out breeding and crossbreeding. Importance of Sire & Dam.
- 4) Artificial insemination, Merits and Demerits thereof.

**SECTION-D**

**Diseases and their Control**

Common infections and contagious diseases, their causes, symptoms and treatment. Vaccination schedule. Deworming and tick control.

**SEMESTER-II****DAIRY FARMING (VOCATIONAL)  
(PRACTICAL)****Time: 3 Hours****Marks: 50**

1. Identification of various feed stuffs.
2. Identification and numbering of animals:
  - a) Tattooing, b) Notching, c) Branding, d) Eartagging
3. Disbudding: Caustic touch, Hot iron method, Electric dehorner.
4. Collection of semen, its evaluation and extension (Demonstration only)
5. Techniques of artificial insemination (Demonstration only).

**SEMESTER-II****RSL121:****RUSSIAN****PAPER-I (APPLIED GRAMMAR)****Time allowed: 3 Hrs.****M. M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Grammar (all topics covered in the text book)

**SECTION-B**

2. Comprehension (unseen text with questions)

**SECTION-C**

3. Questions based on the texts covered in the textbook.

**SECTION-D**

4. Informal letter on the given situation.

**SEMESTER-II****RUSSIAN****PAPER-II (TRANSLATION & COMPOSITION)****Time allowed: 3 Hrs.****M. M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Translation from English into Russian (simple text not exceeding 150 words)

**SECTION-B**

2. Translation from Russian into English/Hindi/Punjabi (simple text not exceeding 250 words)

**SECTION-C**

3. Paragraph of not less than 150 words. (One out of three topics)  
Topics: My country, A Dream, Summer Vacations, My Birthday, The Indian Festivals.

**SECTION-D**

4. Dialogue writing.

**SEMESTER-II****RUSSIAN****PAPER-III (ORAL)****Time allowed: 3 Hrs.****M. M.: 20**

-	Reading of a text	<b>05</b>
-	Dictation	<b>05</b>
-	Conversation	<b>05</b>
-	Oral comprehension	<b>05</b>

**Prescribed Textbook:** Russian By Wagner & Ovsienko. (Lessons 13-25)**Supplementary Reading:**

1. A.K. Maurya: ESSENTIAL RUSSIAN, University of Delhi, 2004.
2. S Khavronina: Russian in Exercise, 1978.
3. I. Pulkina: RUSSIAN A Practical Grammar with Exercise. Russky Yazik. Pub. H. Moscow.
4. Dictionaries: English - Russian dictionary. Russian - English Dictionary.

**Note: Glossary of difficult words to be given for translation purpose in the question paper.**

**SEMESTER-II****FRL-121****FRENCH****PAPER-I (COMPREHENSION & COMPOSITION)****Time allowed: 3 Hrs.****M.M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Questions of general comprehension related to the text.  
e.g.:- Qu'est- ce que vous ferez si vous allez en France ?

**SECTION-B**

2. Questions on comprehension of an unseen passage.

**SECTION-C**

3. Composition of a small paragraph on general topics pertaining to the text. e. g.: Ma maison, Mon professeur, Ma famille, Une ville touristique, Un pique-nique.

**SECTION-D**

4. Make a dialogue on any given situation.

**SEMESTER-II****FRENCH****PAPER-II (TRANSLATION & GRAMMAR)****Time allowed: 3 Hrs.****M.M.: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Translation of a simple unseen passage or short sentences from English into French.

**SECTION-B**

2. Translation of a simple unseen passage or short sentences from French into English.

**SECTION-C**

3. Questions on applied grammar pertaining to the text-book.

**SECTION-D**

4. Questions on applied grammar pertaining to the text-book.

**NOTE: Glossary of difficult words may be given for translation purpose in the question paper.**

**SEMESTER-II****FRENCH****PAPER-III (ORAL)****Time allowed: 3 Hrs.****M.M.: 20**

-	Reading of a text	<b>05</b>
-	Dictation	<b>05</b>
-	Simple conversation	<b>05</b>
-	Oral Comprehension	<b>05</b>

**Prescribed Textbook:**

“CONNEXIONS-1” by Regine Merieux & Yves Loiseau, Published by Didier (7-12 UNITS)

**Supplementary Reading:**

**Nouveau Sans Frontières 1** by Philippe Dominique & Jacky Girardet

**SEMESTER-II****URDU**

**URL102: Essay, Composition, Media and Information**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Courses of Study****SECTION-A**

Essay

**SECTION-B**

Letter/application

**SECTION-C**

Opposite words, Numbers, Genders and Idioms

**SECTION-D**

News paper, Journals, Radio and TV

**Books Recommended:-**

1. Guldasta-e-Mazamin-o-Insha Pardazi, Part-II by Dr. Aarif Mohammad Khan, Published by M/S Educational Book House, A.M.U. Market, Aligarh
2. Akhbar Ki Kahani by Ghulam Haider, Taraqqi Urdu Board, New Delhi
3. Rehbar-e-Akhbar Navisi by Syed Iqbal Qadri, Taraqqi Urdu Board, New Delhi
4. Urdu Sahafat Ki Tarikh by Nadir Ali Khan, National Council for Promotion of Urdu, R.K.Puram, New Delhi
5. Television Ki Sahafat by Shakil Hasan Shamsi, Educational Book House, AMU Market, Aligarh
6. Television Nashariyat by Anjum Usmani, Educational Book House, AMU Market, Aligarh

**SEMESTER-II**

**PERSIAN**

**PRL102: COMPOSITION AND GRAMMAR**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Courses of Reading**

**Book Prescribed:**

1. Farsi-o-Dastur, Zohra Khanlari, Edara Adabyat, Sadar Bazaar Delhi, 110006,  
(Pages: 18, 32, 33, 43, 44, 52, 54, 63, 64, 75, 76, 91, 92, 101, 102, 111, 112, 120 & 121.)
2. Farsi-o-Dastur Tarjuma, Part-II, by Dr. Nargis Jahan, published by Idara Adabiyat, Sadar Bazaar, Delhi.

**SECTION-A**

**Composition**

Short Essay (Ten to twenty sentences in Persian)

Rafique Man , Darngah-e-Man, Watan-e-Azizam, Sha'ir-e-Marroof, Kitabi ke Man Pasandam, Fasalha-e-Hind, Amozgaram, Mashaghil, Khuda-e-bartar & Ahmiyat-o-Favaid-e-Riyazat-e-Badani

**SECTION-B**

Translation of unseen passage or sentences in Urdu/English/Hindi/Punjabi

**SECTION-C**

Translation of simple Sentences into Persian

**SECTION-D**

**Grammar: Definitions, kind and examples:**

Nihad-o-Guzare, Fail-o-Zamane Fail (Mazi, Haal, Mustaqbal & Muzare) Shakhs (Avval, Dom & Som), Shakhs (Mufarrad and Jama), Fa'il, Ism aur uski Iqsaam, Tadad, Zamir

**SEMESTER-II**  
**HINDI (ELECTIVE)**

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**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

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गद्य-त्रिवेणी: संपादक- डॉ. सुखविन्दर कौर बाठ, प्रकाशक- प्रैस एण्ड पब्लिकेशन ब्यूरो, गुरु नानक देव यूनिवर्सिटी, अमृतसर। 2 निबंध (कछुआ धर्म, साहित्य की महत्ता), 2 एकांकी(पहली दो), 2 कहानी (पहली दो)

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आदर्श हिन्दी व्याकरण तथा सैद्धांतिकी : डॉ. एच.एम.एल. सूद, वागीश प्रकाशन, जालंधर। 'हिन्दी व्यावहारिक व्याकरण' पुस्तक भी निर्धारित की गयी हैं। (क) सैद्धांतिकी-निबंध, कहानी, एकांकी: परिभाषा और तत्व (ख) उपसर्ग, प्रत्यय, अनेक शब्दों के लिए एक शब्द, समानार्थी, विपरीतार्थक।

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पत्रकारिता-अर्थ एवं उपयोगिता, पत्रकारिता शब्दावली (संलग्न)

I 9' ku&Mh

कार्यालयी पत्रों का सैद्धांतिक परिचय-चार पत्र (बैंकिंग व्यवहार संबंधी पत्र, शिकायत संबंधी पत्र, परिपत्र, नौकरी हेतु आवेदन), कार्यालयी पत्रों के प्रकार (व्यावहारिक पक्ष)

### पत्रकारिता सम्बन्धी शब्दावली

1. Advertisement	विज्ञापन
2. Article	लेख
3. Adaptation	रूपांतर
4. Acknowledgement of source	सूत्र का उल्लेख
5. Art Editor	कला सम्पादक
6. Audience	श्रोता
7. All India Radio	आकाशवाणी
8. Agricultural News	कृषि समाचार
9. Announcer	उदघोषक
10. Banner	पताका
11. Bigger Type	मोटा टाइप
12. Body	बाँडी, काय
13. Booklet	ग्रन्थिका
14. Box	चौखटा
15. Bulletin	बुलेटिन
16. Broadcast	प्रसारण
17. Brochure	विवरणिका
18. Canons of journalism	पत्रकारिता के नीति सिद्धांत
19. Caption	शीर्षक
20. Cartoons	व्यंग्य-चित्र
21. Circulation	प्रसार - संख्या
22. Classifieds	वर्गीकृत विज्ञापन
23. Compositor	अक्षर - योजक
24. Correspondent	संवाददाता
25. Cub reporter	नौसिखिया पत्रकार
26. Columnist	स्तम्भकार
27. Communication	संचार
28. Communication satellite	संचार-उपग्रह
29. Copyright	प्रतिलिप्याधिकार
30. Daily	दैनिक
31. Defamation	मानहानि
32. Development Journalism	विकास पत्रकारिता
33. Editor	सम्पादक
34. Editorial	सम्पादकीय
35. Exclusive	विशिष्ट समाचार
36. Feature	रूपलेख, फीचर
37. Feedback	प्रतिपुष्टि

38. Flagline	चेतावनी
39. Folio	पृष्ठ - संख्या
40. Fortnightly	पाक्षिक
41. Free lancer	स्वतंत्र पत्रकार
42. Ghost writer	छदम लेखक
43. Hoarding	प्रचार पटल
44. Human Interest feature	मनोरोचक फीचर , मर्मस्पर्शी रूपलेख
45. House Journal	संस्था- पत्र
46. Interview	साक्षात्कार
47. Innovation	नवाचार
48. Jacket	पुस्तकावरण
49. Layout	सज्जा, विन्यास, अभिन्यास
50. Letter spacing	अक्षर अंतराल
51. Live broadcast	सीधा प्रसारण
52. Local News	स्थानीय समाचार
53. Make up	पृष्ठ - सज्जा
54. Mass communication	जन - संचार
55. Monthly magazine	मासिक पत्रिका
56. News analysis	समाचार विश्लेषण
57. Out of print	अप्राप्य
58. Periodical	नियतकालिक पत्रिका
59. Pix	चित्र
60. Playwright	नाटककार
61. Press release	प्रेस-विज्ञप्ति
62. Quarterly	त्रैमासिक
63. Screenplay	पटकथा
64. Sting operation	भंडाफोड़ पत्रकारिता
65. Spot commercial	अंतराल विज्ञापन
66. Sponsored programme	प्रायोजित कार्यक्रम
67. Subscriber	ग्राहक
68. Tabloid Newspaper	छोटा समाचार पत्र
69. Wrong font	विजातीय टाइप
70. Working journalist	श्रमजीवी पत्रकार

**SEMESTER-II**  
**Functional Hindi (Vocational)**  
QD' kuy fglhnh/okds' kuy½

i z kkl fud vkš 0; ol kf; d i =kpkj vkš fglhnh I kfgR; dk vkfndky

I e; % 3 ?k/s

i w kklcl% 60

**Instructions for the Paper Setters:-**

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I D' ku&

fu/kkfjr i kB; Øe%

(क) व्यवसायिक शब्दावली (शब्दावली साथ सलग्न है)

I D' ku&ch

(ख) प्रशासनिक पत्राचार, सामान्य पत्राचार, कार्यलयीन पत्राचार और व्यवसायिक पत्राचार, सामान्य-पत्र और प्रशासनिक पत्रों में भेद, मूलरूप में पत्र लिखना (Original letter), पत्र का उत्तर देना (Reply to letter), पावती (Acknowledgement), स्मारक/स्मरण पत्र (Reminder), अर्द्ध-सरकारी पत्र (Semi Official letter), परिपत्र (Circular), आदेश (Order), पृष्ठांकन (Endorsement), अन्तर्विभागीय टिप्पणी (Inter-department notes), स्तरीय प्रारूप (Standard Draft), निविदा (Tenders), सूचनाएँ (Notes), रिक्त स्थानों के लिए विज्ञापन (Advertisement or vacancies), प्रस्ताव पत्र, भाव-दर सूची, बीजक/विधेयक, आदेश-पत्र, रसीद, भुगतान सूचना

I D' ku&I h

½x½ 0; ol kf; d i =kpkj

- व्यवसाय : सामान्य परिचय
- व्यवसाय : अर्थ और परिभाषा
- व्यवसाय : प्रयोजन
- व्यवसाय : पत्राचार
- व्यवसायिक पत्राचार : अवधारणा और प्रयोजन

I D' ku&Mh

(घ) fglhnh I kfgR; dk vkfndky

- नामकरण
- परिस्थितियाँ
- विशेषताएँ
- पृथ्वीराज रासो की प्रामाणिकता और अप्रामाणिकता

**SEMESTER-II**  
**Functional Hindi (Vocational)**

Qd' kuy fglh%okds kuy½

i z ks vks ekf[kdh

i wkkd % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z ks ds fo"k;

- प्रशासनिक पत्रों के प्रारूप तैयार करने का अभ्यास।
- व्यावसायिक पत्रों के प्रारूप तैयार करने का अभ्यास।
- कार्यालयीन पत्रों का प्रारूप तैयार करने का अभ्यास।
- सरकारी व अर्द्ध-सरकारी पत्रों में से किसी एक पत्र के नमूने का टंकण करना।

**SEMESTER-II**  
**Hindi Patrakarita (Vocational)**  
fglUnh i =dkfj rk %okds kuy½

fglUnh i =dkfjrk dk tul pkj

I e; % 3 ?k&/s

i wkk&d% 60

**Instructions for the Paper Setters:-**

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I D'ku& ,

fu/kkfjr i kB; Øe%

¼d½ मल्टीमीडिया, (बहुमाध्यम) उपग्रह, पेजर, टेलीप्रिंटर टेलैक्स, टेलीफोन, वाकी-टॉकी, सेल्युलर, वीडियोफोन, फ़ैक्स, वीडियोटेक्स्ट, टेलीटेक्ट, एस.टी.डी., आई.एस.डी., इंटरकॉम, टेलीकॉन्फ़रेन्स।

I D'ku&ch

¼[k½ I pkj % I kekl; i fjp;

- संचार : अर्थ व परिभाषा
- संचार : प्रक्रिया के प्रमुख तत्व
- संचार की विशेषताएं
- संचार के प्रकार और क्षेत्र

I D'ku&I h

¼x½ I pkj ek/; eka ds fy, ys[ku ds i djkj %

- समाचार
- परिचर्चा
- भेंटवार्ता
- लेख
- समीक्षा
- फीचर
- संवाद
- रिपोर्टाज
- वृत्तचित्र
- विवज़/प्रश्नोत्तरी
- सृजनात्मक लेखन

I D'ku&Mh

¼?k½ tul pkj % I kekl; i fjp;

- जनसंचार - सामान्य परिचय, अर्थ व परिभाषा
- जनसंचार - विशेषताएं
- जनसंचार - प्रकार/माध्यम : सामान्य परिचय
- समाचार
- आकाशवाणी
- दूरदर्शन और सिनेमा

**SEMESTER-II**  
**Hindi Patrakarita (Vocational)**  
fgllnh i =dkfj rk %okds kuy½

i z kx vkj ekf[kdh

i wkkd% 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z kx ds fo"k;

- महाविद्यालयों के विभिन्न कार्यक्रमों की रिपोर्ट तैयार करने का अभ्यास।
- आकाशवाणी/दूरदर्शन के कार्यक्रमों का आलेख तैयार करना।
- समाचार लिखते समय किन-किन आवश्यक बातों का ध्यान रखना चाहिए।
- संचार के विविध प्रकारों/रूपों की पावर-पाइंट प्रस्तुति।

**SEMESTER-II**  
**SANSKRIT (ELECTIVE)**  
1/20; ] 0; kdj .k , oa vupkn½

l e; &3 ?k. Vs

i wkkid&100

i / u&i = dk ek/; e fglnh gksxkAmYkj | Ld'r@fglnh@i atkch@vaxst# ea gks | drs gA

**Instructions for the Paper Setters:-**

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**SECTION-A**

नीतिशतकम् के 1 से 25 पद्यों की सप्रसंग व्याख्या।  
विद्यामहत्त्व, धन का महत्त्व, मूर्ख पद्धति, विद्वत् पद्धति, कवि परिचय, सत्संगति,  
सार से सम्बन्धित प्रश्न।

**SECTION-B**

नीतिशतकम् के 26 से 50 पद्यों की सप्रसंग व्याख्या।  
नीतिशतकम् की 1 से 50 पद्यों में से प्रसिद्ध सूक्तियों की सप्रसंग व्याख्या।

**SECTION-C**

शब्द रूप- राम, हरि, फल, देव, पितृ, पुस्तक, साधु, लता, रमा, मातृ, नदी, गुरु तथा –  
एक, द्वि, त्रि, चतुर्- शब्दों के पुल्लिंग में रूप।  
कारकों का संस्कृत वाक्यों में प्रयोग –  
अभितः, परितः, सर्वतः, अलम्, सह, सार्धम्, साकम्, समम्, समया, निकषा, अन्तरा, अन्तरेण,  
धिक् नमः – इनका प्रयोग करके संस्कृत में वाक्य बनाना।

**SECTION-D**

कृदन्त प्रत्यय- भू, पठ्, हस्, लिख्, वद्, गम्, पत्, दृश्, स्मृ, पच्, दा, शक्, श्रू, कृ धातुओं के  
साथ क्त, क्तवतु, क्त्वा, तुमुन्, तव्यत् तथा अनीयर् प्रत्ययों का योग।  
हिन्दी से संस्कृत में अनुवाद।

lk' ui = fuekzk funk k

पाठ्यक्रम के A, B, C, D 4 सैक्शन हैं। अतः प्रश्न पत्र के भी A, B, C, D 4 सैक्शन बनाये जायेंगे तथा उन में 8 प्रश्न (पाठ्यक्रम के सैक्शन A से 2, B से 2, C से 2, D से 2) दिये जायेंगे। यदि आवश्यकता हो तो किसी भी प्रश्न के क, ख, ग, घ भाग बनाये जा सकते हैं, परन्तु सभी प्रश्नों के अंक समान हों।

### SECTION-A

<b>Question-I</b>	नीतिशतकम् के 1-25 श्लोकों में से 4 पद्यों की प्रसंग सहित व्याख्या	= 20 अंक
<b>Question-II</b>	क. नीतिशतक के प्रश्नों के लिए निर्धारित बिन्दुओं में से एक प्रश्न	= 10 अंक
	ख. नीतिशतक के प्रश्नों के लिए निर्धारित बिन्दुओं में से एक प्रश्न	= 10 अंक

### SECTION-B

<b>Question-III</b>	नीतिशतकम् के 26-50 श्लोकों में से 4 पद्यों की प्रसंग सहित व्याख्या	= 20 अंक
<b>Question-IV</b>	नीतिशतक निर्धारित में से 4 सूक्तियों की सप्रसंग व्याख्या	= 20 अंक

### SECTION-C

<b>Question-V</b>	निर्धारित में से 4 शब्दों के रूप लिखवायें	= 20 अंक
<b>Question-VI</b>	क. निर्धारित अभितः परितः आदि 7 देकर इन के योग में विभक्ति पूछें	= 10 अंक
	ख. निर्धारित अभितः परितः आदि 5 देकर इन के प्रयोग से संस्कृत वाक्य बनवायें	= 10 अंक

### SECTION-D

<b>Question-VII</b>	निर्धारित धातुओं में से 10 के साथ निर्धारित में से प्रत्यय देकर कृदन्त रूप लिखवायें।	= 20 अंक
<b>Question-VIII</b>	10 सरल हिन्दी वाक्यों का संस्कृत में अनुवाद	= 20 अंक

**SEMESTER-II**

**FUNCTIONAL SANSKRIT (VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

प्रश्न पत्र हिन्दी में होगा।

**Instructions for the Paper Setters:-**

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**SECTION-A**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन:  
नित्यकर्म विविध विधान  
सामान्य देव पूजा विधि  
षोडशोपचारविधि

**SECTION-B**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन :  
षोडश संस्कार  
वर्णाश्रम व्यवस्था

**SECTION-C**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन :  
गर्भाधान संस्कार  
पुंसवन संस्कार  
विवाह संस्कार

**SECTION-D**

इन बिन्दुओं से संबंधित विस्तृत अध्ययन :  
विशिष्टदेवपूजाविधि  
पंचयज्ञकर्मविधि  
संस्कारों का उद्देश्य एवं प्रयोजन

lk' ui = fuekzk funzk

पाठ्यक्रम के A, B, C, D 4 सैक्शन हैं। अतः प्रश्न पत्र के भी A, B, C, D 4 सैक्शन बनाये जायेंगे तथा उन में 8 प्रश्न (पाठ्यक्रम के सैक्शन A से 2, B से 2, C से 2, D से 2) दिये जायेंगे। यदि आवश्यकता हो तो किसी भी प्रश्न के क, ख, ग, घ भाग बनाये जा सकते हैं, परन्तु सभी प्रश्नों के अंक समान हों।

### SECTION-A

Question-I	प्रश्न	= 16 अंक
Question-II	प्रश्न	= 16 अंक

### SECTION-B

Question-III	प्रश्न	= 16 अंक
Question-IV	प्रश्न	= 16 अंक

### SECTION-C

Question-V	प्रश्न	= 16 अंक
Question-VI	प्रश्न	= 16 अंक

### SECTION-D

Question-VII	प्रश्न	= 16 अंक
Question-VIII	प्रश्न	= 16 अंक

**SEMESTER-II****ENGLISH (COMPULSORY)****Time: 3 Hours****Max. Marks: 50****Instructions for the Paper Setters:-**

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**Texts Prescribed:**

1. *Tales of Life* (Guru Nanak Dev University, Amritsar) Stories at Sr. No. 7, 9, 10, 11, 12
2. *Prose for Young Learners* (Guru Nanak Dev University, Amritsar) Essays at Sr. No. 7, 8, 9, 10, 11
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP (Units: 49-97)

**The syllabus is divided in four sections as mentioned below.**

**SECTION-A**

English Grammar in Use, 4<sup>th</sup> Edition by Raymond Murphy, CUP (Units: 49-81)

**SECTION-B**

Personal letter Writing and English Grammar in Use (Units: 82-97)

**SECTION-C**

Tales of Life (Guru Nanak Dev University, Amritsar) 7, 9, 10, 11, 12

**SECTION-D**

Prose for Young Learners (Fourth Edition) by Raymond Murphy, CUP 7, 8, 9, 10 and 11

**SEMESTER-II****ENGLISH (ELECTIVE)****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

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**Books Prescribed:-**

1. *The Vendor of Sweets* by R.K. Narayan.
2. *The School for Scandal* by Sheridan
3. *Glossary of Literary Terms* by M.H. Abrams, Wadsworth CENGAGE Learning Publishers, 8th Edn., 2008.
4. *Better Pronunciation of English* by J.D.O'Connor

**The syllabus is divided in four sections as mentioned below:****SECTION-A**

- a) Literary Terms: Burlesque, Elegy, Hyperbole, Metaphor, Poetic Justice, Point of view, Dramatic Monologue, Tragicomedy.
- b) Transcription of Words: garage, data, menu, hello, cadet, exit, rebel (n), rebel (v), conduct(n), conduct (v), consume, idiot, depot, madam, handsome, petrol, perfect (adj.), perfect (v), vehicle, healthy, wealthy, police, sandwich, career, talent.

**SECTION-B**

Acts I,II,III of the play *The School for Scandal*

**SECTION-C**

Acts IV, V of the play *The School for Scandal*

**SECTION-D**

Complete text of the novel *The Vendor of Sweets*

## SEMESTER-II

### FUNCTIONAL ENGLISH (VOCATIONAL)

#### REMEDIAL GRAMMAR

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### **Books Prescribed:**

1. *Collins Cobuild English Grammar: Work Book.*
2. *Grammar and Composition for Communication by S.M. Gupta & Alpana Gupta; Orient Blackswan*
3. *Remedial Grammar for Foreign Students, by F T. Wood; Macmillan*

#### **Course Contents:**

#### **SECTION-A**

Nouns: Singular & Plural; Articles: Definite/ Indefinite; Verbs: Intransitive/transitive verbs; regular/Irregular verbs; Auxiliary Verbs, Tenses and their uses, Pronouns, Gerunds and participle confusion

#### **SECTION-B**

Prepositions, Adjectives, Adverbs, Adjective-Adverb confusion, Difficulties with comparatives and superlatives, Errors of concord

#### **SECTION-C**

Types of Sentences: Declarative, Interrogative, Imperative; Negative & affirmative Passive/Active Voice Direct-Indirect speech, Use of Question Tags, Use of Who-whom, much-many, still-yet, so that, so as, make and do etc.

#### **SECTION-D**

Use of individual words, Use of courtesy words for introduction, complaints, refusals, requests, greetings, Beyond Sentence: Connecting sentences Coordination and subordination Cohesion: Reference, ellipsis, substitution, repetition, Use of Conjunctions to develop texts

**SEMESTER-II**  
**Punjabi (Compulsory)**  
**ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

**ਸੈਕਸ਼ਨ - ਏ**

ਦੋ ਰੰਗ (ਕਹਾਣੀ ਭਾਗ) (ਸੰਪਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿੱਲੋਂ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਸਰਗੋਧੀਆ),  
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।  
( ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ)

**ਸੈਕਸ਼ਨ - ਬੀ**

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਹਸਤੀਆਂ (ਜੀਵਨੀ ਨੰ: 10 ਤੋਂ 18 ਤੱਕ)  
(ਸੰਪਾ. ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ, ਹਰਨਾਮ ਸਿੰਘ ਸ਼ਾਮ),  
ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।  
(ਵਿਸ਼ਾ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

**ਸੈਕਸ਼ਨ - ਸੀ**

- (ੳ) ਸ਼ਬਦ-ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ-ਰਚਨਾ : ਪਰਿਭਾਸ਼ਾ, ਮੁਢਲੇ ਸੰਕਲਪ।  
(ਅ) ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ

**ਸੈਕਸ਼ਨ - ਡੀ**

- (ੳ) ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ  
(ਅ) ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ

**SEMESTER-II**

**Punjabi (Elective)**  
**ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ : 100

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਦਸ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਸੈਕਸ਼ਨ- ਏ**

**ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1700 ਤੱਕ)**

(ਸੰਪਾ. ਡਾ. ਧਰਮ ਸਿੰਘ, ਡਾ. ਹਿਰਦੇਜੀਤ ਭੋਗਲ)

(ੳ) ਸਾਹਿਤਕ ਰੂਪਾਂ ਦਾ ਇਤਿਹਾਸ (ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ)

20 ਅੰਕ

(ਅ) ਪ੍ਰਵਿਰਤੀਆਂ

**ਸੈਕਸ਼ਨ- ਬੀ**

**ਮੰਚ ਘਰ** (ਸੰਪਾ. ਕੁਲਦੀਪ ਸਿੰਘ ਧੀਰ ਅਤੇ ਹਿਰਦੇਜੀਤ ਸਿੰਘ ਭੋਗਲ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ  
ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

(ਵਿਸ਼ਾ- ਵਸਤੂ/ਸਾਰ/ਪਾਤਰ ਉਸਾਰੀ/ਕਲਾ ਪੱਖ)

20 ਅੰਕ

**ਸੈਕਸ਼ਨ- ਸੀ**

(ੳ) ਦਫ਼ਤਰੀ ਅਤੇ ਘਰੇਲੂ ਚਿੱਠੀ ਪੱਤਰ

(ਅ) ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ : ਪਰਿਭਾਸ਼ਾ, ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਦੇ ਨਿਯਮ

20 ਅੰਕ

**ਸੈਕਸ਼ਨ- ਡੀ**

**ਕੋਸ਼ਕਾਰੀ ਅਤੇ ਪੰਜਾਬੀ ਕੋਸ਼ਕਾਰੀ**

(ਕੋਸ਼ਕਾਰੀ ਦੀ ਪਰਿਭਾਸ਼ਾ/ਵਰਗੀਕਰਣ/ਪੰਜਾਬੀ ਕੋਸ਼ਕਾਰੀ ਦਾ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ)

20 ਅੰਕ

**Mudhli Punjabi**

**SEMESTER-II**

**ਮੁੱਢਲੀ ਪੰਜਾਬੀ**

**(In lieu of Compulsory Punjabi)**

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ**

**ਸੈਕਸ਼ਨ-ਏ**

ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ  
(ਨਾਂਵ, ਪੜਨਾਂਵ, ਕਿਰਿਆ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ, ਯੋਜਕ ਅਤੇ ਵਿਸਮਿਕ)

**ਸੈਕਸ਼ਨ-ਬੀ**

ਪੰਜਾਬੀ ਵਾਕ ਬਣਤਰ : ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ  
(ੳ) ਸਾਧਾਰਨ ਵਾਕ, ਸੰਯੁਕਤ ਵਾਕ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)  
(ਅ) ਬਿਆਨੀਆ ਵਾਕ, ਪ੍ਰਸ਼ਨਵਾਚਕ ਵਾਕ ਅਤੇ ਹੁਕਮੀ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)

**ਸੈਕਸ਼ਨ-ਸੀ**

ਪੈਰ੍ਹਾ ਰਚਨਾ  
ਸੰਖੇਪ ਰਚਨਾ

**ਸੈਕਸ਼ਨ-ਡੀ**

ਚਿੱਠੀ ਪੱਤਰ (ਘਰੇਲੂ ਅਤੇ ਦਫ਼ਤਰੀ)  
ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ

**SEMESTER-II**

**FUNCTIONAL PUNJABI (VOCATIONAL)**  
(ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜ) (ਫੰਕਸ਼ਨਲ)

ਪਰਚਾ ਏ : ਲਿਖਣ ਸ਼ੈਲੀਆਂ	ਕੁਲ ਅੰਕ : 100
ਪਰਚਾ ਬੀ : ਰਸਮਾ ਲਿਖਤਾ	ਅੰਕ: 50
	ਅੰਕ: 50

(ਭਾਗ -ੳ)

ਬਿਊਰੀ

ਸਮਾ : ਦ ਘਟ

ਪਰਚਾ ਏ- ਲਿਖਣ ਸ਼ੈਲੀਆਂ

ਕੁਲ ਅੰਕ : 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ

ਸੈਕਸ਼ਨ - ਏ

ਸਚਾਰ, ਜਨਸਚਾਰ ਅਤ ਪ੍ਰਸਾਰਨ

ਪ੍ਰਸਾਰਨ ਦੇ ਮੁੱਢਲੇ ਨਿਯਮ

ਸੈਕਸ਼ਨ - ਬੀ

ਸੰਚਾਰ ਦਾ ਮਾਧਿਅਮ ਰੇਡੀਓ ਅਤੇ ਪੰਜਾਬੀ

ਸੰਚਾਰ ਦਾ ਮਾਧਿਅਮ ਟੀ.ਵੀ. ਅਤੇ ਪੰਜਾਬੀ

ਸੈਕਸ਼ਨ- ਸੀ

ਪ੍ਰਸਾਰਨ, ਸਚਾਰ ਅਤ ਸਮਾਜ

ਭਾਰਤ ਵਿਚ ਟੀ.ਵੀ. ਨੈਟਵਰਕ

ਸੰਚਾਰ ਦੀ ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਪ੍ਰਕਾਰਜ

ਸੈਕਸ਼ਨ- ਡੀ

ਵਿਗਿਆਪਨ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਉਦੇਸ਼ ਅਤੇ ਲਾਭ

ਸਮਾਚਾਰ : ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਵਿਧੀਆਂ

ਸਮਾਚਾਰ ਅਤ ਵਾਗਆਨ ਦ ਨਮੂਨ

**SEMESTER-II**

**FUNCTIONAL PUNJABI (VOCATIONAL)**

(ਪਜਾਬੀ ਪ੍ਰਕਾਰਜੀ) (ਫੰਕਸ਼ਨਲ)

(ਭਾਗ- ਅ)

ਪ੍ਰਕਟਿਕਲ

ਸਮਾਂ : 1 ਘੰਟਾ

ਪਰਚਾ ਬੀ - ਰਸਮੀ ਲਿਖਤ

ਕੁਲ ਅੰਕ: 50

ਪਾਠ-ਕ੍ਰਮ

ਸੈਕਸ਼ਨ-ਏ

ਖੇਤਰੀ ਕਾਰਜ

ਰੇਡੀਓ ਅਤੇ ਟੀ.ਵੀ. ਸਟੇਸ਼ਨ ਤੇ ਜਾ ਕੇ ਵਿਹਾਰਕ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਕਰਨਾ ਅਤੇ ਆਵਾਜ਼ ਦਾ ਸਿਖਲਾਈ ।

ਭਾਸ਼ਾ ਦਾ ਖਤਰਾ ਵੱਖਰਵ ਦਾ ਸਿਖਲਾਈ ।

ਸੈਕਸ਼ਨ-ਬੀ

ਵਿਹਾਰਕ ਜੀਵਨ ਵਿਚ ਪਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਵਰਤ ।

(ਬੈਂਕ, ਡਾਕਖਾਨੇ, ਰੇਲਵੇ ਸਟੇਸ਼ਨ, ਬੱਸ ਅੱਡਾ, ਹਵਾਈ ਅੱਡ ਤੇ ਪੁਛ ਗਿਛ ਕਰਨ, ਸਾਟ ਬੁਕ ਕਰਵਾਉਣਾ, ਹਟਲ, ਰੈਸਟੋਰੈਂਟ ਵਿਚ ਖਾਣੇ ਲਈ ਆਦੇਸ਼ ਕਰਨਾ, ਕਮਰਾ ਬੁੱਕ ਕਰਵਾਉਣਾ)

ਸੈਕਸ਼ਨ-ਸੀ

ਸਮਾਜਕ ਸਾਭਿਆਚਾਰਕ ਸਦਰਭਾ ਵਿਚ ਪਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਵਰਤ

(ਸੁੱਭ ਸੰਦੇਸ਼, ਸ਼ੋਕ ਸੰਦੇਸ਼, ਵਿਆਹ ਸਮਾਗਮਾਂ ਤੇ ਪ੍ਰਾਹੁਣਿਆਂ ਨੂੰ ਜੀ ਆਇਆ ਕਾਹਣਾ ਅਤੇ ਵਦਾ ਕਰਨਾ ਆਦਿ)

ਸੈਕਸ਼ਨ-ਡੀ

ਵਿਭਿੰਨ ਸਥਿਤੀਆਂ ਵਿਚ ਵਾਰਤਾਲਾਪ

ਜੁਬਾਨੀ ਬੋਲਣ ਦਾ ਅਭਿਆਸ

ਨੋਟ : ਪ੍ਰਕਟਿਕਲ ਵਿਚ ਵਿਦਿਆਰਥੀ ਦਾ ਪਜਾਬੀ ਚੁਚਾਰਨ ਦਾ ਸਮਰੱਥਾ ਦੀ ਮੌਖਿਕ ਪਰੀਖਿਆ ਲਈ ਜਾਵੇਗੀ ।

**SEMESTER-II**  
**PHYSICAL EDUCATION**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Cell: Structure and Functions.
2. Skeletal System: Types of bones, names of the various bones of the body, Various types of Joints.
3. Muscular System: Various types of muscles, structure of skeletal muscles.

**SECTION-B**

4. Digestive System: It's organs and mechanism of digestion.
5. Nutrition: Elements of balanced diet, Functional Diet/Food
6. Doping in sports.

**SECTION-C**

7. Meaning and scope of Health Education. Hygiene problems of educational institutions and their remedial measures.
8. Personal hygiene; Care of eyes, teeth, ears, skin, hair and nails.
9. Air and water pollution and its remedial measures.

**SECTION-D**

10. First aid in case of snake bite, drowning, electric shock, burns, fracture, dislocation, sprain and strain.
11. Effects of Alcohol and smoking on health.
12. Communicable Diseases: Mode of transmission, prevention and control of tuberculosis, hepatitis (A & B), Rabies and HIV/AIDS.

**SEMESTER-II**

**PHYSICAL EDUCATION  
(PRACTICAL)**

**Marks: 40**

**Division of Marks: Athletics (12) + Games (12) +Ground Markings (3+3),  
Practical Note Book (5), Viva-Voce (5)**

- **Athletics Performance** ————— 100M, Long Jump for Boys  
100M, Long Jump for Girls
- **Games (Boys & Girls)—— Fundamentals, Rules, Performance**  
Handball  
Kho-Kho

**Suggested Readings:-**

1. John Raynor Anatomy and Physiology, New York, Harper & Row, 1983.
2. Rose and Wilson Foundations of Anatomy and Physiology, 1981, 5<sup>th</sup> ed.
3. Parror, J.W. anatomy and Physiology for Physical Education Teachers, Lend; Edward Arnold Healthful Living McGraw Hill, 1983.
4. Tadan D.K. et al,: Scientific basis of Physical Education and Sports, Friends Publication, New Delhi, 2001.
5. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
6. Kang G.S.: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University, Patiala, 2000.
7. Kang G.S. and Deol N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.
8. Dhillon G.K.: Health Education, Punjab Text Book

# SYLLABUS

FOR

## B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)

(Semester: III)

Examinations: 2018-19



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# GURU NANAK DEV UNIVERSITY AMRITSAR

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**SEMESTER–III**  
**POLITICAL SCIENCE**

**INDIAN CONSTITUTION**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

1. Constitution Assembly and making of India's Constitution.
2. Basic features of the Indian Constitution.
3. Preamble and its importance.
4. Nature of Indian Federalism and Centre-State Relations.

**UNIT–II**

1. Fundamental Rights, features, kinds and evaluation.
2. Fundamental Duties.
3. Directive Principles of the State Policy.

**UNIT–III**

1. **Parliament:** Composition, Powers and Role.
2. **President:** Election, Powers and Position.
3. **Indian Cabinet and Prime Minister:** Election, Powers, Position and Changing Role.
4. **Supreme Court and High Court:** Composition, Powers and Role.

**UNIT–IV**

1. **Governor:** Appointment, Powers and Role.
2. **State Legislature:** Composition, Powers and Role.
3. **Council of Ministers and Chief Minister:** Election, Powers, Position and Role.

**Books Recommended:**

1. G. Austin, *The Indian Constitution: Corner Stone of a Nation*, Oxford, Oxford University Press, 1966.
2. G. Austin, *Working of a Democratic Constitution: The Indian Experience*, Oxford University Press, 2000, Delhi.
3. D.D. Basu, *An Introduction to the Constitution of India*, New Delhi, Prentice Hall, 2008.
4. C.P. Bambhri, *The Indian State Fifty Years*, New Delhi, Shipra, 1997.
5. P. Brass, *Politics of India Since Independence*, Hyderabad, Orient Longman, 1990.
6. P. Brass, *Caste, Faction and Parties in Indian Politics*, Vol. II, Delhi, Chanakya Publications 1984-1985.
7. P. Brass, *Ethnic Groups and the State*, London, Croom, Helm, 1995.
8. P. Brass, *Language, Religion and Politics in North Indian*, London, Cambridge University Press, 1974.
9. B.L. Fadia, *State Politics in India*, Vol. II, New Delhi, Radiant Publishers, 1984.
10. F.R. Frankel, *India's Political Economy 1947-1977, The Gradual Revolution*, Oxford, Oxford University Press, 1978.
11. R. Kothari, *State against Democracy: In Search of Human Governance*, Delhi, Ajanta, 1988.
12. R. Kothari, *Politics in India*, New Delhi, Orient Longman, 1970.
13. R. Kothari, *Party System and Election Studies*, Bombay, Asia Publishing House, 1967.
14. I. Narain (ed.), *State Politics in India*, Meerut, Meenakshi Parkashan, 1967.
15. M.V. Pylee, *Constitutional Government in India*, Bombay, Asia Publishing House, 1977.
16. M.V. Pylee, *An Introduction to the Consutitution of India*, New Delhi, Vikas, 1998.
17. S.P. Verma and C.P. Bhambhari (ed.), *Election and Political Consciousness in India*, Meerut, Meenakshi Parkashan, 1967.
18. B.L. Fadia, *Indian Government and Politics*, Agra, Sahitya Bhavan Publications, 2008.
19. A.S. Narang, *Indian Government and Politics*, New Delhi, Gitanjali, 1999.
20. *Indian Journal of Political Sciences*
21. *Punjab Journal of Politics*
22. Seminar
23. Lloyd I. Rudolph and Susanne Hoeba Rudolph, *Explaining Indian Democracy: A Fifty-Year Perspective, 1956-2006*, Vol. I, II, III, New Delhi, OUP, 2008.
24. Francine Frankel, *India's Political Economy: 1947-2004*, New Delhi, OUP, 2006.
25. Madhav Khosla, *The Indian Constitution*, Oxford, 2012
26. Sudhir Krishnaswamy, *Democracy and Constitutionalism in India : the Study of Basic Structue*, Oxford,2011
27. P.M Bakshi, *The Constitution of India*, Universal, 2007.
28. J.C Johari, *The Constitution of India*, Sterling, 2007
29. Brij Kishore Shasma, *Introduction to the Constitution of India*, PHI, 2009

**SEMESTER–III  
HISTORY**

**HISTORY OF INDIA (AD 1707-1947)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setter:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

1. **Foundation of British Rule:** Advent of the British; Battles of Plassey and Buxar, Clive and Warren Hastings; Subsidiary Alliance Policy, Doctrine of Lapse.
2. **The Uprising of 1857:** Causes, Spread of the Uprisings, Nature and aftermath.

**UNIT–II**

3. **Economic Changes:** Agriculture, British commercial policies and the impact on the trade balance; Destruction of indigenous industries; the growth of modern industry; The drain theory.
4. **Growth of Education and Political Organization:** New education; Rise of the middle classes, Political institutions; **Socio Religious Movements** : Brahma Samaj, Arya Samaj, Rama Krishna Mission, Prarthna Samaj, Theosophical Society, Aligarh Movement.

### UNIT–III

5. **The Revolutionary Terrorism:** Partition of Bengal and its impact; Revolutionary Terrorism in Bengal, Maharashtra and the Punjab, Impact on the National Movement.
6. **The Phase of Non-Co-operation :** Emergence of Gandhi; The Jallianwala Bagh Massacre and its impact; Khilafat agitation; the Non-cooperation Movement; Withdrawal and impact; the Swarajists; The Simon Commission; **The Phase of Civil Disobedience :** The programme and the course of the Civil Disobedience Movement, the Round Table Conferences; Communal Award; Poona-pact; Withdrawal of Civil Disobedience Movement

### UNIT–IV

7. **Constitutional Development:** The Minto-Morley Reforms of 1909, The Act of 1919 and Dyarchy; Government of India Act, 1935 and Provincial Autonomy.
8. **Towards Partition and Independence :** Growth of communal politics; Lahore resolution, Cripps proposals; Quit India Movement; the INA Trials, Interim Government and Elections; Cabinet Mission towards Independence.

#### Suggested Reading:

1. Bipan Chandra, *History of Modern India*, Orient Longman, Hyderabad, 2009.
2. Sarkar, Sumit, *Modern India (1885-1947)*, Orient Longman, New Delhi, 1983.
3. Bose, Sugata and Ayesha Jalal, *Modern South Asia: History, Culture, Political Economy*, OUP, New Delhi, 2004.
4. Bandyopadhyay, Sekhar, *From Plassey to Partition: A History of Modern India*, Orient Longman, Hyderabad, 2004.
5. Datta, Kali Kinkar, *A Social History of Modern India*, Macmillan, New Delhi, 1975.
6. Bannerjee, A.C., *The New History of Modern India (1707-1947)*, K.P.Bagchi, Calcutta, 1983.
7. Burton, Stein, *A History of India*, OUP, New Delhi, 2003.
8. Desai, A.R., *Social Background of Indian Nationalism*, Popular Prakashan, Bombay, 1966.
9. Misra, B.B., *The Indian Middle Classes: Their Growth in Modern Times*, OUP, London, 1978
10. Jones, Kenneth, *Socio-Religious Movements in India*, CUP, Cambridge, New Delhi, 1989.
11. Chopra, P.N. et al, *A Social, Cultural and Economic History of India: Modern India*, Vol. III, Macmillan, New Delhi, 1974.
12. Chaudhuri, M.K., (ed.), *Trends of Socio-Economic Change in India (1871-1961)*, IAS, Simla, 1969.
13. Choudhary, Sukhbir, *Peasants' and Workers' Movements in India, 1905-1929*, PPH, New Delhi, 1971.

**SEMESTER–III**  
**JOURNALISM AND MASS COMMUNICATION**

**WRITING FOR PRINT MEDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section–A** shall consist of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks. **10x2=20**

**Section–B** shall consist of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks. **8x5=40**

**Section–C** shall consist of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks.

**10x2=20**

**News:** Writing a news story; chronological, logical and inverted pyramid styles, Headlines: Types of headlines. Leads; Types of leads, Sources of News, Elements of News. Organisational setup of a news paper office; Role of editor, a sub-editor and news editor.

How to produce a news paper

How to get a news paper registered

Qualities of a journalist

Functions of the Press

Printing Process

New Technology in Print Media

Editing the news story: editing symbols

Various departments of a newspaper office and their hierarchy.

Middles

Editorial, columns and letter to editor

Web Journalism

**(PRACTICAL)**

**(20 Marks)**

Writing news stories in various news writing styles

Writing features and articles

Writing letter to editor and getting it published

**Books Recommended:-**

1. Newspaper Editing: K.M. Srivastava, Sterling Publishers Pvt. Ltd. (1987).
2. Newspaper Management: Golab Kothari, Intercultural Open University (1995).

**SEMESTER–III**  
**MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)**

**SOUND & SCRIPT WRITING FOR MEDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section–A** shall consist of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks.

**10x2=20**

**Section–B** shall consist of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks.

**8x5=40**

**Section–C** shall consist of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks.

**10x2=20**

Question Paper will be set in English only but the medium of examination will be English, Punjabi and Hindi.

**Sound:**

- \* Meaning
- \* Characteristics
- \* Propagation
- \* Acoustic Reverberation

**Microphones:**

- \* Selection of Microphones
- \* Types of Microphones

**MAGNETIC RECORDING PRINCIPLES**

**Audio Cables & Connectors (Types & Uses)**

Noise & Distortion  
Dope Sheet/Exposure Sheet  
Sound Recordist's role in production crew  
Audio console

**Script Writing**

- \* Basics
- \* Elements of Good Script Writing
- \* Role of Writer
- \* Structure of Script

**Subject Research (Idea, Visualisation & Script Sources of Information)**

**Formats of Script Writing**

**Story Board**

**SEMESTER–III**

**MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)**

**(PRACTICAL)**

**Marks: 20**

Writing script for various radio formats.

Visit to sound recording studio.

Practical acquaintance with sound equipments.

**Books Recommended**

- |   |               |                                      |
|---|---------------|--------------------------------------|
| 1. Writing scripts for TV Radio and Film, | Willis, Edgor | Chicago, Halt and<br>Rinchart. 1981. |
| 2. Basics of Video Sound                  | Das Lyver     | Focal Press                          |

**Note: Practicals to be conducted by External Examiner.**

**SEMESTER–III  
SOCIOLOGY**

**SOCIETY IN INDIA**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**Unit–I**

- (a) **Indian Society:** Features and Unity in Diversity.
- (b) **Caste:** Features, Functions, Changing patterns, Difference between caste and class.

**Unit–II**

- (a) **Social Issues:** Communalism, Casteism, Gender and Human Rights.

**Unit–III**

- (a) **Marriage:** Meaning, Types, Functions and Changes.
- (b) **Family:** Meaning, Types, Functions and Changes.
- (c) **Kinship:** Meaning and Terminology.

**Unit–IV**

- (a) **Society in India:** Rural, Urban and Tribal.

**Recommended Books:**

1. Abraham, M. Francis: *Contemporary Sociology*, Oxford University, New Delhi, 2006.
2. Ghurye, G.S.: *Caste & Race in India*, Popular, Bombay, Punjabi Translations by N.S. Sodhi, Panjabi University, Patiala, 1962.
3. Hutton, J.H.: *Caste in India—Its Nature, Functions and Origin*, Oxford University Press, Delhi 1980.
4. Jayaraman, Raja: *Caste & Class, Dynamics of Inequality in Indian Society*, Hindustan Publishing Corporation, 1981.
5. Kapadia, K.M.: *Marriage and Family in India*, Oxford University Press, Calcutta, 1996.
6. Kapila, S: *A Textbook of Sociology*, Part-I & II, New Academic House, Jalandhar, 1990-91.
7. Kothari, Rajni (ed): *Caste in Indian Politics*, Orient Longman, Delhi, 1973.
8. Mandelbaum, David G.: *Society in India*, Popular Prakashan, Bomaby, 1972.
9. Mukerji, D.P.: *Diversities: Essays in Economics, Sociology and Social Problems*, Manak, New Delhi, 2002.
10. Maclver, R.M. & Page, Charles H.: *Society- An Introductory Analysis*, Macmillan, London, 1974.
11. Ahuja, Ram. 1999, *Society in India*. Jaipur: Rawat.
12. Atal, Yogesh. 2006, *Changing Indian Society*. Jaipur: Rawat.
13. Sharma, K.L. 2007, *Indian Social Structure and Change*. Jaipur: Rawat.

**SEMESTER–III  
PSYCHOLOGY**

**EXPERIMENTAL PSYCHOLOGY-I  
(THEORY)**

**Time: 3 Hours**

**Pass Marks: 35% of the subject  
(Theory and Practical Separately)**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

**Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section–A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 1½ marks; total weightage of the section being 15 marks.

**Section–B:** It will consist of short answer type questions with answers to each question up to two pages in length. Six questions will be set by the examiner and four will be attempted by the candidates. Each question will carry 9 marks: total weightage of the section being 36 marks.

**Section–C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 12 marks, total weightage of the section being 24 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Note:**

1. The use of Non-Programmable calculators and Statistical Tables are allowed in the examination.
2. Only one numerical question is to be set either of nine marks (from Section–B) or of twelve marks (from Section–C).

**Experimental Psychology:** Introduction and Nature of Experimental Method Name, Advantage and Disadvantage.

**Variables:** Types of Variables, Stimulus, Organismic and Response Variables, Process of experimentation-manipulation and control of variables, Concept of within and between Experimental Designs.

**Sensation:** Types of sensations, Visual sensation; structure and functions of the eye. Theories of colour vision (Young-Helmholtz. Opponent-Process & Evolutionary). Auditory sensation: Structure and functions of the Ear-Theories of hearing. Brief introduction to cutaneous sensation, olfactory sensation and gustatory sensation.

**Perceptual Processes:** Selective Attention, Nature and factors affecting perception, Principles of perception (organisation), perception of form; contour and contrast, figure-ground differentiation, perceptual set.

**Perception of Movement:** Image-Retina and Eye-Head movement system, Apparent movement, Induced movement, Auto Kinetic movement.

**Perception of Space:** Monocular and Binocular cues for space perception. Perceptual constancies lightness, brightness, size and shape.

**Illusions:** Types, causes and theories

**Statistics:** Normal Probability Curve, Its nature and characteristics (Numericals of Areas under NPC only)

**References:**

1. D. Amato, M.H.R. (2001): Experimental Psychology, Tata McGraw Hill, New Delhi.
2. Garrett, H.E. and Woodworth, R.S. (1969): Statistics in Psychology and Education. Vikils, Feffer and Simons Pvt. Ltd.
3. Kerlinger, P.N. (1988): Foundation of Behavioural Research, Surjeet Publications, New Delhi.
4. Postman, L. and Egan. J.P.: Experimental Psychology, Harper and Row, New York.
5. Schiffman, H.R. (1982): Sensation and Perceptions, John Willey and Sons.
6. Woodworth, R.S. and Schlosberg, H. (1954): Experimental Psychology, Holt, Rinehart and Winston, Inc.
7. Solso, R.L. (2007): Experimental Psychology: A Case Approach Pearson Education, New Delhi.
8. Sternberg, R.J. (2007): Cognitive Psychology, Thomson Wads Worth.

**SEMESTER–III  
PSYCHOLOGY**

**(PRACTICAL)**

**Marks: 25**

**Instructions for the Practical Examination:**

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

**Five Practical have to be performed out of the following:**

1. Role of set in perception.
2. Span of Attention/Division of Attention.
3. Muller-Lyer Illusion
4. Figure-ground differentiation
5. Paired Associate learning.
6. Reaction Time (Simple Vs. choice RT or Auditory Vs. Visual RT)

**SEMESTER–III**  
**DEFENCE AND STRATEGIC STUDIES**

**EVOLUTION OF WARFARE OUTSIDE INDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max .Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section A:** The examiner shall set 10 short answer type questions from the entire syllabus and the candidates will attempt 7 questions carrying 4 marks each. Answer to each question shall not exceed half of the page. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions from the entire syllabus—two from each Unit. The candidate shall attempt four questions, one from each Unit. Each question shall carry 13 marks. The total weightage of this Unit shall be 52 marks.

**Note:** *Practicals are only meant for the regular students. For the private students the two papers shall be of **100 marks each**. For the private students, each question in Section B will be of 18 marks.*

**Unit—I**

1. **Military Organisations and techniques of fighting of Macedonians and Persians with particular reference to the Battle of Arbela, 331 B.C.**
  - (a) Military organisations of Macedonians and Persians.
  - (b) Battle of Arbela
    - (i) Introduction
    - (ii) Opposing forces and their deployment.
  
2. **Military organizations and techniques of fighting of Romans and Carthaginians with particular reference to the Battle of Cannae 216 B.C.:**
  - (a) Military organisations of Romans and Carthaginians.
  - (b) Battle of Cannae
    - (i) Introduction
    - (ii) Opposing forces and their deployment.
    - (iii) Description of the battle.
    - (iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).

**3. Military organizations and techniques of fighting of Romans and Barbarians with particular reference to the Battle of Adrianople 378. A.D. : Military organizations and techniques of fighting of Romans and Barbarians.**

- (a) Military organisations of Romans and Barbarians.
- (b) Battle of Adrianople
  - (i) Introduction
  - (ii) Opposing forces and their deployment.
  - (iii) Description of the battle.
  - (iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).

**Unit–II**

**4. Military organizations and techniques of fighting of the English and Romans with particular reference to the Battle of Hastings 1066 AD. :**

- a) Military organisation of the English and Romans.
- b) Battle of Hastings
  - (i) Introduction
  - (ii) Opposing forces and their deployment.
  - (iii) Description of the battle.
  - (iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).

**5. The Mongol art of war under Chingiz Khan and Taimur**

- a) Organisation of Mongol Army.
- b) Mongol Art of War.

**Unit—III**

**6. Industrial Revolution and its impact**

- a) Impact on Society
- b) Impact on weapons for land and naval warfare
- c) Impact on means of communications
- d) Impact on tactics for land and naval warfare.

**7. Napoleonic Warfare**

- a) Elements of Napoleonic Warfare.
- b) Principles of Napoleonic Warfare.

#### Unit—IV

#### 8. Naval Warfare with particular reference to the Battle of Trafalgar 1805 A.D. :

- a) Background of the English and Franco-Spanish rivalry for naval supremacy.
- b) Battle of Trafalgar.
  - (i) Opposing forces and their deployment.
  - (ii) Description of the battle.
  - (iii) Analysis (strategy, tactics, application of principles of War and causes of defeat and victory).

#### 9. American Civil War (1861-65)

- i) Introduction
- ii) Causes
- iii) Events in brief
- iv) The Character of the Civil War
- v) Tactical development

#### SUGGESTED READINGS:

1. Das, S.T. (1970) An Introduction to the Art of War , Sagar Publishers, New Delhi.
2. Dupuy, R.Earnest (1970) The Encyclopedia of Military History, MacDonald, London.
3. Fuller, J.F.C. (1960) Conduct of War, Army Publishers, New Delhi.
4. Fuller, J.F.C. (1959) The American Civil War, Natraj Publishers, Dehradun.
5. Fuller, J.F.C. (1958) The Generalship of Alexander The Great, Natraj Publishers, Dehradun.
6. Fuller, J.F.C. (1971) Armament and History, Sagar Publishers, New Delhi.
7. Fuller, J.F.C. (1954) The Decisive Battle of the Western World Vol.I & II, Eyre and Spottiswoode, London.
8. Montgomery, Viscount (1968) A History of Warfare, William Collins, London.
9. Ropp, Theodore (2000) War in the Modern World, The John Hopkins University Press Baltimore.
10. Sarkar, J.N. (1960) Military History of India, M.C, Sarkar, Calcutta.
11. Sheppard, E.W. (1966) The Study of Military History, Natraj Publishers, New Delhi.

**SEMESTER–III**  
**DEFENCE AND STRATEGIC STUDIES**

**(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 20**

**Written: 10**

**Discussion: 05**

**Record & Viva-Voce: 05**

**Instructions for the Examiners:**

1. Examiners are required to set a question paper containing 10 marks of 1 hour duration in which he is supposed to set at least 3 questions of 5 marks each and students are required to attempt any two.
2. In the written practical Examination, choice in questions may be given to the students. The question paper is to be set at least half an hour before the examination.
3. Each student should be asked to deliver a talk/make short presentation for 5–10 minutes on any of the given topics.
4. Examiners should devote reasonable time for Viva–Voce Test and assess the practical record of a student.
5. For practical paper one group of Students will not comprise of more than 20 students at a time.

**A. WRITTEN TEST**

**Marks: 10**

1. Liquid Prismatic Compass (LPC): Features and functions of its various parts.

Attempt following exercise on the LPC:

- a. To determine magnetic north.
- b. Setting of the Map.
- c. To find out the bearing of a point from other point situated on the ground.
- d. To determine one's and enemy's position on the map by resection and intersection methods with the help of compass.
- e. To set the compass in a particular direction for night march
2. Determination of individual compass error.

**B. TOPICS FOR DISCUSSION/PRESENTATION:**

**Marks: 05**

- a. Historical Warfare
- b. Modern Warfare
- c. Impact of Industrial Revolution on Warfare

**C. RECORD & VIVA-VOCE**

**Marks: 05**

**SEMESTER–III  
GEOGRAPHY**

**RESOURCES AND ENVIRONMENT: WORLD PATTERNS  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 70**

**Practical Marks: 30**

**Note: Instructions for the Paper Setters:**

1. A compulsory question containing 15 short answer type questions will be set covering the whole syllabus. The students will attempt any 10 parts in about 40-50 words each. Each part will carry 3 marks (Total 30 marks).
2. The whole syllabus will be divided into 4 units. Eight questions will be out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1. Each question will carry 10 marks (40 marks)
3. Special credit will be given to suitable use of maps and diagrams.
4. In Unit–II question will focus on general aspects of the topic instead of on any individual resources.
5. Stencil outline maps are allowed.

**Objective:**

1. To understand concept of resources and their interface with environment;
2. To examine use and misuse of various resources, and analyse future prospects;
3. To study various methods and approaches of conservation and management of natural resources;
4. To understand the quantitative and qualitative aspects of human resources in spatial perspectives and the associated environmental problems.

**Course Contents:**

**UNIT–I**

**Environment and Resources:**

Meaning, nature and components of environment. Nature and definition of Resources. Resources environment interface.

Classification of Resources: Biotic and abiotic, Exhaustible and inexhaustible, Potential and Developed, Agricultural and Pastoral, Mineral and Industrial.

**UNIT–II**

**Utilization of Natural Resources:**

Distribution availability, utilization and conservation of water, minerals (in general) and energy resources; their economic and environmental significance and sustainability.

Types and distribution of forests—their economic and environmental significance and conservation.

Types and distribution of fisheries—their economic and environmental significance and conservation.

Major soil types and their distribution; problems of soil erosion and soil conservation.

### UNIT–III

**Human Resources:** Number, Growth, Distribution and Density.

**Population Resources Relationship:** Population- Resource Regions of the world.

### UNIT–IV

**Environment:** Natural and Human, Man-environment relationship—determinism, Possibilism, ecology.

**Biodiversity:** Loss of natural and agro-biodiversity.

**Environmental Issues:** Pollution; food security; deforestation; conservation of wild life.

### Books Recommended:

1. Agarwal, A. et.al. : The Citizen's Fifth Report, Centre for Science and Environment, New Delhi, 1999.
2. Chandna, R.C.: A Geography of Population, Kalyani Publishers, Ludhiana, 2014.
3. Chawla, I.N.: Geography of Resources, Bharat Prakashan, Jalandhar, latest edition.
4. Hartshorne Truman A and W. Alexander: Economic Geography, Prentice Hall, 1988, 3rd John Edition.
5. Kates, R.W. & Burton, I (Eds.): Geography, Resources and Environment, Vol. I & II, University of Chicago Press, Chicago, 1986.
6. Naresh Kumar: Environmental Studies, Sharma Publishers, Jalandhar 2009.
7. Trewartha, G.T.: A Geography of Population— World Patterns. John Wiley and Sons, New York, 1969.
8. Zelinsky, Wilbur: A Prologue to Population Geography, Prentice Hall, New Jersey, 1966.
9. Zimmerman E.W.: World Resources and Industries, Harpar, New York.
10. Chandna, R.C.: Environmental Geography Kalyani Publishers, Ludhiana, 2014.
11. Chawla. I.N.,: Resources & Environmental Bharat Publishers, Jalandhar.
12. Singh, J.S. & Singh, S.P. & Gupta S.R. (Eds.): Ecology Environment and Resources Conservation, Anamaya Publishers, New Delhi, 2008.

**SEMESTER–III  
GEOGRAPHY  
CARTOGRAPHIC REPRESENTATION OF GEOGRAPHIC DATA  
(PRACTICAL)**

**Time: 3 Hours**

**Max. Marks: 30**  
**Written Paper of 3 Hours: 15 Marks**  
**Practical Record (File): 08 Marks**  
**Viva: 07 Marks**

**Objective:**

1. To apprise the students with symbolization of different types of geographical data and depiction of various spatial data.
2. To provide training in application of various graphical methods of depicting geographic data.

**Course Contents:**

**Unit–I**

**Symbolization of Geographical Data:**

- a) **Point Symbols:** Dot, circle, sphere.
- b) **Line Symbols:** Isopleths and flow lines.
- c) **Areas Symbols:** Choropleth.

**Unit–II**

- a) Cartographic Representation of: Population data (distribution, density, growth, migration and literacy)
- b) Agriculture data (land utilization, distribution of crops, percentage of cropped area and irrigated areas).
- c) Industrial data (distribution, employment and production)
- d) Transport data (traffic flow).

**Note:**

1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 units. Eight questions will be set out of the whole syllabus, four from each unit. The students will be required to attempt two questions from each unit. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number 1. (Total 12 marks)
3. Evaluation of Practical Record will be done at the time of viva-voice examination.
4. A minimum of 16 sheet are to be prepared by each student.
5. In case, the candidate has applied for improvement, he/she should be required to make a fresh practical note book.
6. For practical classes, the number of students in one group shall not exceed fifteen.

**Books Recommended:**

**Essential Readings:**

1. Khullar, D.R.: Essentials of Practical Geography, New Academic Publishing Co., Mai Hiran Gate, Jalandhar, 2000.
2. Robinson, A.H.: Elements of Cartography, John Wiley, New York, 1995.
3. Singh, Gopal: Mapwork & Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi, 1995.
4. Singh, R.L. & Singh Raghunandan: Mapwork and Practical Geography, Central Book Depot, Allahabad, 1993.

**Further Readings:**

1. Birch, T.W.: Maps Topographical & Statistical; Clarendon Press, Oxford, 1949.
2. Garnett, A.: Geographical Interpretation of Topographical Maps, George Harrap & Co., London, 1953.
3. Monkhouse, F.J.: Maps and Diagrams, Methuen & Co., London, 1994 (reprint).

**SEMESTER–III  
PUBLIC ADMINISTRATION  
PERSONNEL ADMINISTRATION IN INDIA**

**Time: 3 Hours**

**Max. Marks: 100**

**Note:- Instructions for the Paper Setters / Examiners:**

**Each Question Paper may consist of two sections as follows:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

**Introduction:**

Meaning, Nature and Scope of Personnel Administration.  
Characteristics of Public Personnel Administration in India.  
Functions and Significance of Personnel Administration.  
Public Services and their role in Administrative System.

**UNIT–II**

**Civil Services in India:** Role and rationale of All India Services.

**Recruitment:** Meaning, Methods

**Promotion:** Meaning, Principles.

**Training:** Meaning, Objectives and Types, Training System in India.

**UNIT–III**

**Personnel Agencies:**

Functions and Role of Department of Personnel and Public  
Grievances, Union Public Service Commission, State Public Service  
Commissions & Staff Selection Commissions.

**UNIT–IV**

**Employer—Employee Relations and Working Conditions:**

Employee's participation in Management.  
Rights of Public Servant, Conduct and Discipline.  
Integrity in Public Services - Problem of Corruption.  
Lok Pal and Lok Ayukta. Central Vigilance Commission.

**Suggested Readings:**

1. Government of India, Report on Personnel Administration, New Delhi, 1970.
2. Glenn O. Stahl: Public Personnel Administration, 7th Ed., Oxford IBH Publication Compo, New Delhi, 1977.
3. Goel S.L. and Shalini Rajneesh, Public Personnel Administration: Theory and Practice, Deep and Deep Publications, New Delhi, 2002.
4. Indian Institute of Public Administration, Personnel Administration, New Delhi, 1970.
5. Sahib Singh and Sawinder Singh, Public Personnel and Financial Administration, New Academic Publisher, 2002.
6. Sinha V.M., Personnel Administration, R.B.S.A., Publisher, Jaipur, 1985.

**SEMESTER–III****WOMEN EMPOWERMENT****WOMEN EMPOWERMENT: BROAD ISSUES****Time: 3 Hrs.****Max. Marks: 100****Instructions for the Paper Setters:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

Women Empowerment and role of Social Institutions:-

1. **Women Empowerment:** Meaning and Efforts.
2. Role of Social Institutions (Family, educational institutions, media, press and Khap Panchayats).

**UNIT-II**

**Women Empowerment:** Commissions and Govt. Policies:-

1. Commissions and bodies for gender equality: central, State and local.
2. Recent policies of Government of India for Women Empowerment.

**UNIT-III**

**Women Empowerment:** Patriarchy, Matriarchy and Social Movements

1. Patriarchy and Matriarchy- Ideology practice and Women Rights.
2. Social and Religious Movements for Women Rights.

**UNIT-IV**

**Women Empowerment:** Legal Rights

1. **Women, Work and Livelihood:** Sexual Harassment at work place.
2. **Women and Legal Rights:** Matrimonial, Property and old Age Rights.

**SEMESTER–III  
ECONOMICS**

**MACRO ECONOMICS**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT–I**

Distinction between Micro and Macro Economics; Determination of Income and Employment : Classical and Keynesian models; Say's Law of Market and aggregate demand and aggregate supply.

Consumption functions; average (short-run and long run) and marginal propensity to consume; static and dynamic multipliers.

**UNIT–II**

**Investment:** Meaning, Demand schedules and factors affecting investment decision. Marginal Efficiency of Capital. Accelerator, multiplier-accelerator interaction.

Trade cycles-meaning, characteristics and phases. Samuelson and Hicks Models of trade cycles.

### UNIT–III

**Money:** Its functions and role. Money and Capital Markets (Introductory). Quantity Theory of Money. Fisher's and Cambridge's equations. Liquidity preference theory.

**Banking:** Definitions of banks. Credit creation and credit control.

### UNIT–IV

**Inflation:** Concept, Causes and cures. Inflation-unemployment Trade-off (only Phillips' contribution).

**Macroeconomic Policies:** Fiscal policy – meaning, objectives and instruments.

Monetary policy – meaning, objectives and instruments.

#### Recommended Texts:

1. Shapiro, E. *Macroeconomic Analysis*, Harcourt, Brach and World, New York, 1978.
2. Dernaburg, T.F. and MC Dougall D.M., *Macroeconomics : the Measurement, Analysis and Control of Aggregate Economic Activity*, McGraw-Hill, Kogakusha, Tokyo, 1972.
3. Gupta, S.B. *Monetary Economics : Institutions, Theory and Policy*, S. Chand, New Delhi, 2000.

**SEMESTER–III****INDUSTRIAL ECONOMICS–III****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT–I**

Organisational forms of the firm; Ownership, Control and management and goal conflict in a firm; alternative objectives of the firm; active and passive firm.

**UNIT–II**

Market Structure: Buyer's concentration; entry conditions and economies of scale; Market structure and association.

**UNIT–III**

Market conduct : Investment decisions: Theory and evidence; Financial decisions : retention pay-out ratio; advertising costs, profitability and market structure

**UNIT–IV**

Industrial performance : Industrial productivity, efficiency and capacity utilization – concept and measurement; firm size, optima and their reconciliation.

**Recommended Texts**

1. Devine. P.A. et. al. : An Introduction to Industrial Economics.
2. Koutsoyianinis. A. : Modern Microeconomics.
3. Barthwal R.R. : Industrial Economics, An Introductory text Book.
4. Hay, D.A. and D.J. Morris : Industrial Economics : Theory and Evidence, Oxford University Press, London.

**SEMESTER–III****QUANTITATIVE TECHNIQUES–III****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT–I**

**Differentiation:** Maxima and Minima of Functions, Partial derivatives, Higher order partial derivatives.

**UNIT–II**

**Integration (Excluding Trigonometric and Inverse Functions):** Indefinite Integrals; Integration by Partial Fractions; Integration by substitution; Integration by parts; Definite Integrals.

Application of Integration in Consumer Surplus and Producer Surplus.

**UNIT–III**

**Matrices:** Definition, Types, Addition, Subtraction and Multiplication of Matrices, Scaler Multiplication, Transposition, Determinants and their Properties, Minors and Co-factors, Rank of a Matrix, Inverse of a Matrix, Cramer's Rule for Solution of Simultaneous system of equations. Applications of matrices in economics.

**UNIT–IV**

**Linear Programming:** Formulation of problem, Assumptions, Graphical solution, Simplex method. Use of Artificial Variables, Dual Simplex method.

**Input-Output Analysis:** Basic concepts, Input-Output tables for closed and open economies, Leontief Basic Input-Output Model, Simple Applications of Input-Output Analysis.

**Recommended Texts:**

1. Yamane Taro: Mathematics for Economics, Prentice Hall of India, New Delhi, 1995.
2. Allen R.G.D.: Mathematical Analysis for Economists, ELBS and Macmillan Press, 1971.
3. Chaing, A.: Fundamental Methods of Mathematical Economics.

**SEMESTER–III**  
**AGRICULTURAL ECONOMICS & MARKETING**

**AGRICULTURAL ECONOMICS–II**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT–I**

Institutional Changes, land reforms, consolidation of holdings, abolition of intermediaries, ceiling on land-holdings-need, nature and evaluation with special reference to India.

New Agricultural Technology, its nature, role adoption and impact on output, employment and income distribution.

**UNIT–II**

Agricultural Price-Policy, demand and supply of Agricultural products. Evolution of price policy function, objectives, instruments, impact on income, output and employment.

**UNIT–III**

Agricultural Finance-Need for agricultural credit, agencies, role of finance in developing agriculture, role of Co-operative, Commercial Banks, RRBS, Role of NABARD.

Self help groups, joint liability groups. Service Area Approach, Lead Bank scheme, Kisan Credit Card. Growth in Agricultural credit, Repayment performance, Principals of credit worthiness.

**UNIT–IV**

Agricultural taxation case for agriculture taxation, case for special treatment, effect of agricultural taxation on economic development, agricultural taxation in India.

**Readings:**

1. A.S. Kahlon and: Agricultural Price Policy in India, D.S. Tyagi Allied Publishers, New Delhi (1983).
2. Rajbans Kaur: Agricultural Price Policy in Economic Development, Kalyani Publishers, New Delhi (1975).
3. P.C. Josh: Land Reforms in India – Trends and Perspectives, Allied Publishers, Bombay (1976).
4. C.B. Memoria: Agricultural Problems of India, Kitab Mahal (1985).

**SEMESTER–III**  
**RURAL DEVELOPMENT**  
**RURAL DEVELOPMENT–III**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT–I**

Marketing concepts and types, Importance and features; Defects and consequences; Co-operative Marketing; Government and marketing; Sales Promotion.

**Agricultural Exports:** Agro Processing; Present Position, Problems and Policy.

**UNIT–II**

**Agricultural Prices:** Market forces and Government intervention; Trends and causes of Rise and Fluctuations; Stabilisation and Policy, Buffer-Stocks and Imports.

**UNIT–III**

**Rural Indebtedness:** Nature, magnitude and consequences; Causes and remedial measure. Commercial Banks, Magnitude of help, Assessment of performance; Regional Rural Banks.

**UNIT–IV**

**Cooperative Credit:** Importance and Growth, Weaknesses and Improvements. Students should be given an elementary exposure to the subject.

**Suggested Readings:**

1. A.N. Aggarwal: Problems, Progress and Prospects, Indian Agriculture, 419 to 465 pages on Marketing.
2. A.N. Aggarwal: Rural Economy of India, Kundan Lal.
3. Sadhu and Singh: Fundamentals of Agricultural Economics, 227 to 251 pages on Agricultural Marketing.
4. K.B. Mukherjee: Agricultural Marketing in India.
5. Kohl, Richard L.: Marketing of Agricultural Products, Prentice Hall of India, 2002.
6. S.S. Acharya: Agricultural Marketing in N.D. Aggarwal: India, Third Edition, Oxford and IVth Pubilshers, New Delhi, 1999.

### SEMESTER-III

#### OFFICE MANAGEMENT AND SECRETARIAL PRACTICE (VOCATIONAL)

#### OFFICE PRACTICE (THEORY)

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Note: The candidates are allowed to use simple (Non-Scientific) Calculators.**

**Section-A:** The examiner will set 8 short questions from the entire syllabus. The candidate will have to attempt 6 questions out of 8 questions. Each question carrying 2 marks  
(6x2=12 Marks)

**Section-B:** The examiner will set 8 long questions in four parts, 2 questions from each unit. The candidate will have to attempt 4 questions selecting at least one from each unit. Each question carrying 12 marks.

(4x12=48Marks)

#### UNIT-I

**Office:** Meaning, Function, Importance, Concept of an Organization, Centralisation Vs. Decentralisation of Office Services, Principal departments of a Modern Office-correspondence, Typing and Duplicating, Filing, Mailing, General Office.

**Filing and Indexing:** Meaning and Importance of Filing, Essentials of a Good Filing System, Centralized vs. Decentralised Filing System, Methods of Filing Equipments.

#### UNIT-II

**Office Applications and Machines:** Types of commonly used appliances and machines-duplicator, accounting mechanism calculator addressing machines, punch card machines, franking machines, weighing and folding machines, sealing machine, dictaphonecheque protector, cash register, coin sorter, time recorder and such other machines.

**Modern Office Machines:** Computer Word Processor, Scanner their operation and use in the office set up. Introduction of computer-Importance, History and Types of Computers, Hardware and Software, Computer Operation. Word Processor-Concept of word processing, creating and editing documents, taking print out DO'S and DON'T'S in details from application point of view. Scanner-Introduction of Scanner, its importance and use in offices.

#### UNIT-III

**Mailing Department:** Meaning and Importance of Mail, Centralisation of Mail, Handling of work-its advantages, mail room equipment, sorting table and racks, letter openers, time and date stamps, postal franking machine, addressing machine, mailing scales, post offices guide.

**Handling Mail: Inward Mail-**Receiving, sorting, opening, recording, marking, distributing.

**Outward Mail: Folding** of letters, preparation of envelopes, sorting, scaling, weighing, stamping, entering, letter sent book or peon book, despatching rail parcel service, air mail service, courier service.

#### UNIT-IV

**Office Correspondence: Essentials** of a good letter, drafting of business letter, Enquiry, quotation, order, advice, making payment, trade reference, complaints, circular letters, follow up letters, official letters, semi officials.

**Assisting Visitors:** Office etiquetes, effective use of language, preparation of appointment schedules and maintaining visitors' diary furnishing desired information, instructing co-workers.

**SEMESTER–III**

**OFFICE MANAGEMENT AND SECRETARIAL PRACTICE (VOCATIONAL)**

**OFFICE PRACTICE  
(PRACTICAL)**

**Marks: 40**

1. Filing and Indexing:  
Practice in filing and indexing-alphabeticals numerically, arranging files subjectwise, searching a particular file, transforming of old files for future references, weeding out of records, developing card indexing system for the college library.
2. Computer Software as MS Office, Windows-98 etc. beobliqued with typewriter e-mail for practical on Recording of Inward outward mail.....
3. Recording of inward/outward mail—e-mail.
4. Or Windows-98/Electric Typewriter.
5. Drafting of the following (on the basis of actual information)
  - Application for a job
  - Interview letter
  - Appointment letter
  - Letter of enquiry
  - Office notes
  - Office order
  - Issue of tenders
6. Recording of inward/outward mail.

**Suggested Reading Materials:**

1. Office Practice Made Simple W.H. Allen Publishers by G.Whitehead 1974.
2. Office Management and Commercial Correspondence,. By BalrajDuggal 1998. Published by KitabMahal.
3. Office Management and Secretarial Practice, Gyan Publishers House, Delhi by V.P. Singh.
4. Business Correspondence and Office Practice by Thakkar Publication, Bombay, Nagamia and Bhal.
5. Business Communication by Doctor and Doctor Seth Publication, Bombay-4.
6. Commercial Correspondence by Majumdar.
7. Modern Commercial Correspondence by R.S.Sharma.
8. Modern Commercial Correspondence by Chandgadkar& Tele. Vikas Publications, Pune.
9. Secretarial Practice by A.H. Mehta & others.
10. Office Management and Commercial Correspondence by BalrajDuggal 1998. Published by KitabMahal, 1998.
11. Office Procedure & Secretarial Practice, O.P. Kuthiala, Pritam Publications.
12. Office Management R.K. Sharma, Sharma K. Gupta-Kalyani Publishers L. Sush (Nayar, 2003).
13. Office Management R.K. Choopra, Himalaya Publishing House, 2000.
14. Drafing& Office Procedure, Edgar Thrope.
15. Office Management by MarityenJuled Manning Crisp Publications, 2001.
16. Complete Office Handbook: Third Edition by SusonJaderstrom, 2002.

**SEMESTER–III**  
**TRAVEL AND TOURISM**  
**MANAGEMENT OF TRAVEL AND TOURISM**

**Time: 3 Hrs.**

**Marks: 100**

**Instructions for the Paper Setters:**

The Theory Paper consists of two Parts—A and B (short questions and long questions).

**Part–A:** The examiner will set 12 short questions, 3 questions from each section of 02 marks. The candidate will have to attempt 10 questions out of 12 questions.

**(10x02=20 Marks)**

**Part–B:** The examiner will set 8 long questions, 2 questions from each section of 20 marks. The candidate will have to attempt 4 questions out of 8 questions.

**(04x20=80 Marks)**

**UNIT–I**

**Strategic Planning and Strategic Marketing:** Business Environment, Alliances - Market Sharing, Takeovers and Mergers

**Operations Management:** Booking, Reservation, Blocking, Reconfirmation.

**UNIT–II**

**Project Planning:** Conceptualizing a Project, Project Cycle. Techno-economic survey.

**Project Review:** Need for a project review, Project appraisal and evaluation, Destination Development

**UNIT–III**

**Financial Management:** Financial statements, Financial ratios and performance, Credit system. Commission, Direct sales.

**Banking and Forex:** Banking Operations, Forex Management, Money Transfers.

#### UNIT–IV

**New Trends in Tourism:** Health tourism. Ski resorts and Adventure sports, Heritage tours and Eco-tourism, Rural tourism and Space tourism

**Event Management and MICE:** Role of events for promotion of tourism, Ganga Mahotsava, Lucknow Mahotsava and Taj Mahotsava, Concept of MICE, Conference/conventions and exhibitions.

#### **Suggested Readings:**

1. Harris, P. (1995). *Accounting and Finance for the International Hospitality Industry*, Butterworth Heinemann: UK.
2. Harrison, D. (ed) (1992). *Tourism and the Less Developed Countries*, Wiley: UK.
3. Goodall, B. and Ashworth, G. (eds.) (1988). *Marketing in the Tourism Industry: The Promotion of Destination Region*, UK.
4. O.Cornnor, P. (1996). *Using Computers in Hospitality*, Cassell: UK.
5. *National Geographic* and *Discovery*, Channel Programs.

**SEMESTER–III**  
**TOURISM AND HOTEL MANAGEMENT**  
**(VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** It will consist of 10 very short answer questions with answers to each questions up to five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage being 20 marks.

**Section–B:** It will consist of short answer questions with answer to each question upto *two pages* in length. Twelve questions will be set by the examiner and eight will be attempted by the candidate. Each question will carry five marks. The total weightage of the section shall being 40 marks.

**Section–C:** It will consist of essay type questions with answers to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 20 marks: total weightage of the section being 40 marks

**Introduction:** This paper is for the basic understanding of Tourism and Hospitality Industry and Hotel Management. Relationship between Tourism, Airlines and Hospitality Industry and for the basic understanding of Hotel Management

**UNIT–I**

**Front Office:** Types of Hotels, Pre-registration activities, Registration, Post registration activities, Front Office Salesmanship, Front Office procedures for Emergencies, Calculation of Room position, Job description of Front Office Cashier and Front Office Assistant, Foreign Currency, Night Auditor and its duties

**UNIT–II**

**House Keeping:** Role of Housekeeping in hospitality industry, Classification of Equipments, Cleaning Agents and Types; House Keeping Supervision—Importance, Checklist, typical areas usually neglected where special attention is required; Storage facilities and conditions, Cleaning procedures—Cleaning of occupied room, Cleaning of just vacated room, Inspection, Second Service, Replenishment of supplies and lines, Room checklist.

### UNIT–III

**Food and Beverage Service:** Sectors of Food & Beverage, French Classical Menu, Food and their Accompaniments, Restaurants and their subdivisions—Coffee Shop, Room Service, Bars, Banquets, Discotheques, Grill Room, Snack Bar, Night Club, Back area of Food and Beverage service—Still Room, Wash Up, Plate Room, Kitchen Stewarding; Classification of Crockery, Cultery, Glassware, Hollowware, Flatware; Maintenance of Equipments.

### UNIT–IV

**Food and Beverage Production:** Classification of Raw Materials; Foundation ingredients—Meaning, Action of Heat on Carbohydrates, Fats, Proteins, Minerals and Vitamins; Preparation of Ingredients; Classification of Equipments; Stocks—Meaning, Uses, Types, Points to be observed while preparing stocks; Sauces—Meaning, types and Recipes; Staff Arrangement in Kitchen.

**Note: Industrial Training for one month.**

### SEMESTER–III

#### TAX PROCEDURE AND PRACTICE (VOCATIONAL)

##### REGULATORY FRAMEWORK-DIRECT TAXES

**Time: 3 Hours**

**Max. Marks: 100**

**Note: The candidates are allowed to use simple (Non- Scientific) calculators.**

**Instructions for the Paper Setters:**

The question paper covering the entire course shall be divided into three sections as follows:-

**SECTION–A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

**SECTION–B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

**SECTION–C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions, will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

#### UNIT–I

Regulatory Framework: An overview of Income Tax Act, 1961 and Income Tax Rules, 1962, Income Tax Authorities. Important Definitions, Basis of Charge and Incidence of Tax

**Permanent Account No.:** Procedure for obtaining Permanent Account No. (PAN)—Filling and filing of application under Form No.49A.

**Payment of Tax:** Tax deducted at source, Advance Tax, Self Assessment Tax.

#### UNIT–II

Tax Deducted at Source: Filling and filing of applications from for obtaining TDS number under Form No.49B obligation of the person making payment, who and when the person is liable to deduct tax at source. Procedure and rate of Tax deducted at source on various payments.

#### Employers Obligations:

**Stage I:** Certificate to be issued to the recipient's-filing and issue of the various TDS Forms (16,16A and 16B).

**Stage II:** Deposit of tax deducted at source-filling and filing of the challan and deposit of tax.

**Stage III:** Submission of returns of TDS under Form No.24, Form No.26, 26A, 26B, 26C, 26D, 26E

#### Recipient's Obligations:

To obtain TDS certificate from payer; filling and filing of relevant certificates for lower or no deduction of tax at source (Form No.13C, 14, 14B, 15, 15A, 15AA, 15B, 15D, 15E, 15F, 15G, 15H, 15I).

(B) Advance Tax: Who is liable to pay advance tax, computation of advance tax, instalment and due date of Advance Tax, Interest payable by the assessee. Filing of challan and deposit of Advance Tax

### UNIT–III

**Return of Income:** Who is liable to file return of income, time limit, return of loss, Belated Return, Revised Return, Defective Return, Return by whom to be signed, filling and filing of Return of Income Tax under :

**Assessment Procedures:** Inquiring before assessment. Assessment under Section 143 (1), Self-assessment Tax, Regular Assessment under Section 143 (2), Best Judgment assessment, income escaping Assessment, issue of notice where income has escaped assessment. Time limit for Notice, Time limit for completion of assessment and reassessment.

### UNIT–IV

**Post Assessment Procedures:** Refund - Who can claim refund, Form No. 30 for Refund, Time Limit for claiming refund, Refund of appeal, interest on refunds; Rectification of mistake(s); Appeals and revisions: When an assessee can file appeal, appellate authorities, procedure for filing appeal, filling and filing of Form No.35, Form No.36, Time limit for filing appeal, Revision by Income-Tax Commissioner.

**Penalties & Procedure:** Procedure for imposing penalties, waiver of penalty, nature of default and penalties imposable.

**Transfer of Immoveable Property;** Filling and filing of Form No.37EE, Form No.37G, Form No. 37-I Tax clearance certificate and exemption certificate procedure and filling and filing of Form No. 31

#### References:-

1. Gaur, V.P. and D.B. Narang (2007), Income-Tax Law & Practice, Kalyani Publications, Ludhiana.
2. Prasad, Bhagwati (2006), Direct Taxes Law & Practice, Wihshwa Prakashan, New Delhi.
3. Sinhaima, V.K. and K. Sanghaima (2007) Direct Taxes Law and Practice Taximann Publications (P) Ltd. New Delhi, 2004.
4. Shrivastava M. (1981) Physical Policy & Economic Development in India, Chugh Publications, Alahabad.
5. Mehrotra H.C. and P. Mehrotra 2007. Income Tax Law & Accounts, Sahitya Bahawan Publications, Agra.
6. Taxman's in Director Tax Law as amended by Firance Act 2007. Taxman Allied Services (P) Ltd. New Delhi, 2004.
7. [www.incometaxindia.gov.in](http://www.incometaxindia.gov.in)

### SEMESTER–III

#### ADVERTISING, SALES PROMOTIONS AND SALES MANAGEMENT ADVERTISING–II (VOCATIONAL)

**Time: 3 Hours**

**Max. Marks: 100**  
**On the Job Training of 4 weeks**

The following pattern of setting of question paper shall be observed.

#### **Instructions for the Paper Setters:**

**Section–A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

**Section–B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

**Section C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

#### UNIT–I

**Advertising Media:** Types of Media-Print Media (News Paper and Magazines, Pamphlets, posters and brochures), electronic media (Radio, Television, Audio Visuals, Cassettes), other Media (Direct Mail outdoor media), their characteristics, merits and limitations.

Media scene in India. Problems of reaching rural audience and markets. Exhibitions and mela. Press Conference.

#### UNIT–II

**Media Planning:** Selection of Media category, their reach, frequency and impact. Cost and other factors influencing the choice of media. Media scheduling.

### UNIT–III

Evaluation of advertising effectiveness. Importance and difficulties. Methods of measuring advertising effectiveness. Pre-testing and post-testing. Communication effect. Sales effects. Regulation of advertising in India. Misleading and deceptive advertising and false claims.

### UNIT–IV

**Advertising Agencies:** Their role and importance in advertising. Their organisation patterns, Functions, Selection of advertising agency. Agency commission and fee. Advertising Department, its functions and organization.

#### **Suggested Reading:**

Same as for paper-2 (relevant chapters).

A consolidated Report on '**On the Job Training**' shall be prepared by every student and must be submitted in the college. The consolidated Report will be evaluated by the external examiner and shall be given the grades as follows:

O - Outstanding

A - Very Good

B - Good

C - Average

D - Unsatisfactory

In case, the training report is rated as unsatisfactory, the candidate shall have to submit it again incorporating the changes suggested by the examiner, within one month from the date of intimation to the candidate by the concerned college.

**Note: The candidates are allowed to use simple (Non- Scientific) calculators.**

**SEMESTER–III****COMMERCE****BANKING & INSURANCE****Time: 3 Hours****Max. Marks: 100****Teaching Hours: 80 Periods of 45 Minutes each.****Note: 1. The candidates are allowed to use simple (Nonscientific) calculators.****2. The question paper covering the entire course shall be divided into three sections as follows:**

**Section–A:** It will consist of 10 very short answer type questions with answers to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage being **20 marks**.

**Section–B:** It will consist of short answer type question with answer to each question upto two pages in length. Twelve questions will be set by the examiner and eight will be attempted by the candidates. Each question will carry six marks. The total weightage of the section shall be **48 marks**.

**Section–C:** It will consist of essay type questions with answer to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry sixteen marks, total weightage of the section being **32 marks**.

**UNIT–I**

**Introduction to Banking:** Definition, types and functions of Banks. Brief outlines of the history of Indian Banking, Banker customer relations.

**Deposit Mobilization:** Types of deposits, Procedure of opening a bank account. Types of account holders, Trends in deposit mobilisation in India.

**UNIT–II**

**Loans and Advances:** Forms of loans, overdraft, cash credit, joint financing, Hire purchase advances, Bills purchased/discounted. Principles of sound lending. Application for a bank loan. Analysis of credit worthiness of borrower, security and margin requirements. Modes of creating charges. Pledge, hypothecation, simple and equitable mortgages, Guarantees and indemnities. Trends in bank lending in India, Credit creation system by commercial bank.

### UNIT–III

**Negotiable Instruments:** Cheques-crossing and endorsements, payments of cheques, stop payment instruction, role of clearing house, Collection of cheques. Dishonour of cheques, Bills of Exchange-Discounting of Bills, Inland Remittances. Demand Draft, mail transfers, Telegraphic transfers etc.

### UNIT–IV

**Insurance:** Definition and advantages of insurance, kinds of insurance and forms of insurance organisation. Essentials of insurance contract, basic principles of insurance. Utmost good faith, insurable interest, indemnity subrogation, contribution, proximate cause. Introduction to general insurance-growth of general insurance, functions of insurance and contracts of insurance, Basic principles. Fire insurance, Introduction, standard form policy, scope of cover.

#### **Books Recommended:**

1. Dorfman, "Introduction to Risk Management and Insurance", 8th Edition, Prentice Hall of India, 2007.
2. Rejda, "Principles of Risk Management and Insurance", Pearson Education, 2007.
3. Tripathy and Pal, "Insurance and Risk Management", Prentice Hall of India, 2007.
4. Gupta P.K. "Insurance and Risk Management", Himalaya Publishing House, 2007.
5. Paul Justin and Suresh Padamalatha, "Management of Banking and Financial Services", Pearson Education, 2007.
6. Shekhar K.C. and SekharLakshmy, "Banking Theory and Practice", Vikas Publications, 2007.

### SEMESTER–III

#### TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL) TOURISM & MARKETING

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:**

**Section–A:** It will consist of 15 questions from the entire syllabus of the paper with answer to each question should up to 50 words. Students will be required to attempt any 10 questions. Each question will carry 2 marks. This section will be of 20 marks

**Section–B:** It will consist of 8 essay type questions, 2 from each unit with answer to each question should up to 5 pages. Students will be required to attempt any 4 questions. Each question will carry 20 marks. This section will be of 80 marks.

**Note:– The candidates are allowed to use simple (Non–Scientific) Calculators.**

#### UNIT–I

**Marketing:** Concept, Nature, Classification and Characteristics of services and their marketing implications developing marketing strategies for services firms.

#### UNIT–II

Linkages in Tourism and other sectors (Travel, Agency, Accommodation, Food, Nutrition, Catering).

#### UNIT–III

**Tour Packaging :** Concept, Characteristics, Methodology Consideration

#### UNIT–IV

Pricing of Tour Packing, Designing and Printing of Tour Brouchure.

#### **Suggested Readings:**

1. Kotler, Philip Marketing Management, Universal Publications, New Delhi, 2006.
2. Maccarthy, D.K.J.basic Marketing–A Management Approach, 2005.
3. Douglas Foster Travel and Tourism Management, 1985.
4. Negi, M.S.Tourism and Hotelling, 1997.
5. Wahab, S.Grampter, L Tourism Marketing: Tourism International Press & Roth Fibbs. London, 1976.
6. Stephan F. Witt & Louis Tourism Marketing and Management Handbook, Moutinch Prentice Hall, New York 1985.
7. Renal, A, Nykiel Marketing in Hospitality Industry (2nd Ed.) Van Nostrend Reinhold, 1986.
8. Hunter Mountaining Monument (Tourism in Your Business), Canadian Hotel and Restaurant Ltd., 1984.

**SEMESTER–III****MATHEMATICS****PAPER–I: ANALYSIS****Time: 3 Hours****Marks: 50****Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section–A and Section–B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section–A**

Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion. Series of non-negative terms. Comparison tests. Cauchy's integral tests. Ratio tests. Cauchy's root test. Raabe's test, logarithmic test. Demorgan's and Bertrand's tests. Kummer's test, Cauchy Condensation test, Gauss test, Alternating series. Leibnitz's test, absolute and conditional convergence.

**Section–B**

Partitions, Upper and lower sums. Upper and lower integrals, Riemann integrability. Conditions of existence of Riemann integrability of continuous functions and of monotone functions. Algebra of integrable functions. Improper integrals and statements of their conditions of existence. Test of the convergence of improper integral, beta and gamma functions.

**Books Recommended:**

1. Malik, S.C.: Mathematical Analysis, Wiley Eastern Ltd. (1991).
2. Apostol, T.M.: Mathematical Analysis, Addison Wesley Series in Mathematics (1974).
3. Narayan, S.: Integral Calculus, Sultan Chand & Sons.

**SEMESTER–III**  
**MATHEMATICS**

**PAPER–II: ANALYTICAL GEOMETRY**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section–A and Section–B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section–A**

Transformation of axes, shifting of origin, Rotation of axes, The invariants, Joint equation of pair of straight lines, equations of bisectors, Parabola and its properties. Tangents and normal, Pole and polar, pair of tangents at a point, Chord of contact, equation of the chord in terms of mid point and diameter of conic.

**Section–B**

Ellipse and hyperbola with their properties. Tangents and normal, Pole and polar. pair of tangents at a point, Chord of contact, Identifications of curves represented by second degree equation (including pair of lines). Intersection of three planes, condition for three planes to intersect in a point or along a line or to form a prism. Change of axes, Shift of origin, rotation of axes. Sphere, Section of a sphere by a plane, spheres of a given circle. Intersection of a line and a sphere. Tangent line, tangent plane, power of a point w.r.t. a sphere, radical planes.

**Books Recommended**

1. Gorakh Prasad and H.C. Gupta: Text Book on Coordinate Geometry.
2. S.L. Loney: The Elements of Coordinate Geometry, Macmillan and Company, London.
3. Narayan, S.: Analytical Solid Geometry, Sultan Chand & Sons (2005).
4. Kreyszig, E.: Advanced Engineering Mathematics.
5. Thomos, G.B. and Finney, R.L.: Calculus and Analytic Geometry.

**SEMESTER–III****STATISTICS****PAPER–I: ADVANCED PROBABILITY-I****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:**

1. Question paper will consist of two sections Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non–Programmable calculators.

**Section–A**

Two dimensional random variables, their joint probability mass function and joint probability density function, marginal and conditional probability distributions, independent random variables. Expected value of real valued function of two-dimensional random variables

**Section–B**

Covariance, correlation coefficient, conditional expectation and regression of the means. Bivariate normal distribution, marginal and conditional probability distributions associated with the bivariate normal distribution. Chebyshev's inequality and its applications.

**Book Recommended:**

1. Meyer, P.L. Introductory Probability and Statistical Applications, Addison—Wesley, (1970).
2. Ross, S.A., First Course in Probability, Pearson Education, 2007.

**Books Suggested for Supplementary Reading:**

1. Biswal, P.C., Probability and Statistics, Prentice Hall of India, 2007.
2. Miller, I and Miller, M., Mathematical Statistics with Applications, Seventh Edition, Pearson Education, 2007.
3. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

**SEMESTER–III****STATISTICS****PAPER–II: STATISTICAL INFERENCE–I****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:**

1. Question paper will consist of two sections Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non–Programmable calculators.

**Section–A**

Point estimation, estimator and estimates, criteria for good estimators, unbiasedness, consistency, efficiency and sufficiency (only the definitions and examples), Minimum variance unbiased estimator, Methods of estimation: moments and maximum likelihood method of estimation, interval estimation and interval estimate of the mean of a normal distribution.

**Section–B**

Neyman and Pearson's theory of testing hypothesis, the concepts of statistical hypothesis, two types of errors, critical region, significance level, power and power function. Most powerful test, The Neyman Pearson theorem (only the statement) and its applications for testing a simple hypothesis against a simple alternative.

**Book Recommended:**

1. Goon. A.M., Gupta. M.K. and Dasgupta B., Fundamentals of Statistics, Vol.I & II, World Press, 2005.
2. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

**Books Suggested for Supplementary Reading:**

1. Hogg. R.V. and Mckean, J.W. and Craig. A.T., Introduction to Mathematical Statistics, Pearson Education, 2007.
2. Miller, I and Miller, M., Mathematical Statistics with Applications, Pearson Education, 2007.

**SEMESTER–III****STATISTICS****PAPER-III: - Practical based on PAPER–II: STATISTICAL INFERENCE–I****Time: 2 Hours****Marks: 30**

Teaching time for practical paper would be one hour per week.

**List of practical exercises**

1. Exercises on unbiased, consistent, efficient and sufficient estimators
2. Exercises on methods of estimation
3. Exercises on interval estimation
4. Exercises on two types of errors, critical region, significance level,
5. Exercises on Most powerful test,

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and other one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non–Programmable calculators. The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

**SEMESTER-III**  
**CHEMISTRY (ORGANIC CHEMISTRY-A)**  
**(THEORY)**

**Time: 3 Hrs.**

**Marks: 35**

**45 Hrs (3 Hrs/week)**

**The question paper shall consist of two parts as detailed below:-**

**Part-A (Compulsory)**

It shall consist of 8 very short answer type questions (Q. No. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed  $1/3^{\text{rd}}$  of the page. Each question will be carrying one Mark. **(8 x 1 = 8 Marks)**

**Part-B**

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. No. 9 to 17) from the entire syllabus. Each Section will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question carries  $4\frac{1}{2}$  marks. **(6 x  $4\frac{1}{2}$  = 27 Marks)**

**Section-I**

**I. Stereochemistry of Organic Compounds**

**(15 Hrs.)**

Concept of isomerism. Types of isomerism. Optical isomerism, elements of symmetry, molecular chirality, enantiomers, stereogenic centre, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogenic centres, diastereomers, threo and erythro diastereomers, meso compounds, resolution of enantiomers, inversion, retention and racemization. Relative and absolute configuration, sequence rules, D & L and R & S systems of nomenclature. Geometric isomerism—determination of configuration of geometric isomers. E & Z system of nomenclature. Conformational isomerism—conformational analysis of ethane and n-butane; conformation of cyclohexane, axial and equatorial bonds, conformation of mono substituted cyclohexane derivatives. Newman projection and Sawhorse formulae, Fischer and flying wedge formulae. Difference between configuration and conformation.

**Section-II**

**II. Alcohols**

**(8 Hrs.)**

Classification and nomenclature. Monohydric alcohols—nomenclature. Acidic nature. Reactions of alcohols. Dihydric alcohols—nomenclature, methods of formation, chemical reactions of vicinal glycols, oxidative cleavage  $[\text{Pb}(\text{OAc})_4]$  and  $[\text{HIO}_4]$  and pinacol-pinacolone rearrangement.

**III. Phenols**

**(7 Hrs.)**

Nomenclature, structure and bonding, Preparation of phenols, physical properties and acidic character, Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion. Reactions of phenols—electrophilic aromatic substitution, acylation and carboxylation. Mechanisms of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Reimer Tiemann reaction.

### Section-III

#### IV. Aldehydes and Ketones

(15 Hrs.)

Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides, synthesis of aldehydes and ketones using 1,3-dithianes, synthesis of ketones from nitriles and from carboxylic acids. Physical properties. Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations. Condensation with ammonia and its derivatives. Wittig reaction. Mannich reaction. Use of acetals as protecting group. Oxidation of aldehydes, Baeyer-Villiger oxidation of Ketones, Cannizzaro reaction. MPV, Clemmensen, Wolff-Kishner,  $\text{LiAlH}_4$  and  $\text{NaBH}_4$  reductions. Halogenation of enolizable ketones. Halogenation of enolizable ketones.

#### Books Suggested:-

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
2. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
3. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: Wiley Eastern Limited, 1985, Vol. I, II, III.
4. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.
7. University General Chemistry, C.N.R. Rao, Macmillan.

**SEMESTER-III**  
**CHEMISTRY (PHYSICAL CHEMISTRY-B)**  
**(THEORY)**

**Time: 3 Hrs.**

**Marks: 35**

**45 Hrs (3 Hrs/week)**

**The question paper shall consist of two parts as detailed below:-**

**Part-A (Compulsory)**

It shall consist of 8 very short answer type questions (Q. No. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed  $1/3^{\text{rd}}$  of the page. Each question will be carrying one Mark. **(8 x 1 = 8 Marks)**

**Part-B**

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. No. 9 to 17) from the entire syllabus. Each Section will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question carries  $4\frac{1}{2}$  marks. **(6 x  $4\frac{1}{2}$  = 27 Marks)**

**Section-I**

**1. Thermodynamics-I**

**15 Hrs.**

Definition of thermodynamic terms: System, surroundings etc. Types of systems, intensive and extensive properties. State and path functions and their differentials. Thermodynamic process. Concept of heat and work.

**First Law of Thermodynamics:** Statement, definition of internal energy and enthalpy. Heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law- Joule-Thomson coefficient and inversion temperature, Calculation of  $w, q, dU$  &  $dH$  for the expansion of ideal gases under isothermal and adiabatic conditions for reversible process.

**Thermochemistry:** Standard state, standard enthalpy of formation-Hess's Law of heat summation and its applications. Heat of reaction at constant pressure and at constant volume. Enthalpy of neutralization. Bond dissociation energy and its calculation from thermo-chemical data, temperature dependence of enthalpy. Kirchhoff's equation.

**Section-II**

**II. Thermodynamics-II & III**

**15 Hrs.**

**Second Law of Thermodynamics:** Need for the law, different statements of the law, Carnot cycle and its efficiency, Carnot theorem. Thermodynamic scale of temperature.

**Concept of Entropy :** Entropy as a state function, entropy as a function of  $V$  &  $T$ , entropy as a function of  $P$  &  $T$ , entropy change in physical change, Clausius inequality, entropy as a criteria of spontaneity and equilibrium. Entropy change in ideal gases and mixing of gases.

**Third Law of Thermodynamics:** Nernst heat theorem, statement and concept of residual entropy, evaluation of absolute entropy from heat capacity data. Gibbs and Helmholtz functions; Gibbs function ( $G$ ) and Helmholtz function ( $A$ ) as thermodynamic quantities,  $A$  &  $G$  as criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change, Variation of  $G$  and  $A$  with  $P, V$  and  $T$ .

### Section-III

#### Equilibrium

##### III. Chemical Equilibrium

5 Hrs.

Equilibrium constant and free energy. Thermodynamic derivation of law of mass action. Determination of  $K_p$ ,  $K_c$ ,  $K_a$  and their relationship, Clausius-Clapeyron equation, applications.

##### IV Introduction to Phase Equilibrium

10 Hrs.

Statement and meaning of the terms-phase, component and degree of freedom, derivation of Gibbs phase rule, phase equilibria of one component system-water,  $\text{CO}_2$  and S systems. Phase equilibria of two component systems-solid-liquid equilibria, simple eutectic-Bi-Cd, Pb-Ag systems, desilverisation of lead. Solid solutions-compound formation with congruent melting point (Mg-Zn) and incongruent melting point, ( $\text{NaCl-H}_2\text{O}$ ), ( $\text{FeCl}_3\text{-H}_2\text{O}$ ) and  $\text{CuSO}_4\text{-H}_2\text{O}$ ) system. Freezing mixtures, acetone-dry ice. Non-ideal system-azeotropes-HCl- $\text{H}_2\text{O}$  and ethanol-water system. Partially miscible liquids Phenol-water, trines-thylamin-water, Nicotine-water System. Lower and upper consolute temperature, Effect of impurity on consolute temperature, immiscible liquids, steam distillation. Nernst distribution law-thermodynamic derivation and applications.

#### Books Suggested:-

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Inc, 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems; Pubs: Wiley Eastern Limited, 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
10. Metz, C.R., Theory and Problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book company, 1989.

**SEMESTER–III  
CHEMISTRY**

**(PRACTICAL)**

**Duration: 3½ Hrs.  
6 Period/Week**

**Marks: 30**

**Quantitative Analysis**

**Volumetric Analysis**

- Determination of acetic acid in commercial vinegar using NaOH.
- Determination of alkali content-antacid tablet using HCl.
- Estimation of calcium content in chalk as calcium oxalate by permanganometry.
- Estimation of hardness of water by EDTA.
- Estimation of ferrous and ferric by dichromate method.
- Estimation of copper using sodiumthiosulphate.

**Gravimetric Analysis**

Analysis of Cu as CuSCN and Ni as Ni (dimethylglyoxime)

**Organic Chemistry Laboratory Techniques**

**Thin Layer Chromatography**

Determination of R<sub>f</sub> values and identification of organic compounds.

- Separation of green leaf pigments (spinach leaves may be used).
- Preparation and separation of 2, 4. dinitrophenylhydrazones of acetone, 2-butanone, 2-Butanone, hexan-2 and 3-one using toluene and light petroleum (40 : 60).
- Separation of a mixture of dyes using cyclohexane and ethyl acetate (8.5:1.5).

**Practical Examination**

1) Volumetry / Gravimetry	16
2) Thin Layer chromatography	07
3) Viva-Voce	04
4) Note Book	03

**Books Suggested:-**

- Vogel's Textbook of Quantitative Inorganic Analysis (revised), J. Bassett, R.C. Denney, G.H. Jeffery and J. Mandham, ELBS.
- Standard Methods of Chemical. Analysis, W.W. Scott: The Technical Press.
- Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
- Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
- Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
- Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
- Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.

**SEMESTER–III  
PHYSICS**

**PAPER-A  
STATISTICAL PHYSICS & THERMODYNAMICS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Instructions for the Paper Setters:-**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt *one from each section. All questions carry equal marks.*

**UNIT–I**

Basic ideas of Statistical Physics, Scope of Statistical Physics, Basic ideas about probability, Distribution of four distinguishable particles into compartments of equal size. Concept of macrostates, microstates, Thermodynamic Probability, Effects of constraints on the system. Distribution of  $n$  particles in two compartments. Deviation from the state of maximum probability. Equilibrium state of dynamic system. Distribution of distinguishable  $n$  particles in  $k$  compartments of unequal sizes.

**UNIT–II**

Phase space and division into elementary cells. Three kinds of statistics. The basic approach in three statistics. Maxwell Boltzman (MB) statistics applied to an ideal gas in equilibrium. Experimental verification of law of distribution of molecular speeds. Need for Quantum Statistics – B.E. Statement of planck's law of Radiation Wien's Displacement and Stefan's law. Fermi Dirac (FD) statistics. Comparison of M.B, B.E and F.D statistics.

**UNIT–III**

Statistical definition of entropy, Change of entropy of system, additive nature of entropy, Law of increase of entropy, Reversible and irreversible processes, and their examples, work done in reversible process, examples of increase in entropy in natural processes, entropy and disorder, Brief review of Terms, Laws of Thermodynamics, Carnot Cycle, Entropy changes in carnot cycle, Applications of thermodynamics to thermoelectric effect, change of entropy along reversible path in P-V diagram. Heat death of universe.

**UNIT–IV**

Derivation of Maxwell Thermodynamics relations, Cooling produced by adiabatic stretching, Adiabatic Compression, change of internal energy with volume, Specific heat and constant pressure and constant volume. Expression for  $C_p-C_v$ , Change of state and Claypron equation.

**Text Reference Books:-**

1. Statistical Physics and Thermodynamics, V.S. Bhatia (Sohan Lal Nagin Chand), Jalandhar.
2. A Treatise on Heat, M.N. Saha & b.N. Srivastava (The Indian Press Pvt. Ltd., Allhabad), 1965.
3. Statistical Mechanics: An Introductory Text, Bhattacharjee, J.K. (Allied Pub., Delhi), 2000.
4. Statistical Physics, Bhattacharjee, J.K. (Allied Pub., Delhi) 2000.
5. Statistical Mechanics, B.B. Laud, (Macmillan India Ltd.) 1981.

**SEMESTER–III  
PHYSICS**

**PAPER–B: OPTICS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT–I**

**Interference of Light:**

Superposition of light waves and interference, young's double slit experiment, Distribution of intensity in young's double slit experiment, Conditions for sustained interference pattern, Coherent sources of light, Temporal and spatial coherence, Mathematical analysis of temporal coherence, Interference pattern by division of wave front, Fresnel Biprism, Fresnel double mirror, Llyod's single mirror, Displacement of fringes,

**UNIT–II**

**Interference by Division of Amplitude:**

Change of phase on reflection, Interference in thin films due to reflected and transmitted light, Need for extended source for interference by division of amplitude, Fringes of equal inclination and equal. Thickness non reflecting films, Newton's Rings.

Michelson Interferometer, Fabry Perot interferometer and etalon. Distribution of intensity in Fabry Perot fringes.

**UNIT–III**

**Diffraction:**

Huygen's fresnel theory, half-period zones, Zone plate, Distinction between fresnel and fraunhoffer diffraction. Fraunhoffer diffraction at rectangular and circular apertures, Effect of diffraction in optical imaging, Resolving power of telescope in diffraction grating, its use as a spectroscopic element and its resolving power, Resolving power of microscope. Resolving power of fabry-perot interferometer.

**UNIT–IV**

**Polarization:**

Plane Polarized light, Elliptically polarized light, wire grid polarizer, Sheet polarizer, Maul's Law, Brewster Law, Polarization by reflection, Scattering, Double reflection, Nicol prism, Retardation plates, Production Analysis of polarized light, Quarter and half wave plates.

**Text Reference Books:-**

1. Fundamentals of Optics, F.A. Jenkins and Harvey E White, (Mcgraw Hill) 4<sup>th</sup> Edition, 2001.
2. Optics, Ajoy Ghatak, (McMillan Indian) 2<sup>nd</sup> Edition, 7<sup>th</sup> Reprint, 1997.
3. Optics, Born and Wolf, (Pergamon Press) 3<sup>rd</sup> Edition, 1965.

**SEMESTER–III  
PHYSICS**

**(PRACTICAL)**

**General Guidelines for Practical Examination: (4.5h/week)**

- |    |   |                  |
|----|---|------------------|
| I. | The distribution of marks is as follows : | <b>Marks: 30</b> |
|    | i) One experiment                         | <b>15 Marks</b>  |
|    | ii) Brief Theory                          | <b>5 Marks</b>   |
|    | iii) Viva–Voce                            | <b>5 Marks</b>   |
|    | iv) Record (Practical file)               | <b>5 Marks</b>   |
- II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
- III. Number of candidates in a group for practical examination should not exceed 12.
- IV. In a single group no experiment be allotted to more than three examinee in any group.
1. To determine refractive index of glass and liquid using spectrometer.
  2. To determine the Cauchy's constants.
  3. To study the refractive index of a doubly refracting prism.
  4. To set up Newton's rings to determine wavelength of sodium light.
  5. To determine the wavelength by using plane diffraction grating (Use Hg source)
  6. To determine dispersive power of plane diffraction grating.
  7. To determine resolving power of a telescope.
  8. To determine resolving power of a grating.
  9. To measure an accessible (Horizontal and vertical) height using sextant.
  10. To measure inaccessible height by using sextant.
  11. Verify laws of probability distribution by throwing of similar coins.

**SEMESTER–III**

**HOME SCIENCE**

**CLOTHING TEXTILES (PART–I)  
(THEORY)**

**Time: 3 Hours**  
**Periods/week: 6**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:**

The question paper will consist of five sections: A,B,C,D and E. Section A, B,C & D will have two questions from the respective sections of the syllabus & will carry 10 marks each. Section E will consist of 5 short answer type questions covering the entire syllabus uniformly carrying 2 marks each.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from the section A,B,C & D of the question paper and entire section E.

**Section–A**

1. Equipments & supplies in clothing: Construction—their use & care

**II. Sewing Machine:**

- (a) Parts of Sewing Machine and its accessories
- (b) Common defects in sewing machine and their remedies
- (c) Care of Sewing Machines

**Section–B**

- I. Recording of Body measurements. Care to be taken while taking body measurement.
- II. Different methods of developing a design—Drafting, Pattern making, Draping (in brief) their advantages and disadvantages.

**Section–C**

1. Classification of textile fibers
2. Manufacture (in Brief) & properties of different fibers.
 

a) Cotton	b) Linen
c) Silk	d) Wool
e) Nylon	f) Polyester
g) Rayon Viscose & Acetate	

**Section–D**

1. Application of colour on fabric Dyeing—simple dyeing of cotton Resist Dyeing—Tie Dye and Batik
2. Printing.
  - a) Block Printing.
  - b) Screen Printing.
  - c) Roller Printing
3. Methods of Laundry/Washing.

**SEMESTER–III****HOME SCIENCE****CLOTHING TEXTILES (PART–I)  
(PRACTICAL)****Time: 4 Hours****Marks: 50****Periods/week: 6****Clothing Practical:** Make samples of the following:

- a) Tacking, hemming, buttonhole stitch, fasteners.
- b) Seams-counter seam, run and fell, French seam.
- c) Processes- continuous wrap, two piece placket opening, pleats, geathers into band, tucks.
- d) Embrodry-10 fancy embroidery stitches.

Drafting of the following:

- a) Childs bodice block.
- b) Sleeves- plain and puff sleeve.
- c) Collars-flat and raised peter pan, cape collar, baby collar.

**Drafting and Stitching of:**

- a) Bloomer
- b) Childs frock gathered.

**Textile Practical:**

1. Testing of Cotton, Wool & Silk, Nylon by Burning test.
2. Simple house hold dyeing of cotton fabric 12"x12".
3. Preparation of an article of Tie and Dye.
4. Preparation of article of block printing.

**Instructions for the Practical Examiner:**

There will be one practical exam consisting of two parts i.e clothing and textiles.

The division of marks and time will be as follows:

**Clothing- 2 hrs 30 min.**

- a. Drafting and stitching of garment-10 marks
- b. Sample / Embroidery-5 marks
- c. File and scheme work-10 marks

**Textiles Practical -1 hr 30 min**

- a. Block printing / tie and dye-10 marks
- b. Identification of fibers-5 marks
- c. File and viva-10 marks

**SEMESTER–III****COSMETOLOGY (VOCATIONAL)****PAPER–A  
(THEORY)**

**Time: 3 Hrs.**  
**Periods/Week-6**

**Total Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**Instructions for the Paper Setter:**

**Set 7 questions of 10 marks each. Students are required to attempt 4 questions.**  
**Paper setter can divide question in short of 5 marks each.**

**Content:****1. Hair**

- a) Composition and Structure of Hair
- b) Division & Forms of Hair
- c) Hair Growth & Regeneration
- d) Disorders & Disease of the hair and scalp
- e) PH scale with diagram

**2. Health and Diet**

- a) Basic Introduction of nutrients Carbohydrates, Protein, Fat, Vitamin A, D, C & B Complex, Calcium, Iron, only their main functions related to skin and hair. Food Sources.
- b) Role of Water for healthy skin
- c) Concept of Balanced Diet – 5 food groups principles of meal planning
- d) Overweight and Underweight causes and dietary management

**SEMESTER–III**

**COSMETOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**Time: 4 Hrs**  
**Periods/week: 6**

**Marks: 60**

**Content:**

**1. Hair Care**

- a) Types of shampoos and procedure of shampoo
- b) Hair rinses and hair conditions
- c) Hair spa acc. to scalp
- d) Corrective hair and scalp treatment :  
Treatment for dry, oily scalp, dandruff treatment, hair fall treatment with the help of steamer, vibrator, heat, high frequency

**2. Hair Styling**

- a) Basic Techniques and equipments used in styling
- b) Principle of Hair Design
- c) Shapes of Head, headlines, texture and density
- d) Different thermal hairstyles with the help of thermal equipments

**SEMESTER–III**  
**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**PAPER–A: KITCHEN SANITATION AND FOOD HYGIENE**  
**(THEORY)**

**Time: 3 Hrs.**

**Marks: 40**

**Pds-4 pds/week**

1. Theory paper will be of 3 hrs. duration.
2. Question paper should cover all the topics of the syllabus.
3. There will be 8 questions in all student need to attempt 5 questions (8 marks for each)
4. Question 1 is compulsory. Which contains short answer type question.

**Objectives:**

- 1) To provide knowledge about kitchen planning its equipment storage and sanitation.
- 2) To provide knowledge about food hygiene throughout the meal production and service process

**Course Content:**

- 1) **Kitchen Planning:** Size and type, Developing kitchen plan, designing kitchen - drainage, water supply, floors, walls, ceilings, ventilation and lighting and safety.
- 2) **Storage:** Location, types, sanitation, safety and security of stores.
- 3) **Equipments:** Classification, Selection, Material Used, Design, Installation Operation, Safety and Care.
- 4) **Dishwashing and Cleaning of Kitchen & Service Area:** Process and Unit, Use of Water, Detergent and Abrasive, Sterilization & Disinfectant Products Method & Use, Sanitizers.
- 5) **Safety at Work:** Causes of Accident, Safety Procedure & Training.
- 6) Safety in Food Procurement, Storage, Handling & Preparation, Control of Spoilage, Safety of Left Over Foods.
- 7) Hygiene of Food Handling During Receiving Storage, Preparation, Cooking, Serving, Holding, Cleaning and Disposal.
- 8) Personal Hygiene of Food Handlers - Dress, Grooming, Health & Habits.
- 9) Waste product handling: Planning for waste disposal. Solid wastes and liquid wastes
- 10) Control of infestation – rodent, flies & cockroaches control, use of pesticides.
- 11) Food adulteration laws and standard in India.

**Reference Book**

- 1) Mohini Sethi, Surjeet Malhan, Catering Management An Integrated Approach, New Age international (P) limited, New Delhi.

**SEMESTER-III****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)  
PAPER-B: QUANTITY FOOD PRODUCTION AND SERVICE  
(THEORY)****Time: 3 Hrs.****Marks: 40****Pds-4 pds/week****Instructions for the Paper Setter:**

1. Theory paper will be of 3 hrs duration.
2. Question paper should cover all the topics of the syllabus.
3. There will be 8 questions in all
4. Students need to attempt 5 questions (8 marks for each question)
5. Question 1 is compulsory which contains short answer type question.

**Objectives:**

1. To understand the application of basic principles to bulk production of the food.
2. To develop skills in menu planning, and standardization of receipts for bulk preparation.

**Course Content**

1. Aims and objectives of different food service outlets  
(a) Commercial (b) Institutional
2. Foods recommended for use in canteen, lunchroom and kiosks.
3. Menu planning, importance, factors, types A' La Carte and Table 'd hote, construction, writing and display.
4. Introduction to Indian Cuisine-North, South, East & West
5. Food production process - collecting ingredients, weighing and measuring, preparation of food, Some large quantitycooking technique. Effective use of left over food.
6. Quality in food service - Quantitative, sensory and nutritional quality in brief.
7. Food Service - Style of different types of service waiter, banquet, restaurant, room service, self service, buffet service, tray service, plate service.
8. Planning of service area, Table sizes and decor of service area.
9. Introduction of different Table Service Ware - Chinaware, Flatware and Cutlery, Glassware, Hollowware.

**Reference Book:**

1. Mohini Sethi, Surjeet Malhan, Catering Management An Integrated Approach.
2. New Age International (P) Limited Publisher Jalandhar.
3. Food and Beverage Service - Text book by Manoj Kumar Yadav.

**SEMESTER–III**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)  
PAPER–B: QUANTITY FOOD PRODUCTION AND SERVICE  
(PRACTICAL)**

**Time: 3 Hrs.**  
**Pds-6 pds/week.**

**Marks: 20**

**Note:– paper will be set on the spot by the examiner.**

**Instructions for the Paper Setters.**

- 1. Planning Menu: 5 Marks.**
- 2. Cooking 2 dishes from Menu: 10 Marks.**
- 3. Table Laying: 5Marks.**

- 1) Laying of table sets for different meals & Menus.
  - a) A' La Carte b) Table Hote c) Buffet
- 2) Napkin Folding.
- 3) Plan menu & cook recipe for lunch, High tea and Dinner party for special occasion.
- 4) Standardize recipe for bulk preparation. (at least for 20 person)
- 5) Daily and occasional cleaning of kitchen equipments, utensils counter, floor and cupboards.
- 6) Visit to Hotel / Canteen / Community / Kitchen / Café (2 Visits)

**Note:-** If there are more number of student then cafeteria can be started from this session.

**SEMESTER–III****FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)****FUNDAMENTALS OF TEXTILES  
(THEORY)**

**Time: 3 Hours**  
**Periods/week: 3**

**Max. Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**Instructions for the Paper Setters:-**

Examiner to set total 8 questions, two questions from each unit.

Students will attempt 1 question from each unit; each question will carry 10 Marks.

**UNIT–I**

- a) Introduction to Textiles and Its Importance in Fashion Designing
- b) Classification of Textile Fibers and Terminology–Fibre, Filament, Yarn, Fabric Grey Goods, Fiber Length, Elasticity, Evenness, Moisture Absorption, Fiber Strength

**UNIT–II****Properties & Manufacturing Process of Natural Fiber**

- a) Cotton
- b) Wool
- c) Silk

**UNIT–III****Properties and Manufacturing Process of Artificial Fiber**

- a) Nylon
- b) Rayon
- c) Spandex

**UNIT–IV****Brief Study of the Following Yarns:**

- a) Classification of Yarns – Carded and Combed, Woolen and Worsted, Filament and Spun
- b) Simple, Novelty, Bulk/Textured

**SEMESTER–III**

**FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)**

**PATTERN MAKING AND GARMENT CONSTRUCTION  
(PRACTICAL)**

**Time: 5 Hours**  
**Periods/week: 2x6**

**Marks: 60**

**Instructions for the Paper Setters:**

- Q. 1 from Part-A carrying 20 marks.
- Q. 2 from Part-B carrying 30 marks
- Q. 3 from File and scheme 10 marks

**PART–A**

**1. Pattern Making**

**I. Dart Manipulation by Flat Pattern (2-3 exercises under each heading)**

- a) Shifting of darts
- b) Combining darts
- c) Converting darts into gathers
- d) Converting darts into seam lines

**II. Drafting and Adaptation**

- a) Skirts-Basic Skirt, Peg Skirt, Pleated Skirt, Flared Skirt, Gathered With Yoke
- b) Tops-Cowl Neckline, Turtle Neckline

**PART–B**

**2. Construction**

- I) Design and Construct Tops with – Cowl and Turtle Neckline
- II) Design and Construct an Adult Skirt
- III) Traditional Embroidery-Phulkari, Kashmiri

**SEMESTER–III**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**  
**Lectures/week: 6**

**Maximum Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Ten Questions will be set; students are required to attempt any 6, carrying 10 marks each.

**Objectives:-**

1. To gain knowledge and insight regarding principles of early childhood care and education.
2. To develop the skills and techniques to plan activities in ECCE centers of different types.

**Course Contents:-**

Need, Importance and objectives of Early Childhood Education.  
Early childhood stimulation at home and school.  
Quality of home environment  
Historical Prospective of early childhood education  
Contribution of Agencies to ECCE in India  
Early Childhood Education Programmes in India and Abroad

**Essentials of Setting up Early Childhood Education Centers** – Building and physical facilities, staff, size of class, supervision and curriculum

**Types of Preschool Programmes** – Kindergarten type, Montessori, Nursery, Open type, Pre basic, Balwadi, Anganwadi, Day care centers

**Contribution of Agencies to ECCE in India-** ICDS-UNICEF, NCERT

**SEMESTER–III**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hrs.**  
**Lectures/week: 4**

**Marks: 40**

**Instructions for the Paper Setters:**

Paper will be set on the spot by the examiner

**Distribution of Marks**

Written Practical Test:	10 Marks
Practical File:	5 Marks
Oral Examination:	5 Marks
Class Performance:	10 Marks
Article/Activity Material:	10 Marks

**Course Contents:**

A visit to a “model” early childhood educational centre to observe curriculum implementation, indoor and outdoor activities and equipments.

Preparation of curriculum calendar (for one academic session) daily time table and detailed activity plan (for each day).

Developing an educational kit for enhancing conceptual aspects among pre-school children.

Activities for enhancing language development in pre school children.

**SEMESTER–III**

**FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)**

**FSQC-5: FOOD PROCESSING AND PACKAGING (THEORY)**

**Time: 3 Hours**

**Max. Marks: 75**

Instructions for the Paper Setters: Question paper will cover both the main topics and divided into three parts. Each part will contain at least two questions and students will be asked to attempt five questions in all with at least one from each part and not more than two from any part.

**PART-I**

1. Physical principles underlying food processing operations including thermal processing, ionising radiation, refrigeration, freezing, dehydration, etc.
2. Chemical principles in food processing, chemical changes in food that affect the texture, colour, flavour, odour, stability and nutritive quality during processing and storage.
3. Fats and Oils: Types and sources of fats and oils (animal and vegetable) Processing uses, storage, cost and nutritional aspects.
4. Sugar and Sugar Products: Different forms of sugar, (sugar, jaggery, honey syrup) manufacture, selection, storage and use preserves.
5. Salt types, uses in the diet.
6. Convenience Foods. Tea, coffee, chocolate and cocoa powder.
7. Processing cost and nutritional aspects.

**PART-II**

8. Fermentation technology, Enrichment and Fortification Technology. High protein food technology.
9. Quality control in food industry-methods of evaluation and control of the various aspects of quality of raw materials manufacturing process, the testing of finished products.
10. Spices and flavour
11. Preservatives and additives.
12. Extruded foods.
13. Food Irradiation.

### **PART-III**

14. Packaging of Foods.
15. Packaging function
16. Approaches to packaging development, Specification and Quality Control, Interaction of Food & Packaging.
  - 1) Evaluation of Food Packages
  - 2) Importance of Packages
  - 3) Packaging criteria, appearance protection, function cost, materials & forms of packaging.
  - 4) Packaging methods & performances.
  - 5) Packaging specification & control of packaging quality.
  - 6) Food & Food package interaction.
  - 7) Food packaging & laws
  - 8) Packaging evaluation-package life theory and testing packaging materials.
  - 9) Self life testing.

#### **Recommended Books:**

1. Technology of Cereal, Legumes and Oil Seeds – Chakrobarty S. Deor for IBH Pub.
2. Cereal Tech. – Kent.
3. Preservation of Fruits and Vegetables – Girdhari Lal.
4. Dairy Tech. – Sukumar De.
5. Waste Treatment.
6. Food Packaging Sacharow and Griffir Avi. Publising Co.
7. Packaging Management. Briston & Neill. Gower Press.
8. Food & Packaging Interaction. Hotchikess American Chemical Society.
9. Packaging for Climatic Protection Cains, Oswin Paine.

**SEMESTER–III**

**FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)**

**FSQC-6: FOOD PROCESSING & PACKAGING (PRACTICAL)**

**Max. Marks: 25**

**List of Practicals:**

1. Determination of physical characteristics of cereals.
2. Milling of wheat into flour.
3. Determination of wet & dry gluten contents.
4. Determination of free fatty acids in flour and rice bran.
5. Milling of rice.
6. Parboiling of rice.
7. Identification of packaging materials.
8. To estimate the shelf life of packaged food.
9. To determine grease resistance of packaging material.
10. Determination of water vapor transmission rate of various packaging materials.
11. To find out the porosity of tin plate.
12. To find out the tin coating weight.
13. To find out the uniformity and amount of wax on wax paper.
14. To see the chemical resistance of packaging materials.
15. Visits to various industries dealing with food packaging material like, paper board and metal.

**SEMESTER–III**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER–A (THEORY)**

**Time: 3 Hrs.**

**Marks: 50**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**Note: Instructions for the Paper Setters:**

- (a) The question paper will cover the entire syllabus.
- (b) Questions should be based on world famous painting and sculptures whose slides are easily available.
- (c) Question paper should cover the syllabus uniformly.
- (d) The paper setter should set the paper in two sections, A and B.
- (e) The division of the marks will be as under:

**Section–A:** 25 marks for 25 objective questions. Each question carries 1 mark.

**Section–B:** 25 marks for 5 questions. The examiner will set 8 questions. The candidate will attempt 5 questions of 5 marks each.

**1. Classical Sculptures:**

• **The Guptas:**

(A) **Mathura:**

- (i) Standing Buddha
- (ii) Vishnu

(B) **Sarnath:**

- (i) Seated Buddha
- (ii) Buddha from Sultanganj

**2. Postclassical Sculptures:**

• **Ellora:**

- (i) Ravana shaking mount Kailasha
- (ii) Abduction of Sita

• **Elephanta:**

- (i) Trimurti
- (ii) Marriage of Shiva and Parvati

• **Mahaballipuram:**

- (i) Descent of the Ganges
- (ii) Mahisasurmardini

**3. Chola Bronzes:**

- (i) Parvati
- (ii) Shiva Natraja
- (iii) Kali

**SEMESTER–III****FINE ARTS  
(DRAWING & PAINTING)****PAPER–B  
(PRACTICAL)****DESIGN 2D & 3D****Time: 5 Hrs.****Marks: 25****Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Study of 2-dimensional and 3-dimensional designs based on Folk forms. Any folk motif with proper shading is a 2-D design and cardboard pasted on handmade sheet in form of various folk motifs is a 3-D design- this is only an example; any other materials can also be used to create 3-D.

**Medium:** Poster colours**Size:** ½ Imperial

**SEMESTER–III**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER–C  
(PRACTICAL)  
HEAD STUDY (MALE/FEMALE)**

**Time: 5 Hrs.**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Rendering of *Head* (Male/Female head) from life or cast. Emphasis should be given on structure, volume, proportion, light, shade and texture in Monochromatic colour scheme.

**Medium:** Any medium

**Size:** ½ Imperial

Candidates will submit-

- (i) 5 sheets of each paper.
- (ii) Sketch book containing 50 sketches.

**SEMESTER–III**

**HISTORY OF ART**

**Time: 3 Hours**

**Max. Marks: 100**

**Note:** Instructions for the Paper Setters:

- (a) The question paper should cover entire syllabus. It will contain subjective answer questions.
- (b) The paper-setter should set 12 questions in all. Students will attempt 10 questions of 10 marks each.

**Part – I**

History of Indian Painting from earliest time to C 9<sup>th</sup> Century A.D. to C.1800 A.D .Development of miniature painting: Eastern India, Western India, Mughals, Rajasthan-Mewar, Bundi, Kishangarh, Pahari-Basohali, Guler, Gandharas, Kangra.

**Part – II**

History of Indian Sculpture under the sunga Gandhara and Guptas- Mathura, Somnath, Deogarh, Ajanta.

**SEMESTER–III****GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(THEORY)****Time: 3 Hrs.****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Section–A:** 2 Marks for 10 short answer questions. All the questions are compulsory.**2x10=20 Marks****Section–B:** The examiner will set 5 questions. The candidate will attempt  
3 questions of 10 Marks each.**3x10=30 Marks**

1. Introduction to Stone setting.
2. Different styles of stone setting like Prong, Bezel, Channel etc.
3. Introduction: Ruby, cat's eye, Pearl, Zircon, coral, Emerald, Topaz, Sapphire

**SEMESTER–III**

**GEMOLOGY AND JEWELLERY DESIGN VOCATIONAL)  
(PRACTICAL)**

**Time: 6 Hrs**

**Marks: 50**

Development of a design of a Pendant, Broche, Armlet, etc using mark-making, Bead-making, Twisting, stone-setting techniques.

**Exercise on:**

1. Mark making
2. Filling
3. Sowing
4. Puzzle work
5. Tube making

**SEMESTER–III**  
**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

**PHOTO JOURNALISM**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:**

1. Total number of questions to be set: 26
2. Total number of questions to be attempted: 20
3. Question Paper will be divided in three parts objective.
4. Section– A will consist of 10 objective type questions. All questions will be compulsory. Each question will carry 1 (one) mark. **(Total: 10 Marks)**
5. Section– B will consist of 12 short answer type questions. Student will attempt 8 (eight) questions. Each question will carry 3 (three) marks. **(Total: 24 Marks)**
6. Section–C will consist of 4 essay answer type questions. Student will attempt 2 (Two) questions. Each question will carry 8 (eight) marks. **(Total: 16 Marks)**

**Course Contents:**

1. Scope of Photo Journalism. Importance of Picture & Magazine in News Program.
2. Reporting through Photos. (News of Parliament Sports, Development Stories, Features and Interviewing etc).
3. Photo-Visualisation of Audience Tastes, Needs and Newsfall.
4. Equipment for Photo-Journalism (Choice of right equipment i.e. Lens, Camera, Flash raw, Stock for a particular assignment).
5. Introduction and Practice of Rapid Development Finishing, Drying.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	The Photographers Manual	John Frama
2.	Close-Up Photography	Johathan Hilton

**SEMESTER–III**  
**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

**STILL PHOTOGRAPHY & CAMERA ACCESSORIES**  
**(PRACTICAL)**

**Time: 6 Hours**

**Practical Marks: 50**

**Instructions for the Paper Setters:**

1. The Paper will be set by the External Examiner on the spot considering the syllabus.
2. Creative Work on the part of the students is to be emphasized.
3. Technical Competence is expected. The students should also use Updated and Latest Techniques in his/her work.
4. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. and can be evaluated by the Examiner on Computer or Laptop.
5. Extra weightage will be given for creative and professional approach.

**Instructions for Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by External Examiner as per requirement.

**Course Contents:**

1. Shutter types – Their limitations.
2. Circle of Confusion, its Effect on Sharpness.
3. Techniques of Photographing Action.
4. Aperture and its effect, Aberration, Resolution, Depth of Field, Depth of Focus.
5. Lenses/Optical Materials, Lens Coating, Plastics/Glass, Normal Standard, Tele Lens, Wide, Zoom, Micro, Macro Lens, Laws Governing Depth of Field.
6. Supplementary Lenses.
7. Basic Reprography / Digital Camera.
8. Flash-type, Working, Exposure.
9. Exposure: Method of Estimations, Types of Exposure Meters & their Comparison, Reciprocity Failure.
10. Types of Films & their Characteristics Filters: Types, Use, Optical Limitation, Filter Factor.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Digital Photography Special Effects	Michael Freeman
2.	The Essential Photography Manual	Tim Daly
3.	The Everything Digital Photography	School

**SEMESTER–III**  
**APPLIED ART**

**ART APPRECIATION & ADVERTISING**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:**

1. No. of questions to be set : 35
2. No. of questions to be attempted: 25
3. The questions are to be equally distributed among all the topics of the Syllabus.
4. Each question will carry 2 (Two) marks.

**Course Contents:**

1. Introduction to Advertising.
2. Types of Advertising.
3. Different Medias of Advertising.
4. Brochure (Pamphlet, Handbill, Folder, Leaflet, Catalogue, Booklet).
5. Newspaper v/s Magazine.
6. Poster and its types.
7. Scope of Commercial Art.
8. Commercial Art and Society.
9. Qualities of a Layout.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	A Handbook of Advertising Techniques	Tommy Harrison
2.	Ogilvy on Advertising	David Ogilvy
3.	Advertising as a Career	Subrate Banerjee

**SEMESTER–III  
APPLIED ART**

**LAYOUT (PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Medium:** Layout & Illustration

**Size:**

Newspaper: Columns x Cms

Magazine: 8 1/2" x 11"

Illustration: ¼ imperial

**Instructions for the Paper Setters:**

1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Students will have to complete Five Projects during the course.
4. Students can use Magazines/Books/Newspapers as reference for their Class Work & Examination.
5. Topic for the Examination will be set by the external examiner on the spot after consultation with the Class Teacher.
6. Extra weightage will be given for creative and professional approach.

**Instructions for Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.

**Course Contents:**

Prepare Commercial and Educational Layouts

Black & White for Newspaper & Coloured (Multicolour) Layout for Magazine.

Prepare Illustration based on Stories, Drawing of Objects, Birds and Animals, different scenes etc.

**Note:** Limited Reference while preparing rough visual is allowed

**SEMESTER–III  
SCULPTURE**

**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Note:** Instructions for the Paper Setters:

1. The paper setter should set 12 questions in all and students shall attempt 10 questions.
2. Each question will be of 5 marks

**Chapter:-**

- (1) Indus Valley Sculptures and seals.
- (2) Mauryan Dynasty (Sculptures and Pillars)
- (3) Introduction of Stupa, Vihara and Chaitya.
- (4) Shunga Dynasty (Bharhut Stupa)
- (5) Sanchi Stupa

## SCULPTURE

### (PRACTICAL)

**Time: 6 Hrs.**

**Marks: 50**

- (1) Low Relief Sculpture in Terracotta (Total No-1 Based on Birds/Animals/ Human Figures (Min Size 8x8 inches)
- (2) Head study in clay, Modeling from life Size, these works should be produced in plaster of pairs (Total Number of works -2)

### **Books Recommended:**

1. S.K.Sarswati                      A survey of Indian Sculptures.
2. Stella Krmisch                      Indian Sculptures.
3. Roy C. Craven                      Indian Art A Concise History
4. S.M Asgar Ali Kadvi                      Moorti Kala ka Itihas
5. Benjamin Rowland                      The Pelican History of Art
6. Dr. G.K. Aggarwal                      Shilpa Drashan.
7. Dr Gyacharu Tripathi                      Prachin Bharat Ki Kala

**SEMESTER–III  
MUSIC (VOCAL)  
(THEORY)**

**Theory: 3 Hours**  
**Practical: 20 Min. for each student**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Teaching Work load:**  
**Theory: 3 Periods per week**

**Practical: 9 Periods per week**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as Base Instrument in Vocal Music (Practical).
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. The paper setter will set **Eight** questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt **Five** questions in all.
5. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
6. Candidate can take Tabla subject along with Music Vocal or Music Inst.
7. Non-Detail Raga: Dhanasai, Tirath, Madhmat Sorey

**SEMESTER–III**

**MUSIC (VOCAL)  
(THEORY)**

**Time: 3 Hours**

**Marks: 50**

1. Historical Development of Indian Music during 14<sup>th</sup> to 17<sup>th</sup> century with special reference to Akbar Period.
2. Definition and explanation of the following Musical Terms: Alap, Bol Alap, Bol Baant, Upaj.
3. Detailed Study of Tanpura and Sahayak Naad.
4. Detailed knowledge of Dhrupad & Dhammar Styles of Singing.
5. Varieties of Tanas.
6. Description and notation of the following Ragas: Bhimplasi, Des and Vrindavani Sarang.
7. Description and notation of the following Talas: Ektal and Sooltal.
8. Contribution and Life Sketches of the following musicians: Vinayak Rav Patwardhan, Bade Ghulam Ali Khan, Pt. Bheem Sen Joshi.
9. Importance of Laya and Taal in music.
10. Salient features of Kirtan Chaunkis in special context of Gurmat Sangeet.

**SEMESTER–III**

**MUSIC (VOCAL)  
(PRACTICAL)**

**Time: 20 Minutes**

**Marks: 50**

1. Ability to play five alankars on the Harmonium based on the Kafi Thata.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Bhimplasi, Des and Vrindavani Sarang.
4. One Lakshan Geet in Prescribed Raga.
5. One Dhrupad with Dugan Laykari in any of the prescribed Ragas.
6. Ability to recite Ektal and Sooltal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Brief Knowledge of following Ragas: Dhnashri, Sorath and Madhmaad Sarang.
8. Ability to play theka of Rupak Tala on tabla.
9. Ability to play Dhun of any Folk Song of Punjab on Harmonium/any instrument.

**Books Recommended:**

1. Bharatiya Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by PunjabiUniversity, Patiala.
4. Sangeet Vishard, Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan, Shanti Govardhan.
6. Hamare Sangeet Rattan, Sangeet Karyalaya, Hathras.
7. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
8. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
9. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

**SEMESTER–III****MUSIC (INSTRUMENTAL)  
(THEORY)**

**Theory: 3 Hrs.**  
**Practical: 20 Min. for each student**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Teaching work load:**  
**Theory: 3 periods per week**

**Practical: 9 periods per week**

**Instructions given to the examiners are as under:–**

1. There should not be more than fifteen students in a batch for practical examination.
2. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
3. The paper setter will set eight questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions in all.
4. The External Examiner will set question paper for practical on the spot.
5. Candidate can take both subjects .i.e Instrumental music and Vocal music as elective subjects.
6. Candidate can take Tabla subject along with instrumental music or vocal music.

**SEMESTER–III**  
**MUSIC (INSTRUMENTAL)**

**(THEORY)**

**Time: 3 Hours**

**Marks: 50**

1. Historical development of Indian Music during medieval period i.e. from 12<sup>th</sup> to 15<sup>th</sup> century.
2. Detailed study of “Naad”
3. Life Sketch and Contribution of Ustad Inayat Khan & Ustad Abdul Halim Zafar Khan.
4. Techniques and Methods of tuning of Sitar.
5. Brief knowledge of the following:– Meend, Ghaseet, Kan, Krintan, Khatka.
6. Description and notation of the prescribed Ragas: Bhimplasi, Asawari and Des.
7. Brief knowledge of the following Ragas: Kafi, Jaunpuri and Sorath
8. Brief knowledge of the following Talas: Ektal & Sooltal.
9. Classification of Instruments used in Gurmat Sangeet.
10. Contribution of Guru Nanak Dev Ji towards Indian Music.

**Books Recommended:**

1. Rag Parichay (Part 1,2,3) by H.C. Shrivastav.
2. Sangeet Shastar Darpan (Part I & II) by Shanti Govardhan.
3. Sangeet Visharad, Sangeet Karyala Hathras.
4. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
5. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh
6. Sangeet Subodh by Dr. Davinder Kaur.
7. Punjab ki Sangeet Parampara by Geeta Paintal.
8. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, Chandigarh.
9. Sangeet Roop by Dr., Davinder Kaur, Patiala.
10. Bhartiya Sangeet ka Itihas by Umesh Joshi.
11. Bhartiya Sangeet ke Vadhya, Dr. Lal Mani Mishra.
12. Nibandh Sangeet, Sangeet Karyala, Hathras.

**SEMESTER–III**  
**MUSIC (INSTRUMENTAL)**

**(PRACTICAL)**

**Time: 20 Minutes**

**Marks: 50**

1. Ability to play ten Alankars on Sitar in the swaras of Kafi Thaata.
2. One Maseetkhani Gat in any of ragas prescribed in the Course. (Bhimplasi, Asawari and Des)
3. One Razatkhani Gat in each of the prescribed raga with Toras and Jhaala.
4. Ability to recite on hand, the Talas, Ektal & Sooltal in Ekgun & Dugun Layakaris.
5. Ability to play theka of Rupak Tala on Tabla.
6. Ability to sing a Cinematic song with any instrument.
7. Brief Knowledge of the following Non–detailed Ragas: Kafi, Jaunpuri and Sorath.

### SEMESTER–III

#### INDIAN CLASSICAL DANCE (THEORY)

**Time: 3 Hours**  
**Periods/week: 3**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

#### Instructions given to the examiners are as under:-

1. There should not more than fifteen students in a batch for practical examination.
2. Harmonium will be allowed as accompaniment to perform Nagma.
3. Separate practical paper should be set for each class from practical Paper-'B' of prescribed syllabus on the spot.
4. The paper setter will set eight questions. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions.

#### Course Contents:

1. Study of Tandava and Lasya.
2. Knowledge of characteristics of Kathak Nritya.
3. Study of the Kathakali Dance with its historical background, style costumes and music etc.
4. Knowledge of Samyukta Hastas according to Abhinaya Darpan with their uses in Dance.
5. Knowledge of the Folk Dance of Uttar Pradesh
6. Biography and contribution of the following Dance Gurus in their respective field of specialization.
  - i) Uday Shankar
  - ii) Shambhu Maharaj
7. Essay on:
  - i) Relation of Dance with other fine arts.
  - ii) Dancing: A Door to Devine
8. Notation of:

#### (i) Ektaal (Matra-12)

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran-1
- h) Chakardar Paran -1
- i) Kavita-1

**(ii) Sooltaal (Matra-10)**

a) Tatkar in Thah, Dugun & Chougun Layakaries.

b) Thaat- 2

c) Tehai-1

d) Amad-1

e) Salami-1

f) Tora-2

g) Paran-1

h) Chakardar Paran -1

i) Kavit-1

9. Discription and Notation of the following Talas in Thah, Dugun, Tigunand Chaugun layakaries:

(i) Ektaal      (ii) Sooltaal      (iii) Choutaal.

10. Notation of Nagma in:

(i) Ektaal      (ii) Sooltaal

**SEMESTER–III****INDIAN CLASSICAL DANCE  
(PRACTICAL)**

**Time: 20 Minutes**  
**Periods/week: 9**

**Marks: 50**

**Instructions for Examiner:** The Examiner will set practical paper on the spot.

1. Ektaal (Matra-12)

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran-1
- h) Chakardar Paran -1
- i) Kavit-1

2. Sooltaal (Matra-10)

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran-1
- h) Chakardar Paran -1
- i) Kavit-1

3. Practical demonstration of two Gat Nikas

4. Padhant of all the Practical material mentioned above.

5. Ability to demonstrate Theka of Ektaal, Choutaal and Sooltaal by hand in Ekgun, Dugun, and Chaugun layakaries.

6. Practical demonstration of Samyukta Hastas according to Abhinaya Darpan.

7. Ability to play Theka of Ektaal on Tabla.

8. Ability to sing A Bhajan by Harmonium.

**Books Recommended:**

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.
2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers, New Delhi, 2006.
3. Atihasik Pripeksh Mein Kathak Nritya, Maya Taak, Knishka Publishers, New Delhi, 2005.
4. Nibandh Sangeet, Laxmi Narayan Garg, Sangeet Karyalaya, Hathras, 2004.
5. Kathak Nritya Shiksha Part-1, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP)

**SEMESTER–III****TABLA  
(THEORY)**

**Theory: 3 Hours**  
**Practical: 20 Minutes for each student**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Teaching work load:**  
**Theory 3 periods per week.**

**Practical – 9 periods per week.**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examinations.
2. Harmonium will be allowed as accompaniment to perform the Nagma.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for practical paper should also be sent.
4. The paper–setter will set eight questions. The candidate will be asked to attempt five questions. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each.
5. Candidate can take Tabla subject with Vocal or Instrumental Music (Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai, Rabab, Saranda, Taus, Santoor and any other Swar Vadhya to the played on the basis of Indian Classical Music).

### SEMESTER–III

#### TABLA (THEORY)

**Time: 3 Hours**

**Marks: 50**

1. Define and Explain the following terms:
  - a. Tabla Vada
  - b. Sangat Kar
  - c. Theka
  - d. Tihai
2. Detailed knowledge of Gharanas of Tabla and Pakhawaj :
  - a. Delhi
  - b. Punjab
  - c. Ajarara
3. Life Sketch:
  - a. Pt. Kanthe Maharaj
  - b. Pt. Anokhe Lal
  - c. Ahmed Jaan Tharikwa
4. Essay on the place of Tabla in Khayal Gayan Shally.
5. Define Paran. Explain Chakardar Paran in detail with notation of one Chakardar Paran in Rupak Tal.
6. Use of Tabla in Music Therapy.
7. Notation and description of the following:–
  - a. Rupak: Laggis (three), Mukhra (two), Tihai (two), Chakardar Paran (One).
  - b. Jhap Tal: Two Kayadas with five Paltas each, Two Tukara's, Two tihais
  - c. Ektal: One Peshkar, One Paran, One Chakardar Tihaai.
8. Define the following terms-Jori, Shaan, Sath, Mukaa in context to Gurmat Sangeet.
9. Comparative study of the following Taals:–  
Jhaptal-Sooltal, Ektal-Chaartal

**SEMESTER – III****TABLA  
(PRACTICAL)****Time: 20 Minutes****Marks: 50**

1. Tala Prescribed: Rupak, Jhaptal, Ektal.
2. Rupak: Laggis (three), Mukhra (two), Tihai (two), Chakardar Paran (One).
3. Jhap Tal: Two Kayadas with five Paltas each, Two Tukara's, Two tihaais
4. Ekltal: One Peshkar, One Paran, One Chakardar Tihaai.
5. Ability to play Nagma on Harmonium in Jhaptal.
6. Ability to play Theka of Sooltaal.
7. Practice of playing the above Taals with Vocal and Instrumental performance.
8. Tuning of Tabla.
9. Ability to play Saath Ke Bol of Gurmat Sangeet tradition.

**Books Recommended:**

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Misher Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Mani Mishra, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vashishath, Sangeet Karyalaya Hathras, 1994.
6. Tal Parichay Part –I to IV, Harish Chandra Srivastav, Sangeet Karyalaya, Hathras.
7. Tal Prakash, Bhagwat Saran Sharma, Sangeet Karyalaya, Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita, Chitragupta, Radha Publication, New Delhi, 1992.

**SEMESTER–III  
COMPUTER SCIENCE**

**COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS  
(THEORY)**

**Time: 3 Hours  
4 Hours/week**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT–I**

**Introduction:**

- 1 Numerical methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
- 2 Non-linear Equations, Iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bisection, False position Method, Newton Raphson-method.
- 3 Simultaneous Solution of Equations, Gauss Elimination Method Gauss Jordan method. Gauss Siedel Method, Matrix Inversion Method.

**UNIT–II**

- 4 Interpolation and Curve Fitting, Lagrangian Polynomials, Newtons Methods: Forward Difference Method, Backward Difference Method Divided Difference Method.
- 5 Numerical Integration and Different Tryaperzoidal Rule, Simpson's 1/3 Rule Simpson's 3/8 Rule.

**Numerical differentiation by Polynomial Fit Statistical Techniques**

- 1 Measure of Central Tendency, Preparing frequency distribution table, Mean Arithmetic, Mean geometric, Mean harmonic, Mean median Mode.
- 2 Measure of dispersion, Skewness and Kurtosis Range, Mean deviation, Standard deviation, co-efficient of variation, Moments Skewness Kurtosis.

**UNIT–III**

1. Correlation Bivariate Distribution Multivariate distribution.
2. Regression B.C., Linear Regression, Multiple Regression.
3. Trend Analysis least square fit linear trend, Non-linear trend  
 $Y=axb$   
 $Y=abx$   
 $Y=acx$   
 Polynomial fit:  $Y=a+aX+ea^2x^2+a^nx+n$

**Books Recommended:**

- 1 B.S. Grewal: *Numerical Methods for Engineering*, Sultan Chand Publications.
- 2 V. Rajaraman: *Computer Oriented Numerical Methods*, Prentice Hall of India Private Ltd.,  
New Delhi.

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B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–III) (Session 2018-19)  
(Faculty of Engineering & Technology)

**SEMESTER–III  
COMPUTER SCIENCE**

**COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS LAB.  
(PRACTICAL)**

**2 Hours/week**

**Marks: 25**

Practical based on Computer Oriented Numerical and Statistical Methods

**SEMESTER–III****INFORMATION TECHNOLOGY (VOCATIONAL)****OOPS Using C++  
(THEORY)**

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT–I**

Evolution of OOP, OOP Paradigm, Advantage of OOP, Characteristics of the object oriented language-objects, classes, Inheritance, Reusability, User Defined data types, Polymorphism and operator overloading. Identifiers and Keywords, Constants, c++ operators, type conversion, variable Declaration, Statements and Expressions, Input and output, conditional expression, loop statements, breaking control statements.

Defining a function, types of functions, storage class specifiers, recursions.

**UNIT–II**

Arrays, structures, pointers and structures, unions, classes, member, functions, objects, arrays of class objects, pointer and classes, constructors, destructors, inline member functions, static class member, friend function, dynamic memory allocation.

**UNIT–III**

Inheritance, single inheritance, types of base classes, type of derivations, multiple inheritance, container classes, member access control, Functions overloading , operator overloading, polymorphism, virtual functions, pure virtual functions, opening and closing of files, Stream State member functions.

**References:**

- 1 C++; A Beginner's Guide by "Schildt, Herbert", Edition 2002, McGraw Hill.
- 2 Turbo C++ by "Lafore Robert", Edition First, 1991, Reprint, 2007, Galgotia Publication.
- 3 Bruce Eckel, "Thinking in C++", First Edition.
- 4 Let us C++, "Yeshwant Kanetkar", First Edition, 2006, BPB Publication.

**SEMESTER–III**

**INFORMATION TECHNOLOGY (VOCATIONAL)**

**OOPS Using C++  
(PRACTICAL)**

**Marks: 25**

**4 Hours/week**

Practical based on OOPS Using C++

**SEMESTER–III****COMPUTER MAINTENANCE (VOCATIONAL)****MICROPROCESSOR & ASSEMBLY LANGUAGE  
(THEORY)**

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT–I**

**Introduction to Micro Computer System:** Microprocessor Definition, Evolution, Microprocessor as a CPU, Single chip Micro Computers, Organization of a Micro Processor Based System.

**8-Bit Microprocessor:** Introduction of 8085, ALU (Timing & Control Unit, Registers, Data & Address Bus, Pin Configuration, Intel 8085, Instruction), Instruction Cycles (Fetch Operation, execute Operation, Machine Cycle & State, Instruction & Data Flow), Timing Diagram (Timing Diagram for OP Code, Fetch, Cycle, Memory Read, I/O Read Memory and I/O write).

**UNIT–II**

**Interfacing I/O Devices:** Basic Interfacing Concepts, Interfacing, Output Display Interfacing Output Devices, Memory Mapped I/O.

**Instruction Set of Intel 8085:** Introduction Instruction & Data Format, Addressing Modus, Status Flags, Intel 8085 Instruction.

**Peripheral Devices & their Interfacing:** Memory & I/O Interfacing, Data Transfer Schemes, Interrupt of Intel 8085, Programmable DMA Controller, Programmable Interrupt Controller, Intel 8529.

### UNIT–III

**16-Bit Microprocessor:** Intel 8086/8088 pin Diagram, Architecture, Minimum & Maximum Modes, Bus Cycles, Memory Bus Status Codes, Memory Control Signals, Read/Write Cycle.

**I/O Interface of 8086/8088 Microprocessor:** Introduction, Types of I/O, Isolated I/O Interfaces, I/O Data Transfers, I/O Instruction, I/O Bus Cycles, I/O Hand Shaking Memory Mapped I/O. 8237A Programmable DMA Controller.

#### **Assembly Language Programs Using 8085 Instructions**

#### **References:**

1. B. Ram: Fundamental of Microprocessor & Micro Computers, Dhanput Rai, 5th Edition, 2001.
2. R.S. Gaonkar: Microprocessor Architecture for 8085, 3<sup>rd</sup> Edition, PRI, 1997.
3. Avtar Singh: 8088 & 8086 Microprocessor, Prentice Hall, 2002, 6th Edition.

**SEMESTER–III****COMPUTER MAINTENANCE (VOCATIONAL)****(PRACTICAL)****Marks: 25****2 Hours/week****List of Practicals Based on Microprocessor & Assembly Language**

- 1 To study the architecture of 8088 microprocessor.
- 2 To study the addressing modes of 8086.
- 3 To add two binary numbers each of 16-bit long.
- 4 To add two binary numbers each of 8-bit long.
- 5 To find maximum number in the given string (16 bytes long) and store it at location 0510.
- 6 To sort a string of a number of 8-bytes in descending order.
- 7 To multiply an ASCII string of 8 number by a single ASCII digit.
- 8 To divide a string of unpacked ASCII digits.

### SEMESTER–III

#### COMPUTER APPLICATION (VOCATIONAL)

#### OPERATING SYSTEM (THEORY)

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

#### Instructions for the Paper Setters:

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

#### UNIT–I

- 1 What is an Operating System - Evolution of OS Machine Language, Assembly, Compiler, Interpreter.
- 2 Types of Operating Systems with Examples
  - a) Single User Systems
  - b) Multi User Systems : Unix, Xenix, Vax/VMS.
- 3 Functions of Operating System
  - a) Memory Management (Fixed Sized partition, Variavle Sized Partition, Dynamic Memory Management with Reallocation Technique, Paging Demand Paging Techniques).
  - b) CPU Management (For come First served, Shortest Job First, Round Robin Policy).
  - c) File Management.
  - d) I/O Device Management.
  - e) Command Interpreter.
  - f) Data Management.
  - g) Programme Developing Tools.
  - h) Time Sharing.
  - i) Security.
  - j) Communication
- 4 Booting a System.
- 5 Features and Benefits of Unix.

#### UNIT–II

1. Unix System (Multi-programming, time-sharing, multitasking).
2. Components of Unix (Kernel, Shell).
3. UNIX file system (Data Block, list, super block, boot block).
4. Types of Files (Ordinary, Directory and Special Files).
5. Types of users in UNIX - levels of users (0-2).

### UNIT–III

1. Login and Logout from Unix Session.
2. Types of Shells (Bourne, c-shell, r-shell).
3. Shell as a command interpreter, clear.
4. Simple Directory and File Commands Cat, is, in, chmod, mail, who, whoami, cal, pwd, date, ps, mkdir, cd, rmdir, rm, tput, clear.
5. Piping, filters, batch processing, shell programming (echo, read, case constructs)
6. Editors (vi): Commands for opening, inserting, modifying, deleting and saving files.

#### References:

1. “UNIX Basics”, Ian Darwin TCP Informatics January, 2005.
2. “Basics of Os Unix and Shell Programming”, Isrd, Tata McGraw-Hill Education, 01-Aug-2006.
3. “UNIX in a Nutshell”: System V Edition: A Desktop Quick Reference for System V Release 4 and Solaris 2.0 by Daniel Gilly, The staff of O'Reilly Media, O'Reilly Media Inc.

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B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–III) (Session 2018-19)  
(Faculty of Engineering & Technology)

**SEMESTER–III**

**COMPUTER APPLICATION (VOCATIONAL)**

**OPERATING SYSTEM  
(PRACTICAL)**

**Marks: 25**

**2 Hours/week**

Practical based on Operating System

### SEMESTER–III

#### AUTOMOBILE MAINTENANCE (VOCATIONAL) (THEORY)

**Time: 3 Hours**

**Periods per week Theory: 6**

**Theory Marks: 60**

**Section–A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks i.e. (2 marks); total weightage of the section being 10 Marks.

**Section–B:** It will consist of short answer questions with answer to each question upto 2 pages in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 4 marks; total weightage of the section being 20 marks.

**Section–C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry 15 marks; total weightage of the section being 30 marks.

#### UNIT–I

**Automatic Electrical Systems:** Basic Automotive Circuits, Starting motor, Starting Devices, Bendix starting Drive, Overrunning clutch drive, Solinoid shift systems, Starting motor troubleshooting.

#### UNIT–II

**Generator:** Generator principles, Generation of Alternating currents, Generation of direct current, Generator construction, generator output control, Cut out relay, Regulator, Alternator type generator, Generating Systems troubleshooting.

#### UNIT–III

**Ignition Systems:** Introduction, Qualities of a good ignition system, Battery ignition system, Components of battery ignition system, Ignition coil, Condenser, Contact breaker, Distributer, Ignition Advance, Methods of ignition advance, Spark plug, Classification Sparking Plugs, Spark Plug Gap, Magneto Ignition System, Rotating Armature Type, Rotating magnet type, Low and high tension types, Special type of magneto, Ignition System troubleshooting.

**SEMESTER–III****AUTOMOBILE MAINTENANCE (VOCATIONAL)****LAB – I  
(PRACTICAL)****Time: 3 Hours****Marks: 40****Periods per week: Practical: 4 Hrs.**

1. Self Starter opening from the Voh and Refitting
2. Dynmo/Alternator Dismantling and Assembling.
3. Ignition Timing with the Engine.
4. Engine fault Diagonising.

**References:**

1. Basic Automobile Engineering (Punjabi Edition) written by C.P. Nakra, Published by Dhanpat Rai and Sons, Jalandhar, (Delhi).
2. Royal Basic Automobile Engineering written by R.K. Kalia. (Punjabi Edition).

**SEMESTER–III****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER–E (THEORY)****Time: 3 Hours****Marks: 30****Teaching Hours: 6****Instructions for the Paper Setters:**

**Section–A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section–B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section–C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT – I**

**Compressors:** Introduction, Types Hermetic, Semi Hermetic open compressors. Centrifugal & Rotary Compressors: construction features and volumetric Efficiencies. Multicylinder Compression & Capacity control.

**UNIT – II**

**Compressor Lubrication:** Methods of Lubrication & the properties of a Lubricating oil Identifications of sources of problem in operation Value failure, Shaft Seals 3– way Values cylinder to head gascats.

**UNIT – III**

**Condensers:** Definition, Basic Principle, Types of Condenser: Air cooled Condenser, Water Cooled Condenser, Evaporative Condenser and their Constructional features. Comparison between Waters & Air cooled condenser & their Advantages & disadvantages.

**SEMESTER–III****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER–F (THEORY)****Time: 3 Hours****Marks: 30****Teaching Hours: 6****Instructions for the Paper Setters:**

**Section–A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section–B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section–C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT – I**

**Cooling Towers:** Definition, types: natural & Mechanical Draft, cooling pond, shell & tube shell of coil chillers. Fouling & de–scaling of condensers. Brine System.

**UNIT – II**

**Expansion Devices:** Capillary Tube, Constant Pressure, Thermo Static Exp. Values, Sizing of Capillary. Standard Sizes, testing & adjustment of expansion devices. High & Low sides float valve. Refrigerant receivers. Dryers Filters.

**UNIT – III**

**Refrigeration & Air Conditioning System Practice:** Piping layout Selection of pip material & size for various Refrigerant, Methods of joining, flairing & brazing System, euacuation, departation, charging balancing, leak testing, Use of Selenoid valves pressure equalizers.

**SEMESTER–III**

**REFRIGERATION & AIR CONDITIONING (VOCATIONAL)**

**PRACTICAL: LAB–II**

**Time: 2 Hours**

**Marks: 40**

**Period Per week Practical: 4**

**List of Experiments:**

1. To Study the various control devices e.g. Thermostat, Relays & dryers etc.
2. To Study the vapour compression System.
3. To assemble & Operate a small vapour compression system.
4. To Study an electrolux Refrigerator.
5. To Study the Window Type Air Conditioner, Split Type air Conditioner.
6. To Study Ammonia–Water Plant.

**List of Books Recommended:**

<b>Name of Book</b>	<b>Author</b>	<b>Publisher</b>
Refrigeration & Air Conditioning	S.C. Arora	Dhanpat Rai
Refrigeration & Air Conditioning	Dowkundwar Khurmi	Katson Publication
Refrigeration & Air Conditioning	Sarao, Gaabi Singh	Satya Prakashan.

**SEMESTER–III****INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)****SOFTWARE ENGINEERING****Time: 3 Hours****Max. Marks: 100****Note:-**

- 1. In theory eight questions are to be set in all. The candidates are required to attempt five of them. All questions are to be of equal marks.**
- 2. The students can use only Non–Programmable & Non–Storage Type Calculators.**

**UNIT–I**

- 1. Introduction to Software:** Definition, Software characteristics, Software components, Software Applications.
- 2. Introduction to Software Engineering:** Definition, Software Engineering Paradigms, waterfall method, prototyping, interactive Enhancement, The Spiral model, Fourth Generation Technique.
- 3. Software Metrics:** Role of Metrics and measurement, Metrics for software productivity and Quality.

**UNIT–II**

- 4. Software Requirement Specification (SRS):** Problem analysis, structuring information, Data flow diagram and data dictionary, structured analysis, Characteristics and component of (SRS).
- 5. Planning a Software Project:** Cost estimation, uncertainties in cost estimation, Project scheduling and milestones, Software & Personal Planning
- 6. System Design:** Design Objectives, Design Principles, Top Down and Bottom–up techniques, Structure Design, Structure Charts, Design Methodology.

**UNIT–III**

- 7. Detailed Design:** Module specification, Specifying functional module, specifying data abstraction, PDL and Logic/Algorithm Design.
- 8. Coding:** Coding by Top–down and Bottom–up, Structured Programming, Information Hiding, Programming style, Internal Documentation.
- 9. Testing:** Level of testing, Test cases and test criteria, Functional Testing, Structural Testing.

**References:-**

- Software Engineering, Roger S. Pressman.
- Integrated Approach to Software Engineering, Pankaj Jalote.

**SEMESTER-III**

**RELIGIOUS STUDIES**

**ਧਰਮ ਅਧਿਐਨ  
(ਸਾਮੀ ਧਰਮ)**

ਸਮਾਂ 3 ਘੰਟੇ  
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100  
ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ:**

ਪੇਪਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ: ਓ, ਅ, ਏ, ਸ, ਅਤੇ ਹ। ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ 2-2 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੋਵੇਗਾ ਅਤੇ ਹਰ ਇਕ ਪ੍ਰਸ਼ਨ ਦੇ 15 ਅੰਕ ਹੋਣਗੇ। ਭਾਗ ਹ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 4-4 ਅੰਕ ਹੋਣਗੇ।

**ਪ੍ਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ:**

ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ ਕੇਵਲ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੈ ਅਤੇ ਭਾਗ ਹ ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ ਹਨ।

**ਭਾਗ (ਓ): ਯਹੂਦੀ ਧਰਮ**

1. ਯਹੂਦੀ ਧਰਮ ਦਾ ਇਤਿਹਾਸ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
2. ਪੈਗੰਬਰ ਮੂਸਾ: ਜੀਵਨ ਦੇ ਸਿੱਖਿਆਵਾਂ
3. ਯਹੂਦੀ ਧਰਮ-ਗ੍ਰੰਥ: ਤੋਰਾਹ (The Law), ਨਬੀ (The Prophets), ਕੈਥੂਬੀਮ (The Writings) ਬਾਰੇ ਸੰਖੇਪ ਜਾਣਕਾਰੀ।

**ਭਾਗ (ਅ): ਈਸਾਈ ਮੱਤ**

1. ਈਸਾਈ ਚਰਚ:ਆਰੰਭ ਅਤੇ ਪਾਸਾਰ(ਨਵੇਂ ਨੇਮ ਦੀ ਪੰਜਵੀਂ ਪੁਸਤਕ ਰਸੂਲਾਂ ਦੇ ਕਰਤਬ ਅਨੁਸਾਰ)
2. ਯਸੂ ਮਸੀਹ: ਜੀਵਨ ਤੇ ਸਿੱਖਿਆਵਾਂ
3. ਨਵਾਂ ਨੇਮ (New Testament) : ਤਿੰਨ ਮੁੱਖ ਭਾਗ
  - (i) ਮੱਤੀ ਦੀ ਅੰਜੀਲ (Gospel of Mathew): ਸੰਖਿਪਤ ਜਾਣਕਾਰੀ
  - (ii) 21 ਪੱਤਰ (Epistles) ਸੰਤ ਪਾਲ ਅਤੇ ਦੂਜੇ ਸੰਤਾਂ ਦੇ
  - (iii) ਪ੍ਰਕਾਸ਼ ਦੀ ਪੋਥੀ (Apocalypse)

**ਭਾਗ (ੲ): ਇਸਲਾਮ**

1. ਇਸਲਾਮ ਧਰਮ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ, ਪਿਛੋਕੜ, ਆਰੰਭ ਅਤੇ ਵਿਕਾਸ, ਇਸਲਾਮ ਤੋਂ ਪਹਿਲਾਂ ਅਰਬ ਦੀ ਧਾਰਮਿਕ ਅਤੇ ਸਮਾਜਿਕ ਸਥਿਤੀ
2. ਪੈਗੰਬਰ ਮੁਹੰਮਦ: ਜੀਵਨ, ਸਿੱਖਿਆਵਾਂ, ਇਸਲਾਮ ਦੇ ਪੰਜ ਥੰਮ: ਈਮਾਨ,ਸਲਾਤ, ਰੋਜ਼ਾ, ਹੱਜ,ਜ਼ਕਾਤ
3. ਪਵਿੱਤਰ ਕੁਰਾਨ: ਸੰਪਾਦਨਾ ਅਤੇ ਬਣਤਰ

**SEMESTER-III**

**ਭਾਗ (ਸ) : ਪਾਰਸੀ ਮੱਤ**

1. ਪਾਰਸੀ ਧਰਮ: ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ, ਸਮਕਾਲੀ ਸਮਾਜਿਕ ਅਤੇ ਧਾਰਮਿਕ ਅਵੱਸਥਾ, ਜਲਾਵਤਨੀ ਅਤੇ ਭਾਰਤ ਵਿਚ ਆਗਮਨ
2. ਜਰਤੁਸ਼ਤ: ਜੀਵਨ, ਸਿੱਖਿਆਵਾਂ, ਨੇਕੀ-ਬਦੀ ਦਾ ਸਿੱਧਾਂਤ, ਪਰਿਵਾਰਿਕ ਅਤੇ ਸਮਾਜਿਕ ਭਾਈਚਾਰੇ ਦੀ ਬਣਤਰ
3. ਪਾਰਸੀ ਧਰਮ-ਗ੍ਰੰਥ: ਅਹੁਰ ਮਾਜ਼ਦਾ, ਅਹਰਮਨ ਅਤੇ ਜੰਦ-ਅਵੇਸਤਾ ਦੀ ਸੰਖੇਪ ਜਾਣਕਾਰੀ

**ਭਾਗ (ਹ) : ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ**

**ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:**

**ENGLISH:**

1. Ali, K. *A Study of Islamic History*, Mullick Brothers, Calcutta, 1971.
2. Ansari, M. Abdul Haq, *Islam*, Punjabi University, Patiala, 1969.
3. Buck, Harry M., *People of the Lord, The History, Scripture and faith of ancient Israel*, The Macmillan, 1966.
4. *Christianity*, Punjabi University, Patiala, 1969.
5. Clark, Denmise E., *Jesus Christ- His Life and Teachings*, , Madarsa Road, Kashmiri Gate, Delhi, 1654.
6. Foster, John, *Church History*, ISPCK, New Delhi, 2013.
7. Greenless, Duncan, *The Gospel of Zorathustra*, Adyar Publication, Madras, 1968.
8. Guillame, Alfred, & Arnold Thomas (Ed.), *The Legacy of Islam*, Oxford University, London, 1960.
9. Hindson, David F., *History of Israel*, ISPCK, Delhi, 2007.
10. Hitti, P.K., *History of Arabs*, Macmillan, London, 1977.
11. M.N., Dhalla, *History of Zoroastrianism* K.R. Cama Oriental Institute, Bombay, 1997.
12. Pickthal, M.M., *The Meaning of the Glorious Koran*, George Allan and Unwin, 1969.

**Punjabi:**

1. ਗੁਲਵੰਤ ਸਿੰਘ, *ਇਸਲਾਮ ਅਤੇ ਸੂਫੀਵਾਦ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1994.
2. ਜੀ. ਆਰ. ਸਿੰਘ ਅਤੇ ਸੀ. ਡਬਲਿਊ ਡੇਵਿਡ, *ਯਹੂਦੀ ਧਰਮ ਪ੍ਰਸਿੱਤਯ ਧਰਮ*, ਲਖਨਊ ਪਬਲਿਸ਼ਿੰਗ ਹਾਊਸ, ਲਖਨਊ.
3. ਜੋਸ਼ੀ, ਐੱਲ.ਐੱਮ., *ਵਿਸ਼ਵ ਧਰਮ ਸੰਗ੍ਰਹਿ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1971.
4. ਤਾਲਿਬ, ਗੁਰਬਚਨ ਸਿੰਘ (ਸੰਪਾ.), *ਸੰਸਾਰ ਦੇ ਕੁਝ ਪ੍ਰਮੁੱਖ ਧਰਮ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1985.
5. ਧਾਲੀਵਾਲ, ਤੇਜਿੰਦਰ ਕੌਰ, *ਯਹੂਦੀ ਅਤੇ ਈਸਾਈ ਧਰਮ : ਇਕ ਜਾਣ-ਪਛਾਣ*, ਗ੍ਰੇਸੀਅਸ ਪਬਲੀਕੇਸ਼ਨ, ਪਟਿਆਲਾ, 2009.
6. ਬਾਈਬਲ (ਪੰਜਾਬੀ ਅਨੁਵਾਦ), ਬਾਈਬਲ ਸੁਸਾਇਟੀ ਆਫ ਇੰਡੀਆ, ਬੰਗਲੌਰ, 1976.
7. ਮੈਸੀ, ਜੇਮਜ਼, *ਮਸੀਹੀਅਤ: ਇਕ ਪਰਿਚਯ*, ਫਕੀਰ ਸਿੰਘ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ, 1976.

**SEMESTER–III**

**PHILOSOPHY**

**DEDUCTIVE LOGIC AND APPLIED ETHICS (OPT. I)  
(Only for Regular Students)**

**Lectures to be delivered: 6+4=10 per week**  
**Time: 3 Hours**  
**Pass Marks: 35%**

**Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Note: Instructions for the Paper-Setters:**

The question paper will consist of five Sections: A, B, C, D & E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15 marks each. Section E will consist of 10 short answer type questions which will cover the entire syllabus uniformly and will carry 20 marks. Each short answer type question will be of 2 marks. There will be a separate paper for practical related to the subject. For it there will be four lectures in a week besides the theory lectures. The focus of these lectures would be on the applied aspect of the course and the students will prepare a presentation on the basis of their observations of specific problems related with Applied Ethics. A teacher from the affiliated colleges will evaluate the students on the basis of presentation and the Viva-Voce before/after the theory examination and will award the marks out of 20 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from the sections A, B, C & D of the question paper and the entire section E

**Section–A**

1. Definition, Nature and Utility of Western Logic.
2. Laws of Thought: Identity, Contradiction, Excluded Middle, Law of Sufficient Reason and their Characteristics.
3. Terms: Kinds, Connotation, Denotation and Relation between Connotation and Denotation.

### SEMESTER–III

#### Section–B

4. Proposition: Classification of Propositions, Four-fold division of Propositions.
5. Immediate Inference: Square of Opposition of Proposition, Contradiction, Contrary, Sub-Contrary, Subalteration.
6. Mediate Inference: Rules of Validity and Fallacies of Categorical Syllogism.

#### Section–C

7. Applied Ethics: Nature, Scope and Uses.
8. De-ontological Approach to Moral Action: Immanuel Kant, Bhagavat Gita.
9. Teleological Approach to Moral Action: J.S. Mill, Bentham.

#### Section–D

10. Medical Ethics & Legal Ethics
11. Educational Ethics
12. Bussiness Ethics

#### Recommended Readings:

##### English Books

1. Beauchamp T.L. & J.E. Childress, (Jr.), *Principles of Biomedical Ethics*, 2nd Ed., Oxford University Press, Oxford, 2001
2. Copi, I.M., *Introduction to Logic*, 6<sup>th</sup> ed., New York, Macmillan, 1982.
3. Singer, Peter, *Practical Ethics*, Cambridge University Press, 1993.
4. Titus, Harold H., *Ethics for Today*, Eurasia Publishing House, New Delhi, 1966.

##### Punjabi Books

1. ਵਜ਼ੀਰ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ, *ਤਰਕ ਗਿਆਨ ਦੇ ਮੁਢਲੇ ਨੇਮ*, (ਭਾਗ-1) (ਨਿਗਮਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
2. ਸ਼ਰਮਾ, ਪੀ.ਏ. ਅਤੇ ਵਜ਼ੀਰ ਸਿੰਘ, *ਤਰਕ ਗਿਆਨ ਦੀ ਜਾਣ-ਪਛਾਣ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

**SEMESTER–III****PHILOSOPHY****DEDUCTIVE LOGIC AND SOCIAL PHILOSOPHY (OPT. II)  
(Only for Private Students)****Time: 3 Hours****Max. Marks: 100****Lecture to be delivered: 6 per week****Pass Marks: 35%****Note: Instructions for the Paper Setters:**

The Question paper will consist of five Sections: A, B, C, D & E. Sections A, B, C, D and E will have two questions from the respective sections of the syllabus and will carry 15 marks each. Section E will consist of 10 short answer type questions which will cover the entire syllabus uniformly and will carry 40 marks in all, each short answer type question carrying 4 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from the Sections A, B, C and D of the question paper and the entire section E.

**Section–A**

1. Definition, Nature and Utility of Western Logic.
2. Laws of Thought: Identity, Contradiction, Excluded Middle, Law of Sufficient Reason and their Characteristics.
3. Terms: Kinds, Connotation, Denotation and Relation between Connotation and Denotation.

**Section–B**

4. Proposition: Classification of Propositions, Four-fold division of Propositions.
5. Immediate Inference: Square of Opposition of proposition, Contradiction, Contrary, Sub-Contrary, Subalteration.
6. Mediate Inference: Rules of Validity and Fallacies of Categorical Syllogism.

### SEMESTER–III

#### Section–C

7. Social Philosophy: Nature, Scope and Importance of Social Philosophy.
8. Social Philosophy and Ethics.
9. Social Philosophy and Political Science.

#### Section–D

10. Plato's Theory of State
11. Theories about Origin of Society: Organic Theory, Social Contract Theory and Idealistic Theory
12. Social Progress : Meaning and Factors

#### Recommended Readings:

##### English Books

1. Bech, Robert N., *Handbook of Social Philosophy*, 1969.
2. Copi, Irving M. *Introduction to Logic*, 6<sup>th</sup>, New York, Macmillan, 1982.
3. Daya Krishan, *Social Philosophy: Past and Future*, Indian Institute of Advanced Study, Shimla, 1969.
4. Quinton, Anthony (Ed.), *Political Philosophy*, Oxford University Press, London, 1973.
5. Sharma, Ram Nath, *Overview of Philosophy*, Lucky Star, Delhi, 1983.

##### Punjabi Books:

1. ਵਜ਼ੀਰ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ, *ਤਰਕ ਗਿਆਨ ਦੀ ਜਾਣ-ਪਛਾਣ* : (ਭਾਗ-1) (ਨਿਗਮਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

##### Hindi Books:

1. ਗੋਤਮ, ਸਤਿਆਪਾਲ, *ਸਮਾਜ ਦਰਸ਼ਨ*, ਹਰਿਆਣਾ ਸਾਹਿਤਯ ਅਕੈਡਮੀ, ਪੰਚਕੁਲਾ।
2. ਮੇਕੇਂਜੀ, ਜੇ.ਐਸ., *ਸਮਾਜ ਦਰਸ਼ਨ ਕੀ ਰੂਪ ਰੇਖਾ*, ਰਾਜਕਮਲ, ਪਟਨਾ।

**SEMESTER–III**

**ZOOLOGY**

Paper	Maximum Marks		Hours of Teaching	
	Theory Marks	Practical Marks	Theory	Practical
ZOO-III A (Evolution)	35	—	3 Hrs	—
ZOO-III B (Biodiversity-III)	35	—	3 Hrs	—
PRACTICAL–III (RELATED TO ZOO-III A and ZOO-III B)	—	30	—	4½ Hrs

**SEMESTER–III**

**ZOOLOGY**  
**ZOO-III A: Evolution**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I**

Introduction to evolution  
Evidences of organic evolution  
Theories of organic evolution

**UNIT-II**

Origin of life  
Concept of micro, macro and mega-evolution  
Concept of Species  
Speciation

**UNIT-III**

Fossils, its types and significance  
Evolutionary rate  
Origin & Extinction of reptiles  
Evolution of man (in Brief)

**UNIT-IV**

Migration & Parental Care in Pisces  
Flight adaptation & Bird migration  
Adaptive radiations like scales & fins in fish, poison apparatus in snakes and dentition in Mammals.

**Suggested Readings:-**

1. Avers, C. J.(1989). Evolution Process and Pattern in Evolution, Oxford University, Press, New York, Oxfor.
2. Ayala, F. J. and Valentine J. W. (1979). Evolving the theory and Process of Organic Evolution, Benjamin Cumming.
3. Bhamarah, H.S.(1993), Juneka K., Cytogenetics & Evolution, Anmol Publication Pvt. Ltd.
4. Brookfield, A. P. (1986). Modern aspects of Evolution. Hutchinson London, Melbourne.
5. Colbert. E.H.(1989), Evolution of Vertebrates, (2<sup>nd</sup> ed), Wiley Eastern Ltd.
6. Dobzhansky, Ayala, Stebbins & Valentine(1952), Evolution W.H. Freeman.
7. Gallow, P. (1983). Evolutionary principles. Chapman and Hall.
8. Freeman, S. and Herron, Jon C. (2007). Evolutionary analysis, Pearson Prentice Hall, New Jersey.
9. Futuyma, D. J. (1998), Evolutionary Biology, Sinauer Assoc. Inc. Pub. USA.
10. Meglitsch, P. A. (1991), Invertebrate Zoology (3<sup>rd</sup> ed), Oxford University Press.
11. Minkoff, E. C. (1983), Evolutionary Biology, Addison Wesley Pub. Co., London.
12. Wen-Hsiung Li (1997), Molecular Evolution, Sinauer associates Inc.Pub. USA.

**SEMESTER–III**  
**ZOOLOGY**  
**ZOO-III B: Biodiversity-III**  
**(Chordates)**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I**

Urochordata: External features and affinities of *Herdmania*  
Cephalochordata: Type study-*Amphioxus*

**UNIT-II**

Cyclostomata: External Characters of *Petromyzon*  
Affinities of Cyclostomata

Pisces: Type study-*Labeo*

**UNIT-III**

Amphibia: Type study-Frog  
Reptilia: Type study-*Uromastix*

**UNIT-IV**

Aves: Type study-Pigeon  
Mammals: Type study-Rat

**Suggested Reading Material:-**

1. Dhama, P.S. & Dhama J.K. (1998), Vertebrates, R. Chand & Co., New Delhi.
2. Goodrich, E. S. (1958), Structure and Development of Vertebrates, Vol. I and II. D. E. Publication, New York.
3. Hildebrand, M. and Goslow. Jr. G.E. (2001), Analysis of Vertebrates Structure, John Wiley, N. Y.
4. Jollie, M. (1968), Chordate Morphology, Reinhold, New York.
5. Kardong, K. V. (1995), Vertebrates – Comparative Anatomy, Function, Evolution. W.B.C. Pub. , Oxford.
6. Kent, G. C. and Carr, R. K. (2001), Comparative Anatomy of the Vertebrates (9<sup>th</sup> ed), McGraw Hill Higher Education, New York.
7. Linzey, D. (2001), Vertebrate Biology, McGraw Hill Publishing Company, New York.
8. Pough, F. H., Heiser, J. B. and McFarland, W. N. (1990), Vertebrate Life (3<sup>rd</sup> ed), Macmillan Pub. Co., New York.
9. Young, J. Z. (1982), The Life of Vertebrates, New York.
10. Parker, T.J. and Haswell, W.A (1981) Text Book of Zoology, Vol. II (Vertebrates), ELBS and Macmillan Press Ltd.

### SEMESTER–III

#### ZOOLOGY

#### Practical-III (Related to ZOO-III A and ZOO-III B)

Time: 3hrs.

Marks: 30

#### Important Note for Practical:-

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines (D.O.No. F. 14-6/2014(CPP-II) dated 01-08-2014) the dissections should not be conducted. The guidelines on this issue are available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)

#### I. Classification up to order level, except in case of Pisces and Aves where classification up to subclass level, habits, habitat, external characters and economic importance (if any) of the following animals is required :

- Urochordata** : *Herdmania, Molgula, Pyrosoma, Doliolum, Salpa & Oikopleura.*
- Cephalochordata** : *Amphioxus.* Study of the following prepared slides:  
T.S. *Amphioxus* through various regions, Pharynx of *Amphioxus*
- Cyclostomata** : *Myxine, Petromyzon & Ammocoetes* Larva.
- Chondrichthyes** : *Zygaena* (hammer head shark), *Pristis* (saw fish), *Narcine* (*electric ray*), *Trygon, Rhinobatus and Chimaera* (rabbit fish).
- Actinoptergii** : *Polypterus, Acipenser, Lepidosteus, Muraena, Mystus, Catla, Hippocampus, Syngnathus, Exocoetus, Anabas, Diodon, Tetradon, Echeineis and Solea.*
- Dipneusti (Dipnoi)** : *Protopterus* (african lung fish)
- Amphibia** : *Uraeotyphlus, Necturus, Amphiuma, Amblystoma* and its Axolotl Larva, *Triton, Salamandra, Hyla, Rhyacophorus*
- Reptilia** : *Hemidactylus, Calotes, Draco, Varanus, Phrynosoma, Chamaeleon, Typhlops, Python, Eryx, Ptyas, Bungarus, Naja, Hydrus, Vipera, Crocodilus, Gavialis, Chelone* (turtle) and *Testudo* (tortoise), Differences in nonpoisonous and poisonous snakes.
- Aves** : *Casuaris, Ardea, Anas, Milvus, Pavo, Eudynamics, Tyto* and *Alcedo.*
- Mammalia** : *Ornithorynchus, Echidna, Didelphis, Macropus, Loris, Macaca, Manis, Hystrix, Funambulus, Panthera, Canis, Herpestes, Capra, Pteropus.*

II.	Study of the following systems with the help of charts/models/videos:
<b><i>Herdmania</i></b>	: General anatomy
<b><i>Labeo</i></b>	: Digestive and reproductive systems, heart, afferent and branchial arteries, cranial nerves and internal ear.
<b>Chick</b>	: Digestive, arterial, venous and urino-genital systems.
<b>White Rat</b>	: Digestive, arterial, venous and urino-genital systems.

Study of permanent slides of whole mount of Pharynx of *Herdmania* and *Amphioxus*.  
Cycloid scales of *Labeo*, blood smear of mammal, Histology of rat/rabbit (compound tissues)

Demonstration of evolutionary phenomena like homology, analogy, mimicry, crypsis.  
Study of evolution of horse/elephant/man.

Study of fossils.

### Assignment

**Note:- Some changes can be made in the practicals depending on the availability of material.**

### Guidelines for conduct of Practical Examination:

1. Draw a labelled sketch of the system of the given animal & explain it to the Examiner. 4
2. Identify and classify the specimens upto order level. Write a short note on habitat, special features, feeding, habits and economic importance of the specimens. 8
3. Identify and write a note on the evolutionary phenomenon in the given specimen. 4
4. Identify the slides/specimens, give two reasons for identification. 5
5. Assignment 4
6. Viva-voce & Practical file. 5

**SEMESTER–III  
BOTANY**

**PAPER– STRUCTURE, DEVELOPMENT AND REPRODUCTION IN FLOWERING  
PLANTS–I (THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week**

**Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer–type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit 1**

The basic body plan of a flowering plant–modular type of growth. diversity in plant form in annuals, biennials and perennials; trees–largest and longest-lived. branching pattern; monopodial and sympodial growth; canopy architecture.

**Unit 2**

The Shoot System: The shoot apical meristem and its histological organization; meristematic and permanent tissue, formation of internodes. Cambium and its functions; formation of secondary xylem.

**Unit 3**

A general account of wood structure in relation to conduction of water and minerals; characteristics of growth rings, sapwood and heart wood; role of woody skeleton; secondary phloem–structure function relationships; periderm.

**Unit 4**

Leaf: Origin, development, arrangement and diversity in size and shape; internal structure in relation to photosynthesis and water loss; adaptations to water stress; senescence and abscission.

**Suggested Readings:**

1. Beck, C.B. (2010). An Introduction to Plant Structure and Development: Plant anatomy for the Twenty First Century (2nd Edition). Cambridge University Press, UK.
2. Cutler, D. F., Botha, T. and Stevenson, D. M. (2007). Plant Anatomy: An Applied Approach. Blackwell Publishing, Oxford, UK.
3. Dickison, W.C. (2000). Integrative Plant Anatomy. Academic Press, California, USA.
4. Mauseth, J.D. (1988). Plant Anatomy, The Benjamin/Cummings Publishing Company Inc., Menlo Park, California, USA.
5. Peau, K (1977) Anatomy of Seed Plants, 3rd edition. John Wiley & Sons, New York.
6. Raven, P.H., Evert, R.F. and Eichhorn, S.E. (1999). Biology of Plants, 5th edition. W.H. Freeman and Co., Worth Publishers, New York.
7. Rudall, P. J. (2007). Anatomy of Flowering Plants: An Introduction to Structure and Development (3rd Edition). Cambridge University Press, UK.
8. Thomas, P. (2000) Trees: Their Natural History, Cambridge University Press, Cambridge

**SEMESTER–III****BOTANY****Paper–III B: STRUCTURE, DEVELOPMENT AND REPRODUCTION IN  
FLOWERING PLANTS–II (THEORY)****Time: 3 Hrs.****Theory Lectures: 3 Hours/Week****Max. Marks: 35****Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer–type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit 1**

The Root System: The root apical meristem; differentiation of primary and secondary tissues and their roles; structural modification for storage, respiration, reproduction and for interaction with microbes.

**Unit 2**

Vegetative Reproduction: various methods of vegetative propagation. Detailed study and types of grafting and budding, economic aspects. Flower: A modified shoot; structure, development and varieties of flower; functions;

**Unit 3**

Structure of anther and pistil; the male and female gametophytes; types of pollination; attractions and reward for pollinators; (sucking and foraging types); pollen-pistil interaction self incompatibility.

**Unit 4**

Double fertilization: formation of seed endosperm and embryo : fruit development and maturation Significance of Seed: Suspended animation; ecological adaptation; unit of genetic recombination with reference to reshuffling of genes and replenishment; dispersal strategies.

**Suggested readings:**

1. Bhojwani, S.S. and Bhatnagar, S.P. (2000). The Embryology of Angiosperms, 4th revised and enlarged edition. Vikas Publishing House, Delhi.
2. Hartmann, H.T. and Kestler, D.E. (1976). Plant Propagation: Principles and Practices, 3rd edition, Prentice Hall of India Pvt. Ltd., New Delhi.
3. Mauseth, J.D. (1988). Plant Anatomy, The Benjamin/Cummings Publishing Company Inc., Menlo Park, California, USA.
4. Peau, K. (1977). Anatomy of Seed Plants, 3rd edition. John Wiley & Sons, New York.
5. Pegeri, K. and Vander Pijl (1979). The Principles of Pollination Biology, Pergamon Press, Oxford.
6. Raven, P.H., Evert, R.F. and Eichhorn, S.E. (1999). Biology of Plants, 5th edition. W.H. Freeman and Co., Worth Publishers, New York.

**SEMESTER–III**  
**BOTANY Botany Practicals–III (Based on Papers–III A and III B)**

Practical Marks: 30

Practical Hours: 4½ Hours/week

**Suggested Laboratory Exercises**

1. Study of any commonly occurring dicotyledonous plant (for example *Solanum nigrum* or *Kalanchoe*) to the body plan, organography and modular type of growth.
2. Life forms exhibited by flowering plants (by a visit to a forest or a garden, Study of treelike habit in cycads, bamboo, banana, traveller's tree (*Revenala madagascariensis*) and *Yucca* and comparison with true trees as exemplified by conifers and dicotyledons.
3. L.S. Shoot tip to study the cytohistological zonation and origin of leaf primordia.
4. Monopodial and sympodial types of branching in stems (especially rhizomes).
5. Anatomy of primary and secondary growth in monocots and dicots using free hand razor technique (*Solanum*, *Boerhavia*, *Helianthus*, *Mirabilis*, *Nyctanthus*, *Draceana*, *Maize*) hand sections (or prepared slides). Structure of secondary phloem and xylem. Growth rings in wood, Microscopic study of wood in T.S., T.L.S. and R.L.S.
6. Field study of diversity in leaf shape, size, thickness, surface properties. Internal structure of leaf. Structure and development of stomata (using epidermal peels of leaf).
7. Anatomy of the root. Primary and secondary structure.
8. Examination of a wide range of flowers available in the locality and methods of their pollination.
9. Structure of anther, microsporogenesis (using slides) and pollen grains (using whole mounts). Pollen viability using in vitro pollen germination.
10. Structure of ovule and embryo sac development using serial sections from permanent slides.
11. Nuclear and cellular endosperm. Embryo development in monocots and dicots (using permanent slides/dissections).
12. Simple experiments to show vegetative propagation (leaf cuttings in *Bryophyllum*, *Sansevieria*, *Begonia*; stem cuttings in rose, *Salix*, money plant, *Sugarcane* and *Bougainvillea*).
13. Germination of non-dormant and dormant seeds.

**Suggested Readings (for laboratory exercises):**

1. Bhojwani, S.S. and Bhatnagar, P. (2000). *The Embryology of Angiosperms* (4th revised and enlarged edition), Vikas Publishing House, New Delhi.
2. Mauseth, J.D. (1988). *Plant Anatomy*, The Benjamin/Cumminas Publishing Co., Inc., Mehlo Park, California, USA.
3. Raven, P.H., Evert, R.F. and Eichhorn, S.E. (1992). *Biology of Plants* (5th Edition). Worth Publishers, New York.
4. Steeves, T.A. and Sussex, I.M. (1989). *Patterns in Plant Development* (2nd Edition). Cambridge University Press, Cambrid.

**SEMESTER–III**  
**ESL 221 Environmental Studies (Compulsory)**  
**(Student can opt this Paper whether in 3<sup>rd</sup> or 4<sup>th</sup> Semester)**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Teaching Methodologies**

The Core Module Syllabus for Environmental Studies includes class room teaching and field work. The syllabus is divided into 8 Units [Unit-1 to Unit-VII] covering 45 lectures + 5 hours for field work [Unit-VIII]. The first 7 Units will cover 45 lectures which are class room based to enhance knowledge skills and attitude to environment. Unit-VIII comprises of 5 hours field work to be submitted by each candidate to the Teacher in-charge for evaluation latest by 15 December, 2018.

**Exam Pattern:**           **End Semester Examination- 75 marks**  
                                  **Project Report/Field Study- 25 marks [based on submitted report]**  
                                  **Total Marks- 100**

The structure of the question paper being:

**Part-A, Short answer pattern with inbuilt choice – 25 marks**

Attempt any five questions out of seven distributed equally from Unit-1 to Unit-VII. Each question carries 5 marks. Answer to each question should not exceed 2 pages.

**Part-B, Essay type with inbuilt choice – 50 marks**

Attempt any five questions out of eight distributed equally from Unit-1 to Unit-VII. Each question carries 10 marks. Answer to each question should not exceed 5 pages.

**Project Report / Internal Assessment:**

**Part-C, Field work – 25 marks [Field work equal to 5 lecture hours]**

The candidate will submit a hand written field work report showing photographs, sketches, observations, perspective of any topic related to Environment or Ecosystem. The exhaustive list for project report/area of study are given just for reference:

1. Visit to a local area to document environmental assets: River / Forest/ Grassland / Hill / Mountain / Water body / Pond / Lake / Solid Waste Disposal / Water Treatment Plant / Wastewater Treatment Facility etc.
2. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of tree in your areas with their botanical names and soil types
5. Study of birds and their nesting habits
6. Study of local pond in terms of wastewater inflow and water quality
7. Study of industrial units in your area. Name of industry, type of industry, Size (Large, Medium or small scale)
8. Study of common disease in the village and basic data from community health centre
9. Adopt any five young plants and photograph its growth
10. Analyze the Total dissolved solids of ground water samples in your area.
11. Study of Particulate Matter (PM<sub>2.5</sub> or PM<sub>10</sub>) data from Sameer website. Download from Play store.
12. Perspective on any field on Environmental Studies with secondary data taken from Central Pollution Control Board, State Pollution Control Board, State Science & Technology Council etc.

**UNIT–I**

**The multidisciplinary nature of environmental studies**

Definition, scope and importance, Need for public awareness

**(2 lectures)**

### UNIT-II

#### **Natural Resources: Renewable and non-renewable resources:**

Natural resources and associated problems.

- Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
  - Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
  - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
  - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
  - Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
  - Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.

**(8 Lectures)**

### UNIT-III

#### **Ecosystems**

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

**(6 Lectures)**

### UNIT-IV

#### **Biodiversity and its conservation**

- Introduction – Definition: genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
- Biodiversity at global, national and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

**(8 Lectures)**

### UNIT-V

#### **Environmental Pollution**

Definition

- Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

**(8 Lectures)**

### UNIT–VI

#### Social Issues and the Environment

- From unsustainable to sustainable development
- Urban problems and related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products
- Environmental Protection Act, 1986
- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and control of Pollution) Act, 1974
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness

(7 Lectures)

### UNIT–VII

#### Human Population and the Environment

- Population growth, variation among nations
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights
- Value Education
- HIV / AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and Human Health
- Case Studies

(6 Lectures)

### UNIT–VIII

#### Field Work

- Visit to a local area to document environmental assets river/forest/grassland/hill/mountain
- Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc

(Field work equal to 5 lecture hours)

#### References:-

1. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
2. Down to Earth, Centre for Science and Environment, New Delhi.
3. Heywood, V.H. & Waston, R.T. 1995. Global Biodiversity Assessment, Cambridge House, Delhi.
4. Joseph, K. & Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
5. Kaushik, A. & Kaushik, C.P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
6. Rajagopalan, R. 2011. Environmental Studies from Crisis to Cure. Oxford University Press, New Delhi.
7. Sharma, J. P., Sharma, N.K. & Yadav, N.S. 2005. Comprehensive Environmental Studies, Laxmi Publications, New Delhi.
8. Sharma, P. D. 2009. Ecology and Environment, Rastogi Publications, Meerut.
9. State of India's Environment 2018 by Centre for Sciences and Environment, New Delhi
10. Subramanian, V. 2002. A Text Book in Environmental Sciences, Narosa Publishing House, New Delhi.

**SEMESTER–III  
MICROBIOLOGY**

**MICROBIAL NUTRITION AND METABOLISM  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:**

There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT–I**

1. Nutrition, requirements for growth of Microorganisms, Nutrients and accessory constituents, medium designing.

**UNIT–II**

2. Transport of nutrients across the cell membrane, active transport, passive transport, diffusion and group translocation for the transport of nutrients across the membrane.

**UNIT–III**

3. Growth and metabolism, catabolism and energy, Pathways, for breakdown of glucose (glycolysis, Kreb's cycle fermentation, pentose phosphate pathways), gluconeogenesis, assimilation of nitrogen energy metabolism in aerobic and anaerobic microorganisms, metabolism of starch & cellulose by bacteria.

**UNIT–IV**

4. Laws of thermodynamics, entropy, enthalpy and free energy of reaction standard, oxidative phosphorylation, Electron transport, respiratory chains of bacteria. Biosynthesis of nucleic acids, for synthesis of purine and pyrimidine nucleotides. Enzymes, kinetics, Michaelis Menten equation and allosteric enzymes.

**Books Recommended:**

1. Pleczar, M.J., Chan, E.C.S. Krieg. N.R., 1993, Microbiology, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
2. Stanier, R.Y., Ingraham, J.L., Wheelis, M.L. and Painter, P.R., 1986, General Microbiology, MacMillan Education Ltd., Publishers.
3. Power, C.B. and Dangniwala, H.F.1992, General Microbiology, Volume I and II, Himalaya Publishing House, New Delhi.
4. Sharma, P.D.1997, Microbiology, Rastogi Publications, Meerut.

**SEMESTER–III****MICROBIOLOGY****(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. Isolation and enumeration of total bacteria from soil by pour plating and spread plating.
2. Distinction between fermenting and non-fermenting microorganisms.
3. Effects of various concentrations of carbon source on microbial growth.
4. Effects of various concentrations of nitrogen source on microbial growth.
5. Effect of temperature on microbial growth.
6. Effect of pH on microbial growth.

**SEMESTER–III****INDUSTRIAL MICROBIOLOGY (VOCATIONAL)  
MICROBIAL PHYSIOLOGY  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setters:**

There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice, one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT–I**

Brief account of forms (viz. cell wall, cell membrane, nucleus ribosome) and their function in microbes, salient properties of water as biological solvent, pH homeostasis, buffers.

**UNIT–II**

Structural properties of membranes. Transport across cell membrane diffusion, gaseous, exchange, osmosis, plasmolysis, passive and active transport, biochemical factors regulating the transport, role of ionophores, group translocation across membrane. Laws of thermodynamics, entropy, enthalpy and free energy of reaction standard Redox potential, hydrolysis of energy rich intermediates and ATP. Respiratory electron transport and proton pump chemiosmotic theory. Oxidative phosphorylation (ATP synthesis).

**UNIT–III**

Photosynthetic microbes, oxygenic/non oxygenic reaction centres, electron transport, photophosphorylation, Calvin Cycle, (dark reaction), phosphoenol carboxylase photorespiration and its significance. Effect of light, temperature, pH, CO<sub>2</sub> concentration, on photosynthesis, Measurement of net photosynthetic yield. Respiratory pathway, breakdown of carbohydrates through glycolysis, Krebs's cycle fermentation, pentose phosphate pathways, oxidative and substrate level phosphorylation, significance of Krebs's cycle, gluconeogenesis, regulation of glycogenesis and glycogenolysis.

#### UNIT–IV

Nitrogen fixation in symbiotic and free living system, photosynthetic and non photosynthetic system, oxygen and hydrogen regulation of nitrogen fixation, nitrification, denitrification and ammonifying bacteria, pathway of nitrate assimilation in photosynthetic and non photosynthetic system, transamination and deamination reactions.

#### Books Recommended

1. Microbial Physiology (2004) by Moat, A.G. and Foster, J.W., John Wiley and Sons.
2. Comprehensive Biotechnology, 1984, Vol.I to IV, Ed., Moo Young, Pergamon Press.  
Microbial Technology, 1977, Ed., H.J. Pepler, Reinhold Publishing Company, New York.
3. Pelezar, M.J. Reid, R.D. and Chan, E.C.S., 1993, Microbiology, Vth Edition, McGraw Hills.
4. Lehninger, A (2002), Biochemistry, Worth Publication, U.S.A.
5. Pepler, H.J. and Periman, D., 1976, Microbial Technology, Vol.I., Microbial Processes Academic Press.

**SEMESTER–III**  
**INDUSTRIAL MICROBIOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

1. Growth curve of Bacteria and fungi in shake flask using, Optical density, Biomass and Cell numbers
2. Effect of pH on the growth of Bacteria and fungi.
3. Effect of temperature on the growth of fungi/bacteria.
4. Isolation of micro organisms from air.
5. Isolation of micro organisms from soil.
6. Isolation of micro organisms from water.

**SEMESTER–III**  
**MICROBIAL & FOOD TECHNOLOGY**

**BASIC FOOD MICROBIOLOGY**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

**Instructions for the Paper Setters:**

There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT–I**

Food as a substrate for microorganisms, intrinsic and extrinsic factors affecting the growth of various microorganisms in foods. Microorganisms important in food microbiology-bacteria, yeasts and molds, sources of contamination in Foods.

**UNIT–II**

Fermented foods, origin of fermentation as a method of preparing indigenous foods, bread, dahi, dosa, idli, dhokla, etc.

**UNIT–III**

Principles of food preservation and spoilage, asepsis, anaerobic conditions, aseptic packaging, preservation methods, high temperature, low temperature, drying, chemical preservatives.

**UNIT–IV**

Spoilage of various milk and milk products, cereal and cereal products, vegetable and fruits, meat and meat products, canned foods. Food poisoning and food infection, staphylococcal, Clostridium and Salmonella intoxications.

**Books Recommended:**

1. Frazier, W.C. and Westhoff, D.C. 1978. Food Microbiology, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Banwart, G.J., 1987. Basic Food Microbiology. CBS Publishers and Distributions, New Delhi.
3. Power, C.B. and Dagniwals, H.F. 1992. General Microbiology. Volume II, Himalaya Publishing House, New Delhi.

**SEMESTER–III**  
**MICROBIAL & FOOD TECHNOLOGY**

**(PRACTICAL)**

**Time: 4 hours**

**Marks: 25**

- 1) To study microbiological quality of raw milk, pasteurized milk & dry milk by methylene blue reduction test & standard plate count.
- 2) To examine the micro flora of various foods like bread, raw milk, cheese, fruits & cereals.
- 3) To prepare the fermented food sauerkraut & study its microbiology & spoilage characteristics.
- 4) To isolate & recognize the microorganisms responsible for the fermentation of yoghurt.
- 5) To determine & compare the effect of deep freezing & refrigeration on the viability of microorganisms.

**SEMESTER–III**  
**BIOINFORMATICS (VOCATIONAL)**

**INTRODUCTION TO BIOINFORMATICS AND BIOLOGICAL DATABASES**  
**(THEORY)**

**Time: 3 Hrs.**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions.
2. Question 1 will be compulsory and will be of 10 short answer type. (1½ X10=15)
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks (15x4=60)

**UNIT–I**

**Introduction to Bioinformatics:** History of Bioinformatics, milestones, objectives and applications of Bioinformatics. Genome sequencing projects, Human genome sequencing project and its applications.

**Genomics and Proteomics:** Basic concept and analysis, Functional and comparative genomics: definition and applications.

**Introduction and Applications:** Transcriptomics, Metabonomics, Pharmacogenomics and population genomics.

**UNIT–II**

Introduction to Biological Databases, Type and kind of biological databases, Introduction to ASN1 and NCBI data Model: Why specialized data model is required for biological sequences. Open access bibliographic resources and literature databases: PubMed, BioMed Central.

**Database Retrieval and Deposition Systems-** SRS, Entrez, Bankit, Webin, Seqin, Sakura, AutoDep etc.

**Sequence Formats:** FASTA, Genbank, PIR, EMBL.

**UNIT–III**

**Nucleic Acid Sequence Databases:** GenBank, EMBL, DDBJ; **Protein Sequence Databases:** Uniprot-KB: SWISS-PROT, TrEMBL, UniParc

**Genome Databases:** Viral Genomes; Archeal and Bacterial Genomes; Ensembl Genome Project and TIGR, Eukaryotic genomes with special reference to model organisms (Yeast, Drosophila, *C. elegans*, Rat, Mouse, Human, plants such as *Arabidopsis thaliana*, Rice, etc.).

**UNIT–IV**

**Structural Databases:** PDB, PDBsum, NDB etc.; **Motifs and Pattern Databases:** PROSITE, Pfam etc.; **RNA Databases:** RNABase, SCOR. **Carbohydrates and Lipid Databases:** GlycoSuiteDB, LIPIDAT.

**Database for Searching Homologous Sequences: FASTA, BLAST.**

**Recommended Books:**

- 1 Durbin R. and Eddy S. (1998). Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids. *Cambridge University Press.*
- 2 Higgins D. And Taylor W. (2000). Bioinformatics: Sequence Structure & Data Banks: A Practical Approach. *Oxford University Press, USA.*
- 3 Ewens W. J. and Grant G. R. (2001). Statistical Methods in Bioinformatics: An Introduction. *Springer Verlag.*
- 4 Lesk A. M. (2002). Introduction to Bioinformatics. *Oxford University Press.*
- 5 Krane D. E. and Raymer M. L. (2002). Fundamental Concepts of Bioinformatics.
- 6 *Benjamin Cummings.*
- 7 Orengo C.A., Jones D.T. and Thornton J.M. (2003). Bioinformatics: Genes Proteins.

**SEMESTER–III**  
**BIOINFORMATICS (VOCATIONAL)**

**LAB IN INTRODUCTION TO BIOINFORMATICS AND BIOLOGICAL DATABASES**  
**(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 25**

**Credit Hours: 4½**

- 1 Study of NCBI, EBI and ExPasy data Repositories.
- 2 Study of Nucleic acid and protein databases: GenBank, EMBL, DDBJ, SWISS PROT,
- 3 INTERPRO, UNIPROT.
- 4 Study of Various human, plants and animal databases: Ensembl Genome project, TIGR database, Flybase, Maize GDB etc.
- 5 Study of Structural databases: PDB, PDBsum, NDB etc.
- 6 Study of Motifs and Pattern Databases: PROSITE, Pfam, etc.
- 7 Study of RNA databases: RNABase, SCOR
- 8 Carbohydrates and lipid databases: GlycoSuiteDB, LIPIDAT
- 9 Database Retrieval and deposition systems: SRS, Entrez, Bankit, Seqin, Webin, AutoDep.
- 10 Database for Searching Homologous Sequences: FASTA, BLAST.

### SEMESTER–III

## BIOTECHNOLOGY (VOCATIONAL)

### IMMUNOLOGY AND ANIMAL TISSUE CULTURE (THEORY)

**Time: 3 Hours**

**Credit Hours/week: 6**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

#### Instructions for the Paper Setters and Candidates:

1. There will be a total of 9 questions
2. Question 1 will be compulsory and will be of 10 short answer type. (1½ x10=15)
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks. (15x4=60)

#### UNIT-I

Types of Immunity-Innate and Adaptive; Lymphoid Cells, Heterogeneity of Lymphoid Cells; T-Cells; B-Cells, Null Cells; Monocytes, Polymorphs, Primary and Secondary Lymphoid Organs-Thymus, Bursa of Fabricius, Spleen, Lymph Nodes, Lymphatic System, MUCOSA Associated Lymphoid Tissue (MALT), Lymphocyte Traffic.

#### UNIT-II

Humoral Immune Response: Antigen and Antibody and their characteristics, Antigen-Antibody Interaction, Cell Mediated Immunity : Role of MHC and T-Cell Receptor Complex, Origin of Diversity in Immune System, Effector Mechanisms, Immunity to Infectious Diseases.

#### UNIT-III

History of Development of Cell Culture, the Natural Surroundings of Animal Cells, Metabolic Capability of Animal Cells, Simulating Natural Conditions for Growing Animal Cells, Importance of Growth Factors of the Serum.

#### UNIT-IV

Primary Culture, Anchorage and Non-Anchorage Dependent Cell Cultures, Secondary Culture, Transformed Animal Cells, Established/Continuous Lines, Commonly used Animal Cell Lines : Their Origin and Characteristics, Growth Kinetics of Cells in Culture.

#### Books Recommended:

1. Austyn, J.M. and Wood K.J. (1993), Principles of Cellular and molecular Immunology, Oxford University Press Inc. New York
2. Britch, J.R. and Lennox, E.S. (1995), Monoclonal Antibodies Principles and Application, Wiley Liss.
3. Strites D.P., Terr. A.I. & Parslow T.G. (1997), Medical Immunology, 9<sup>th</sup> Ed., PHI, Cambridge.
4. Kanfmann, S.H.E., Sher A., Ahmed, R. (2002). Immunology of Infections Diseases, ASM Press, Washington
5. Kuby, J. (2007), Immunology, 6<sup>TH</sup> Edition. W.H. Freeman and Company, New York
6. Paul, W. E. (2008), Fundamental Immunology, 5<sup>th</sup> Ed., Raven Press, New York
7. Roitt, I.M. Peter. J., Scamus. J. Martin, Dennis. R. Burton (2011), Essential Immunology, Grower Medical Publishing , New York

**SEMESTER–III****BIOTECHNOLOGY (VOCATIONAL)****IMMUNOLOGY AND ANIMAL TISSUE CULTURE  
(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Credit Hours/week: 4½****Immunology**

1. Blood Group testing.
2. Separation of serum from blood.
3. Separation of plasma from blood.
4. Enumeration of T-cells by E-rosetting method.
5. Separation of macrophages from Blood and testing by dye exclusion method.
6. Double immune Diffusion.

**Animal Tissue Culture**

1. Glass Ware sterilization.
2. Media sterilization.
3. Laboratory sterilization.
4. Sources of contamination and decontamination measures.
5. Preparation of Hanks Balanced salt solution.
6. Preparation of Minimal Essential Growth medium.

**SEMESTER–III****EDUCATION****SOCIOLOGICAL FOUNDATIONS OF EDUCATION****Time: 3 hours****Max. Marks: 100****Instructions for the Paper Setters:**

**Note:** (i) The question paper will consist of five Units: I, II, III, IV & V. Units I, II, III & IV will have two questions each carrying 20 marks. The students are to attempt one question from each unit approximately in 1000 words. Unit –V consists of 10 short answer type questions to be set from their entire syllabus and will carry 20 marks in all. Each short answer type question carries 2 marks, to be attempted in 8 to 10 lines.

**UNIT–I**

1. Meaning, nature & scope of Sociology.
2. Meaning, nature & scope of Educational Sociology

**UNIT–II**

1. Relationship between sociology & Education.
2. Impact of sociology on different aspects of Education.

**UNIT–III**

1. Home & school as agencies of Education.
2. Community & Mass-medias as agencies of Education

**UNIT–IV**

1. Education for National Integration
2. Education for Democratic Citizenship

**UNIT–V**

This Unit (V) will consist of 10 short type questions to be set from the entire syllabus of first four Units (I, II, III, IV)

**Books Recommended:**

1. Dash., D.N. Philosophical and Sociological Foundation of Education, Dominant Publisher, New Delhi, 2005.
2. Prasad and Chandra Sociological Foundations of Education, Deepak KSK Publishers, Delhi, 2006.
3. Sodhi, T.S. Philosophical and Sociological Foundations of Education, Bawa Publications, Patiala, 2007.
4. Taneja, V.R. Foundation of Education, Chandigarh, Mahindra Capital, Punjab, 2006.
5. Saxena Swaroop, N.R. Education In Emerging India Chaturvedi Sikha Society, R.Lall Book Depot, Meerut, 2005.

**SEMESTER–III****HUMAN RIGHTS****SOCIETAL ISSUES OF HUMAN RIGHTS IN INDIA****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:**

The question paper will consist of five sections A,B,C,D and E. Section A,B,C and D will have two questions from the respective portion of the syllabus and will carry 20 marks each. Section E will consist of 10 short answer type questions to be set from the entire syllabus i.e. sections A,B,C & D and will carry 20 marks in all, such short answer type questions carry 2 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each, from sections A,B,C and D of the question paper and the entire section E. The candidates are required to answer the short questions in not less than 50 words.

**UNIT–I**

Concepts and Approaches: Concept of Societal Problems and Human Rights.

**UNIT–II**

Theoretical approaches to Social problems and Social Changes.

**UNIT–III**

Social Problems: Causes and Types: Problems of Hierarchy. Problems of Minorities, Scheduled Caste and Scheduled Tribes; Population Explosion; Problems of Aged and Disabled; and Problems of Women.

**UNIT–IV**

Offence involving Human Rights; and Rights of Accrued, Rights of Inmates of Persons and Custodial Homes.

**UNIT–V**

Rights to Legal Aid, Punishments and Human Rights; and Reforms in Police and Jails.

**Recommended Books:**

1. Syed Mehartaj Begum, Human Rights in India: Issues and Perspectives, A.P.H. Publishers, New Delhi.
2. Sahu, Asima, Human Rights Violations and the Law, Pointer Publishers, Jaipur.
3. Naseema C., Human Rights Education, Kanishka Publishers, New Delhi.
4. Subbian Adaikkalam, Human Rights: Philosophy Promotion Protection and Perspective.
5. Kumar, Bindal, (2000), Problems of Working Children, APH Publication, New Delhi.
6. Dikshit, R.C., (1998), Human Rights and the Law, Universal and Indian, Deep and Deep, New Delhi.
7. Jha, R.C., (1995), Resurrecting: Human Right in India, Sheridan Book Company, New Delhi
8. Bava, Noorjahan, (ed), (2000), Human rights and Criminal Justice Administration in India, New Delhi: Uppal Publishing House.
9. Ghosh, S.K., (1993), Torture and Rape in Police Custody: Asish Publishing House, New Delhi.
10. Sharma, A.K. (1995) “Human Rights Violations of Street Children and Child Labor in New Delhi”, In B. P. Singh Seghal (ed.) Human Rights in India: Problems and Perspectives, Deep and Deep, New Delhi.
11. Singh, S.K., (1994), Bonded Labor and the La, Deep and Deep. New Delhi.

**SEMESTER–III****DAIRY FARMING (VOCATIONAL)  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Instructions for the Paper Setter:**

1. Question paper should be set strictly according to the syllabus and in the Punjabi Language.
2. The language of questions should be straight and simple.
3. Theory paper shall consist of three parts:
  - (a) Ten short compulsory questions of 1 mark each requiring replies up to five lines each (Total marks:  $10 \times 1 = 10$  marks).
  - (b) Ten questions of 3 marks each requiring short replies shall be asked. The candidate has the choice to attempt eight questions (Total marks  $8 \times 3 = 24$ ).
  - (c) Four questions of descriptive type requiring five pages for each answer shall be asked. The candidate has the choice to attempt two questions. (Total marks :  $08 \times 02 = 16$ )
4. The question paper should cover the whole syllabus.

**General:** Factors affecting quality and quantity of milk production. Essentials of clean milk production. Sources of contamination of milk. Milking machine. Importance of milk chilling.

**Housing:** The main objectives of housing, advantages of proper housing, factors affecting construction of dairy farm building, methods of housing dairy animals; advantages and disadvantages of various methods of housing; housing requirements of dairy animals.

**Feeding:** Food nutrients, functions of various nutrients in animal body. Energy value of feeds, Factors affecting nutritive value of feeds. Requirements of nutrients in different stages of age, production, season and pregnancy. Formulation of rations, feed, pellets, Transportation and storage of cattle feed, hay and wheat bhusa enrichment. Availability of forages in different seasons. Schedule of feeding dairy animals.

**SEMESTER–III****DAIRY FARMING (VOCATIONAL)  
(PRACTICAL)****Time: 3 Hours****Marks: 50**

**Note: Preparation of Practical Notebook on the basis of work done in the laboratory practical, Weekly write-up of daily job assignments is compulsory.**

1. Visits to Dairy farms having machine milking, fodder harvesting, feed mixing etc., Veterinary hospitals, Milk collection centre and milk plant.
2. Identification of various feedstuffs, medicines, chemicals, equipment, instruments, photographs related to dairy farming.

**SEMESTER–III**

**RSL-201**

**RUSSIAN**

**PAPER–I (WRITTEN) (APPLIED GRAMMAR)**

**Time: 3 Hrs.**

**Max. Marks: 80**

**Grammar**

Questions based on all the topics covered in the lessons in the prescribed text book.

1. Declension of nouns in all the cases in singular as plural.
2. Declension of personal pronouns.
3. Usage of perfective as well as perfective aspect of the verbs.
4. Conjugation of verbs in the present tense.
5. Present as well as future tense of the verb.
6. Declension of adjectives in all the cases.
7. Verbs of motion with prefixes.

**Marks: 25**

**Translation, Composition & Comprehension**

- Translation from English into Russian (Unseen sentences or a passage comprising not more than 200 words) **Marks: 15**
- Translation from Russian into English/Hindi/Punjabi. (seen passage comprising not more than 150 words) **Marks: 15**
- Comprehension (Seen Text ) **Marks: 10**
- Composition (one out of any three topics) **Marks: 15**

**Topics:** My friend; My family; City; My University; My work; An Off Day; Our Library.

**Note:** Glossary of difficult words may be given for translation purpose in the question paper.

**SEMESTER–III****RUSSIAN****PAPER–II (ORAL)****Max. Marks 20**

- |  |                  |
|--|------------------|
| - Reading of a text                    | <b>Marks: 05</b> |
| - Dictation                            | <b>Marks: 05</b> |
| - Conversation                         | <b>Marks: 05</b> |
| - Retelling of a small text in Russian | <b>Marks: 05</b> |

**Prescribed Text-Book:**

“RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 31 to 40)

**Recommended Books:**

1. Langenscheidt Pocket Russian Dictionary.
2. Russian for Indians by H C Pande.

**SEMESTER–III****FRL–201****FRENCH****PAPER–I (WRITTEN) (COMPOSITION & GRAMMAR)****Time: 3 Hrs.****Max. Marks: 80**

1. A Dialogue in French of about one page on the topics covered in the Textbook. **Marks: 10**
2. Questions on applied grammar. (Exercises from the textbook) **Marks: 20**
3. Short answer questions from the lessons covered in the textbook. **Marks: 10**

The general questions are based on the vocabulary of the text book.

(five out of the ten to be attempted).

**Translation**

1. Translation from French into English. **Marks: 10**
2. Translation from English into French. **Marks: 10**
3. Summary of one of the poems studied. **Marks: 10**
4. Conte De Fée – La belle au bois dormant- Charles Perrault. **Marks: 10**

**NOTE: Glossary of difficult words may be given for translation purpose in the question paper.**

**SEMESTER–III****FRL–201****FRENCH****PAPER–II: (ORAL)****Max. Marks: 20**

- |                      |                  |
|----------------------|------------------|
| - Reading of a text  | <b>Marks: 05</b> |
| - Dictation          | <b>Marks: 05</b> |
| - Conversation       | <b>Marks: 05</b> |
| - Oral Comprehension | <b>Marks: 05</b> |

**Prescribed Textbook:**

“CONNEXIONS-II” (Units 1-6) by Regine Merieux & Yves Loiseau, Published by Didier

**Recommended Book :**

**Nouveau Sans Frontières II** by Philippe Dominique & Jacky Girardet

- Conte De Fée –La belle au bois dormant- Charles Perrault

- Poetry –Dejeuner du Matin (Prévert)

Le Renard et le corbeau (Fontaine)

La Blanche Neige (Appollinaire)

**SEMESTER–III**

**URDU**

**URL–201: (PROSE AND POETRY)**

**Time: 3 Hours**

**Max. Marks: 100**

**COURSE OF STUDIES**

**Prose and Poetry:**

Explanation of Verses

Translation of Prose

Introduction to Literary contribution of the following poets and prose writers:

**Poets:** Mir Taqi Mir, Asad-ullah-Khan Ghalib, Nazir Akbarabadi, Brij Narain Chakbast & Jigar Muradabadi

**Prose Writers:** (Sir Syed Ahmad Khan, Mohamad Hussain Azad, Altaf Husain Hali, Munshi Prem Chand and Rashid Ahmad Siddiqui)

**Units and Theme**

- |   |                      |
|---|----------------------|
| 1. Passages for Translation (Four out of Five)      | <b>5x4=20 Marks</b>  |
| 2. Stanzas for explanation (Four out of Five)       | <b>5x4=20 Marks</b>  |
| 3. Theme/ Summary/ Central Idea of a Poem or Lesson | <b>10x1=10 Marks</b> |
| 4. Word meanings                                    | <b>10x1=10 Marks</b> |
| 5. Questions on poets studied (Two out of four)     | <b>20x2=40 Marks</b> |

**Book Prescribed:**

Naqoosh-e-Adab published by Education Book House, A.M.U. Market, Aligarh.

**Books Recommended:**

1. Mukhtasar Tarikh-Adab-e- Urdu by Aijaz Husain, Education Book House, A.M.U. Market, Aligarh.
2. Urdu Zaban-o-Adab ka Khaka by Khushhal Zaidi, Edara Bazme Khizre Rah, 80- Ghaffar Manzil Jamianagar, New Delhi, 110025.

**SEMESTER–III**

**PERSIAN**

**PRL–201:**

**PROSE AND POETRY**

**Time: 3 Hours**

**Max. Marks: 100**

**COURSE OF READING**

**Prose:**

Azan-e-Maghrib by Saeed Nafisi (Page-171)

Khana-e-Pidari by Saeed Nafisi (Page-178)

Khud-Kushi by Mohammad Hijazi (Page-199)

Eidi by Mohammad Hijazi (Page-205)

**Poetry:**

a) Ghazaliyat -e- Hafiz

Agar An Turk Shirazi Badast Arad Dile Mara

Dil Miravad z Dastam Sahib Dilan Khudara

Saqi Banoor -e-Bade Bar Afroz Jam-e-Ma. (Pages 4-8)

b) Ghazaliyat-e-Khusrau

Jaan Z tan Burdi-o-Dar Jani Hanuz

Madeh Pindam Keh Man Dar Sene Sauda-e-Digar Daram

Janan Shabi Bakoo-e-Ghariban Maqam Kun (Pages 24-25)

**Qasida Mlik-ush-Sho'ara Bahar (Jughad-e-jang)**

1. Fughan z Jughad-e-Jang-o- Marghwai-o. (Pages-54-59)

**Masnavi-Maulana Rumi**

Bishno Az Nai Choon Hikayat Mee Kunad

Hikayat Ashiq Shudan-e-Badshah Bar Kaneezak

Zahir Shudan-e-Ijz -e-Hakiman Az Mo'alija-e-Kaneezak

Badshah b Dargah-e-Khuda-o-Khwab Didan Shah Wali Ra (Pages 117-133)

### UNITS AND THEME

- |   |                       |
|---|-----------------------|
| 1. Passages for Translation (Four out of Five)                    | <b>5x4=20 Marks</b>   |
| 2. Stanzas for explanation (Four out Five)                        | <b>5x4=20 Marks</b>   |
| 3. Theme/ Summary/ Central Idea of a Poem or Lesson               | <b>10x1=10 Marks</b>  |
| 4. Word Meanings  | <b>10x10=10 Marks</b> |
| 5. Questions on life and works of poets studied (Two out of four) | <b>20x2=40 Marks</b>  |

#### Book Prescribed:

Nisab-e-Jadeed-e-Farsi, Published by Jyed Press Ballimaran Delhi-6 and available from  
Maktaba Jamia, Urdu Bazaar, Jama Masjid, Delhi-6

#### Books Recommended:

1. Jadid Farsi Shai'ri by Dr. Mohd. Taqi Ali Abidi
2. Jadid Farsi Shai'ri by Dr. Munib-ur-Rehman
3. Asari Farsi Shai'ri by Dr. Syed Ahsan- uz-Zafar
4. Masnaviyat-e-fani Kashmiri by Iraq Raza Zaidi.

**SEMESTER–III**

**SANSKRIT (ELECTIVE)**

¼ukVd rFkk 0; kdj .k½

I e; &3 ?k. Vs

i wkkzd&100

i z u&i = dk ek/; e fglnh gksxkA mYkj I ddr@fglnh@i atkch@vaxst h ea gks I drrs gA

i kB; Øe &

¼d½ Loluokl onYke-¼HkkI ½ % pkS[kEck I ddr i ddk'ku] okj.k.kl h] 1983] 50 vad

i z uks ds fy, fu/kkFjr fclnq &

1- Loluokl onYke-

¼d½ vad I kj

¼[k½ i k=&fp=.k

¼x½ uk; d&ukf; dk

¼?k½ dFkk&oLrq

¼M-½ ukV; dyk

¼p½ j I &; kstuk-----bR; kfnA

¼[k½ 0; at u I fu/k

10 vad

¼x½ /kkrrq : i ¼yV} ykV} yV} y³} fof/kfy³~ydkjka e½

20 vad

¼d½ Hokfnx.k & j{k} i k] ueA

¼[k½ vnkfnx.k & vI A

¼x½ rnkfnx.k & rñ} fl p} i PN} ep} feyA

¼?k½ rukfnx.k & dA

¼³½ pj} kfnx.k & pj} dFk} Hk{k} fpUr} j pA

¼?k½ rf) r i R; ;

10 vad

Ro] ry} e; V} rji} rei A

¼³½ NUn

10 vad

vu{Vq} } oa kLFk] blnøtk] mi lnøtk] mi tkfr] ekfyuh] fo | {kkyk] ol Ur  
frydkA

izui = fuekzk funzk &

- I Loluokl onŸke- l s 10 izu vfrl f{klr mŸkja ds fy; s iNs tk; ~~xA~~ ftuea l s 5  
dk mŸkj nus gkxA  $2 \times 5 = 10$
- II Loluokl onŸke l s 8 i | nsdj 4 ds l jykFkz iNs tk, A iR; sd ds 5 vad gkxA  
 $5 \times 4 = 20$
- III Loluokl onŸke l s 4 l fDr; ka nsdj 2 dh l iZ æ 0; k[; k iNh tk, A iR; sd ds 5 vad  
gkxA  $2 \times 5 = 10$
- IV Loluokl onŸke l s l EcfU/kr 2 cM; izu nsdj fdl h , d dk mŸkj nus dks dgk tk, A  
bl ds 10 vad gkxA i | nsdj 4 ds l jykFkz iNs tk, A  
 $1 \times 10 = 10$
- V bl ea 0; atu l fu/k l s l fu/k@l fu/k foPNn ij vk/kkfjr 10 izu ea l s 5 dk mŸkj  
iNk tk, A iR; sd ds 2 vad gA  $2 \times 5 = 10$
- VI 8 /kkrq nsdj 4 ds : i fy[kus ds fy, dgk tk, A iR; sd /kkrq ds : i ds fy, 5 vad  
gA  $5 \times 4 = 20$
- VII 10 'kCnka ds l kFk fu/kkfjr rf) r iR; ; nsdj 5 ds rf) rkUr : i fy[kok; s tk; ~~xA~~  
iR; sd rf) rkUr 'kCn ds 2 vad gkxA  
 $2 \times 5 = 10$
- VIII 4 NUn nsdj 2 iNs tk, ~~xA~~ iR; sd ds 5 vad gkxA  
 $5 \times 2 = 10$

**SEMESTER–III**

**FUNCTIONAL SANSKRIT  
(VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

ukv & izu i = fglnh ea gksxkA

izu i = fuekzk funzk

भाग क में 5 प्रश्न देकर 3 का उत्तर देने के लिए कहा जाये।

3 x 20 = 60

भाग ख में 7 प्रश्न देकर 4 का उत्तर देने के लिए कहा जाये।

4 x 10 = 40

ikB; Øe &

I Ldkj fof/k; ka

I heUrku; u

tkrdeZ

ukedj .k

d .kbsk

vlu i k' kue~

pMkdeZ

fo | kj EHk

mi u; u

I ekoRi

vUR; f"V

I cf/kr I Ldkj ka dk egYo

**SEMESTER–III**

**ENGLISH (COMPULSORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Texts Prescribed:**

1. *Making Connections* by Kenneth J. Pakenham, 2<sup>nd</sup> Edn. CUP
2. *Moments in Time: An Anthology of Poems*, GNDU, Amritsar
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

**Course Contents:**

1. *Making Connections* by Kenneth J. Pakenham, 2<sup>nd</sup> Edn. CUP: Unit-I and Unit-II
2. *Moments in Time*: Poems at Sr. No. 1-6
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP: Units 98-145

**Instructions for the Paper-Setter and Distribution of Marks:**

**The paper setters should avoid questions of theoretical nature on English Grammar.**

**The question paper will consist of three sections and distributions of marks will be as under:**

**SECTION–A: 16 Marks**

**SECTION–B: 20 Marks**

**SECTION–B: 14 Marks**

**SECTION–A**

- I. TWENTY (20) questions on the usage of grammar related to units 98-145 of *English Grammar in Use* will be set for the students to attempt any SIXTEEN (16) of these questions. **(1x16=16 Marks)**

**SECTION–B**

2. TWO (2) questions (with sub parts) based on strategies and skill development exercises as given before and after reading essays in UNIT-I & UNIT-II of the prescribed text book *Making Connections* will be set. The number of items in each question will be 50% more than what a student will be expected to attempt so that the question provides internal choice. **(6x2=12 Marks)**
3. THREE (3) questions on central idea, theme, tone and style etc. of three poems from the prescribed textbook, *Moments in Time* will be set. The students will be required to attempt any TWO of these questions. **(4x2=8 Marks)**

**SECTION–C**

4. ONE question (with internal choice) requiring students to explain a stanza with reference to context will be set. The stanzas for explanation will be taken from the poems prescribed in the syllabus **(1x7=7 Marks)**
5. One question requiring the students to write an essay on ONE of the TWO given topics will be set. **(1x7=7 Marks)**

**SEMESTER–III**  
**ENEGLISH (ELECTIVE)**

**Time: 3 Hours**

**Max. Marks: 100**

**Books Prescribed:**

1. *Animal Farm* by George Orwell
2. *Fresh Showers*, G.N.D.U. Amritsar
3. *New Directions* (Part 1-3)
4. *Better Pronunciation of English* by J.D. O'Connor

**Course Contents:**

1. *Animal Farm*—Complete Text
2. *Fresh Showers*  
The following poems are deleted:  
(i) Alexander's Feast, (ii) Evelyn Hope, (iii) Adam's Curse, (iv) Lay Your Sleeping Head, (v) A Hub for the Universe, (vi) Birches, (vii) Tithonus
3. *New Directions*-Part 1,2,3
4. *Transcription of Words*: agony, antonym, capable, committee, decorum, aero plane, calendar, privacy, absolute, academy, academic, advertisement, adversity, allopathic, mathematics, automobile, biography, biology, competition, competitive, certificate, certify, democracy, capacity, magnificent, photography, photograph, photographic, vindictive, celebrity

**Distribution of Marks & Instructions for the Paper Setters:**

The question paper will consist of three sections and distribution of marks will be as under:

Section A: 20 Marks

Section B: 48 Marks

Section C: 32 Marks

**Section–A**

- I. SIX questions, each requiring a short answer, from the prescribed textbook *New Directions* will be set in the question paper. The examinees will be required to answer all these questions. (2x6= 12 Marks)
- II. Transcription of any EIGHT words, FOUR out of the prescribed list and any other FOUR polysyllabic words. (1x8=8 Marks)

**Section–B**

- I. THREE questions, each requiring a brief answer, related to incidents, anecdotes, minor characters, the use of figure of speech, tone and style etc. from the prescribed novel will be set in the paper. The examinees will be required to answer any TWO of these questions. (6x2=12 Marks)
- II. THREE questions, each requiring a brief answer, related to theme, central idea, the use of figure of speech, tone and style etc. from the prescribed poems will be set in the paper. The examinees will be required to answer any TWO of these questions. (6x2=12 Marks)
- III. FIVE questions (with sub parts, if necessary) based on the exercises in the text book *New Directions* will be set in the question paper. The examinees will be required to answer any FOUR of these questions. (6x4=24 Marks)

**Section–C**

1. An essay type question, with internal choice, on theme, central idea, tone, and style etc. of the prescribed poems (16 Marks)
2. An essay type question, with internal choice, on theme, Characterization, plot, tone, and style etc. of the prescribed novel (16 Marks)

**SEMESTER–III****FUNCTIONAL ENGLISH (VOCATIONAL)  
WRITING SKILLS****Time: 3 Hours****Max. Marks: 100****Objective:**

The objective is to teach the students the technique of writing and developing their power of expression through composition. Descriptive writing; report writing; script writing for announcement, comparing should be administered.

**Books Prescribed:**

- a) *Essentials of Grammar and Composition* by Legget et. al., Prentice Hall.
- b) *Collins Cobuild Grammar of English*
- c) *Study Writing: A Course in Writing Skills for Academic Purposes* by Liz Hamp-Lyons & Ben Heasley, CUP

**Course Contents:**

1. Basic Sentence Faults: Faulty pronoun reference; shift in point of view; misplaced parts; dangling constructions
2. Manuscript mechanics and punctuation
3. Textual Cohesion: reference, ellipsis, substitution & repetition; Lexical and Conjunctive cohesion
4. Sentence Variation and effective sentences
5. Effective Paragraphs
6. Paraphrase, summary and Precis of prose passages
7. Academic and personal writing styles
8. Grammar of academic discourse
9. Writing about events in time and connecting events in text

**Distribution of Marks & Instructions for the Paper Setters:**

The question paper will consist of three sections and distribution of marks will be as under:

**SECTION–A: 20 Marks****SECTION–B: 48 Marks****SECTION–B: 32 Marks**

### SECTION–A

A question containing TWENTY items/ sub parts, requiring examinees to correct the basic sentence faults related to the use of faulty pronoun reference, unnecessary change in tense, shift in point of view, misplaced parts, dangling constructions. **(1x20 = 20Marks)**

### SECTION–B

- I. FIVE questions in the form of exercises to test the use of grammar in academic and personal styles of writing or understanding and using language of comparison and contrast or using in the texts language of definition and generalization etc as given in the prescribed book, *Study Writing*. The examinees will attempt any FOUR of these questions. **(6x4 = 24 Marks)**
- II. FIVE questions requiring examinees to organize given sentences into a coherent passage, or to add conjunctions/ linking devices to improve a given passage or using linguistic resources of sentences, vocabulary and punctuation etc. to change a given passage into formal or informal writing. The examinees will attempt any FOUR of these questions **(6x4 =24 Marks)**

### SECTION–C

- I. ONE question on applying the grammar of coordination, subordination, cohesion etc. as linguistic strategies to write a short passage. **(16 Marks)**
- II. ONE question requiring the students to correct the use of grammar and rewrite a passage of about 250 words. **(16Marks)**

**SEMESTER-III**

**PUNJABI (COMPULSORY)**  
**ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ : 50

1. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ (ਸੰਪਾ.ਡਾ. ਗੁਰਬਚਨ ਸਿੰਘ ਤਾਲਿਬ),  
ਪੰਜਾਬ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਆਮ੍ਰਿਤਸਰ।
2. ਸਮਾਂ ਮੰਗ ਕਰਦਾ ਹੈ (ਇਕਾਂਗੀ ਸੰਗ੍ਰਹਿ) (ਸੰਪਾ. ਕੇਵਲ ਧਾਲੀਵਾਲ)  
ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
3. ਸੰਖੇਪ ਰਚਨਾ (ਪ੍ਰੈਸੀ)
4. ਮੂਲ ਵਿਆਕਰਣ ਇਕਾਈਆਂ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ  
(ਭਾਵੰਸ਼, ਸ਼ਬਦ, ਵਾਕੰਸ਼, ਉਪ-ਵਾਕ ਅਤੇ ਵਾਕ)

**ਅੰਕ ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ**

- |   |        |
|---|--------|
| 1. ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ/ਕਲਾ ਪੱਖ, (ਦੋ ਵਿੱਚੋਂ ਇੱਕ)  | 15 ਅੰਕ |
| 2. ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਟ ਜੁਗਤਾ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਜਾਂ ਚਾਰ ਵਿੱਚੋਂ ਦੋ ਪਾਤਰਾਂ ਦੀ<br>ਪਾਤਰ ਉਸਾਰੀ | 15 ਅੰਕ |
| 3. ਸੰਖੇਪ ਰਚਨਾ (ਪ੍ਰੈਸੀ)  | 10 ਅੰਕ |
| 4. ਲੜੀ ਨੰਬਰ ਚਾਰ ਉੱਤੇ ਨਿਰਧਾਰਤ ਵਿਆਕਰਣ ਵਿੱਚੋਂ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ<br>ਜਾਣਗੇ।            | 10 ਅੰਕ |

**SEMESTER-III**

**PUNJABI (ELECTIVE)**  
**ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ: 100

1. ਮੱਧਕਾਲੀਨ ਪੰਜਾਬੀ ਕਾਵਿ (1701-1900)  
(ਸੰਪਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿੱਲੋਂ ਅਤੇ ਨਰਜੀਤ ਸਿੰਘ ਖਹਿਰਾ)  
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007  
(ਫਜ਼ਲਸ਼ਾਹ ਅਤੇ ਹਾਸਮ ਪਾਠਕ੍ਰਮ ਦਾ ਹਿੱਸਾ ਨਹੀਂ ਹਨ) 40 ਅੰਕ
2. ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ (ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ,  
ਅੰਮ੍ਰਿਤਸਰ। (ਉਹ ਸੋਚਦੀ, ਘੋਟਣਾ, ਡੈੱਡ-ਲਾਈਨ, ਓਪਰਾ ਮਰਦ ਪਾਠਕ੍ਰਮ ਦਾ ਹਿੱਸਾ ਨਹੀਂ ਹਨ) 30 ਅੰਕ
3. ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ (ਨਿਬੰਧ ਸੰਗ੍ਰਹਿ) (ਸੰਪਾ. ਡਾ. ਰਣਜੀਤ ਸਿੰਘ ਬਾਜਵਾ ਅਤੇ ਪ੍ਰਿੰਸੀਪਲ  
ਵੀਰ ਸਿੰਘ ਰੰਧਾਵਾ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007. 30 ਅੰਕ

**ਯੂਨਿਟ ਅਤੇ ਥੀਮ**

1. ਮੱਧਕਾਲੀਨ ਪੰਜਾਬੀ ਕਾਵਿ (1701-1900)
  - (ੳ) ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ (ਚਾਰ ਵਿੱਚੋਂ ਦੋ) 20 ਅੰਕ
  - (ਅ) ਕਿਸੇ ਕਵਿਤਾ ਦਾ ਵਿਸ਼ੈ ਵਸਤੂ/ਕਵੀ ਬਾਰੇ ਜਾਣਕਾਰੀ ਤੇ ਉਸਦਾ ਯੋਗਦਾਨ  
(ਦੋ ਵਿੱਚੋਂ ਇੱਕ) 10 ਅੰਕ
  - (ੲ) ਮਲਟੀਪਲ ਚੋਣ ਪ੍ਰਸ਼ਨ (ਸੱਤ ਵਿੱਚੋਂ ਪੰਜ) 5x2=10 ਅੰਕ
2. ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ : ਕਿਸੇ ਇਕ ਕਹਾਣੀ ਦਾ ਵਿਸ਼ੈ-ਵਸਤੂ/ਕਲਾ, ਕਹਾਣੀਕਾਰ ਬਾਰੇ  
ਜਾਣਕਾਰੀ ਅਤੇ ਉਸਦਾ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) 20 ਅੰਕ
3. ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ (ਨਿਬੰਧ ਸੰਗ੍ਰਹਿ)  
ਕਿਸੇ ਇਕ ਲੇਖ ਦਾ ਵਿਸ਼ੈ/ਸਾਰ/ਸ਼ੈਲੀ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) 20 ਅੰਕ
4. ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ ਅਤੇ ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਪੁਸਤਕਾਂ ਵਿੱਚੋਂ ਪਾਠ  
ਆਧਾਰਿਤ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ (ਛੇ ਵਿੱਚੋਂ ਚਾਰ) 4x5=20 ਅੰਕ

**SEMESTER-III**

**ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ**

**(FUNCTIONAL PUNJABI) (VOCATIONAL)**

**(ਥਿਊਰੀ)**

ਪਰਚਾ ਏ :	ਲਿਖਣ ਸ਼ੈਲੀਆਂ	ਕੁਲ ਅੰਕ: 100
ਪਰਚਾ ਬੀ :	ਰਸਮੀ ਲਿਖਤਾਂ	ਅੰਕ : 50
		ਅੰਕ : 50
ਸਮਾਂ :	3 ਘੰਟੇ	ਕੁਲ ਅੰਕ: 50

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਵਿਆਕਰਣਕ ਬਣਤਰ ਨਾਲ ਜਾਣ-ਪਛਾਣ
2. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਰਜਿਸਟਰਾਂ ਸੰਬੰਧੀ ਜਾਣ-ਪਛਾਣ
3. ਪ੍ਰਾਪਤ ਲਿਖਣ ਸ਼ੈਲੀਆਂ ਨਾਲ ਜਾਣ ਪਛਾਣ ਕਰਾਉਣਾ ਅਤੇ ਰਸਮੀ ਪੱਧਰ 'ਤੇ ਲਿਖਣ ਦਾ ਅਭਿਆਸ ਕਰਾਉਣਾ।

**ਅੰਕ ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ**

1. ਸਾਧਾਰਣ ਵਾਕਾਂ ਨੂੰ ਸੰਯੁਕਤ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕਾਂ ਵਿਚ ਬਦਲਣਾ : ਸਿਧਾਂਤ ਅਤੇ ਅਮਲੀ ਵਰਤੋਂ  
(ਘੰਟੇ-ਘੰਟ 50 ਅਭਿਆਸ ਕਰਾਉਣੇ) 15 ਅੰਕ
2. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਰਜਿਸਟਰਾਂ ਸੰਬੰਧੀ ਜਾਣ-ਪਛਾਣ : ਸਾਹਿਤਕ ਭਾਸ਼ਾ, ਉਪਭਾਸ਼ਾ, ਵਿਅਕਤੀ ਭਾਸ਼ਾ,  
ਪਿਜਿਨ ਤੇ ਕਰਿਓਲ, ਬਣਾਵਟੀ ਭਾਸ਼ਾ। 20 ਅੰਕ
3. ਰਿਪੋਰਟਿੰਗ ਕਰਨਾ : ਸਮਾਚਾਰ ਲਿਖਣ ਦੀ ਵਿਧੀ ਅਤੇ ਤੱਤ, ਸਮਾਚਾਰਾਂ ਦੇ ਪ੍ਰਕਾਰ, ਸੰਖੇਪ ਕਰਨਾ  
ਤੇ ਵਿਆਖਿਆ ਕਰਨੀ। 15 ਅੰਕ

**SEMESTER-III****ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ****(FUNCTIONAL PUNJABI) (VOCATIONAL)****(ਪ੍ਰੈਕਟੀਕਲ)**

ਸਮਾਂ: 2 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

(ਪ੍ਰੈਕਟੀਕਲ ਦੇ ਪੇਪਰ ਵਿਚ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਸੁਣਨ-ਸਮਝਣ-ਲਿਖਣ ਯੋਗਤਾ ਦੀ ਪ੍ਰੀਖਿਆ ਲਈ ਜਾਵੇਗੀ)

ਭਾਸ਼ਾ ਪ੍ਰਯੋਗਸ਼ਾਲਾ ਵਿਚ ਅਭਿਆਸ ਕਰਨਾ:

- (ੳ) ਪੰਜਾਬੀ ਦੇ ਉਪ-ਭਾਸ਼ਾਈ ਉਚਾਰਨ ਨੂੰ ਸੁਣ ਕੇ ਰਿਪੋਰਟ ਤਿਆਰ ਕਰਨੀ।
- (ਅ) ਸੁਣੇ ਗਏ ਸ਼ਬਦਾਂ ਦੇ ਆਧਾਰ 'ਤੇ ਸਾਧਾਰਣ ਤੇ ਸੰਯੁਕਤ ਵਾਕ ਬਣਾਉਣੇ।
- (ੲ) ਭਾਸ਼ਣ ਨੂੰ ਸੁਣ ਕੇ ਸੰਖੇਪ ਰੂਪ ਤਿਆਰ ਕਰਨਾ।
- (ਸ) ਰਿਕਾਰਡ ਕੀਤੀਆਂ ਖ਼ਬਰਾਂ ਨੂੰ ਸੁਣ ਕੇ ਲਿਖਣਾ।

**SEMESTER-III**

**ਮੁੱਢਲੀ ਪੰਜਾਬੀ**  
(In lieu of Compulsory Punjabi)

**ਪਾਠ-ਕ੍ਰਮ**

<b>ਸਮਾਂ: ਤਿੰਨ ਘੰਟੇ</b>	<b>ਕੁਲ ਅੰਕ: 50</b>
1. ਵਿਆਕਰਣਕ ਇਕਾਈਆਂ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ; ਵਾਕਾਂਸ਼, ਉਪਵਾਕ ਅਤੇ ਵਾਕ	<b>20 ਅੰਕ</b>
2. ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ : ਪੈਰਾ ਰਚਨਾ, ਚਿੱਠੀ ਪੱਤਰ, ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ	<b>15 ਅੰਕ</b>
3. ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ ਪੈਰਾ ਅਧਾਰਿਤ ਪ੍ਰਸ਼ਨ ਸੰਖੇਪ ਰਚਨਾ	<b>15 ਅੰਕ</b>

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ:**

1. ਵਿਆਕਰਣਕ ਇਕਾਈਆਂ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਨਾਲ ਸਬੰਧਿਤ 5-5 ਅੰਕਾਂ ਦੇ ਤਿੰਨ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ-ਇਕ ਜਾਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
2. ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ 'ਤੇ ਪੈਰਾ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
3. ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਵਿਸ਼ੇ 'ਤੇ ਨਿੱਜੀ ਜਾਂ ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
4. ਵਿਦਿਆਰਥੀ ਨੂੰ ਇਕ-ਇਕ ਅੰਕ ਦੇ ਪੰਜ ਅਖਾਣਾਂ ਜਾਂ ਮੁਹਾਵਰਿਆਂ ਨੂੰ ਵਾਕਾਂ ਵਿਚ ਵਰਤ ਕੇ ਅਰਥ ਸਪੱਸ਼ਟ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
5. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਕ ਪੈਰਾ ਦਿੱਤਾ ਜਾਵੇਗਾ ਅਤੇ ਉਸ 'ਤੇ ਆਧਾਰਿਤ ਇਕ-ਇਕ ਅੰਕ ਦੇ ਪੰਜ ਪ੍ਰਸ਼ਨ ਦਿੱਤੇ ਜਾਣਗੇ। ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਤਕ ਸੀਮਤ ਹੋਵੇਗਾ।
6. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਕ ਪੈਰਾ ਦਿੱਤਾ ਜਾਵੇਗਾ ਜਿਸ ਦੀ ਉਸ ਨੇ ਇਕ ਤਿਹਾਈ ਹਿੱਸੇ ਵਿਚ ਸੰਖੇਪ ਰਚਨਾ ਕਰਨੀ ਹੋਵੇਗੀ ਅਤੇ ਢੁੱਕਵਾਂ ਸਿਰਲੇਖ ਦੇਣਾ ਹੋਵੇਗਾ।
7. ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਭਾਸ਼ਾ ਸਰਲ ਅਤੇ ਸਪਸ਼ਟ ਹੋਵੇਗੀ।

**SEMESTER-III**  
**HINDI (ELECTIVE)**

e/; ; xhu dk0; ] bfrgkl ] 0; kdj .k rFkk dk0; kx

l e; & 3 ?k. Vs

i wkkd% 100

uksV% ; g iz u&i = rhu Hkkxka ea foHkDr gksxA

[k.M&, d

इस भाग में बीस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 20 हैं।

[k.M&nks

इस भाग में 12 प्रश्न पूछे जाएंगे जिन में से 8 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 48 हैं।

[k.M& rhu

इस भाग में 4 प्रश्न पूछे जाएंगे। जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। इन प्रश्नों का उत्तर 5 पृष्ठों का होगा। कुल अंक 32 हैं।

fu/kkfjr i kB; dæ

1. काव्य—उत्कर्ष, संपादक—डॉ. सुधा जितेन्द्र, लोकभारती प्रकाशन, नई दिल्ली, 2016  
निर्धारित कवि: कबीर, गुरु नानक देव, सूरदास, तुलसीदास, रविदास, बिहारी, रहीम, गुरु तेग बहादुर।
2. हिन्दी साहित्य का इतिहास, प्रकाशक, गुरु नानक देव यूनिवर्सिटी, अमृतसर,  
हिन्दी साहित्य के आदिकाल का अध्ययन अपेक्षित है। तत्संबंधी प्रमुख परिक्षेत्र—इतिहास, काल विभाजन, आदिकाल: परिस्थितियां, विशेषताएं।
3. अलंकार निरूपण:  
अनुप्रास, यमक, उपमा, रूपक, प्रतीक, विरोधाभास (छ: अलंकार) परिभाषा, लक्षण सोदाहरण परिचय।
4. स्वर, व्यंजन: परिभाषा, लिंग, वचन, प्रचलित संधि और संधि विच्छेद, (केवल व्यावहारिक)

fo" k; kuqny vad foHkkt u

1. प्रथम खंड में अलंकारों और व्याकरण से प्रश्न होंगे।
2. दूसरे खण्ड में छह प्रश्न सप्रसंग व्याख्याओं के होंगे। जिनमें से तीन व्याख्याएं करनी अनिवार्य होंगी। चार प्रश्न पाठ्य-पुस्तक से होंगे। जिनमें से दो प्रश्न करने अनिवार्य होंगे। दो प्रश्न अलंकारों के होंगे। जिनमें से एक करना अनिवार्य होगा। शेष दो प्रश्न विद्यार्थी इस खण्ड में कहीं से भी कर सकता है। कुल आठ प्रश्न करने हैं।
3. तीसरे खण्ड में दो प्रश्न कवि और कविताओं से संबंधित होंगे और दो प्रश्न हिन्दी साहित्य के इतिहास से संबंधित होंगे।

**SEMESTER-III**

**HINDI PATRAKARITA (VOCATIONAL)**

fglñh i =dkfj rk  
fglñh i =dkfj rk vkj fi M ehfM; k

l e; & 3 ?k. Vs

i wkkd% 60

क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 10 हैं।

ख) इस भाग में 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।

ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। कुल अंक 20 हैं।

fu/kkfj r i kB; dæ

क) fi M ehfM; k vkj epz k dyk

- समाचार : अर्थ और परिभाषा
- समाचार : मूल तत्त्व
- समाचार संकलन : प्रमुख स्रोत
- समाचार समितियाँ

ख) fglñh ea l ekpkj ys[ku

- आमुख,
- शीर्षकीकरण
- पृष्ठ सज्जा प्रस्तुतिकरण
- संवाददाता : कर्तव्य और गुण

ग) l ekpkj i =k ds fy, LrEHk ys[ku

- सम्पादकीय
- आलेख
- फीचर लेखन
- रिपोर्टाज
- व्यंग्य और हास्य-चित्र (कार्टून)
- कथा-लेखन

v d foHkktu

- प्रथम खंड में भाग 'क' और 'ग' में से प्रश्न पूछे जाएंगे।  $1 \times 10 = 10$
- द्वितीय भाग में भाग 'क' और 'ख' में से प्रश्न पूछे जाएंगे।  $5 \times 6 = 30$
- तृतीय भाग में भाग 'ख' और 'ग' में से प्रश्न पूछे जाएंगे।  $2 \times 10 = 20$

**SEMESTER–III**

**HINDI PATRAKARITA (VOCATIONAL)**  
fglunh i =dkfj rk

i z; ksx vkj ekf[kdh

i w kkid % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग–पुस्तिका के होंगे।
- प्रयोग पुस्तिका का आकलन और मौखिक–परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा–नियमों के अनुसार की जाएगी।

i z; ksx ds fo'k;

- हिन्दी पाठ के प्रूफ रीडिंग का अभ्यास
- विज्ञापन लेखन का अभ्यास
- हिन्दी समाचार पत्रों के विज्ञापन : संकलन
- समाचार–पत्र में भाषण का अभ्यास
- समूहवार बहस
- पावर–प्वाइंट प्रस्तुति

**SEMESTER-III**

**FUNCTIONAL HINDI (VOCATIONAL)**

**QD'kuy fglnh**

fVli .k vkj i k#i ys[ku] i fjHkkf"kd 'kCnkoyh , oa fglnh I kfgR; dk jhfrdky

I e; % 3 ?ka/s

i wkkzd % 60

- क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 10 हैं।  
ख) इस भाग में 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।  
ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। कुल अंक 20 हैं।

fu/kkfjr i kB; Øe

d½ i z kkl fud i nuke vkj dk; kly; hu vuns k fVli .kh½ dk vupkn  
(निर्धारित पदनाम और अनुदेश साथ संलग्न है)

[k½ fVli .k vkj i k#i & ys[ku % I kekl; i fjp;

- टिप्पण : अर्थ और परिभाषा
- टिप्पण : प्रकार
- टिप्पण : विशेषताएँ और आवश्यक औपचारिकताएँ
- टिप्पण : निर्माण : ध्यान देने योग्य बातें
- टिप्पण : अन्तिम रूप देना
- टिप्पण : भाषा और शैली
- प्रारूप : अर्थ और परिभाषा
- प्रारूप को अन्तिम रूप देना
- प्रकरण ब्यौरा (Case History)
- केस तैयार करना
- परिणाम तक पहुँचाना और कार्यवाही की प्रस्तावना
- आक्षरिक पर्ची (Flag of Reference)

x½ i kfjHkkf"kd 'kCnkoyh

सामान्य शब्द, अर्द्ध- पारिभाषिक भाब्द और पारिभाषिक भाब्द : अर्थ और स्वरूप  
पारिभाषिक भाब्दावली : अर्थ, परिभाषा, विशेषताएँ, महत्व

?k½ fglnh I kfgR; dk jhfrdky & i fjfLFkfr; kj i ofUk; kj vkj ukedj .k

va d foHkk t u

- प्रथम भाग में भाग 'क' से 10 प्रश्न पूछे जाएंगे। 1×10=10
- & द्वितीय भाग में भाग 'ख' में से प्रश्न पूछे जाएंगे। 5×6=30
- & तृतीय भाग में भाग 'ग' और 'घ' में से प्रश्न पूछे जाएंगे। 2×10=20

**SEMESTER–III**

**FUNCTIONAL HINDI (VOCATIONAL)**

QD'kuy fglJnh

i z; kx vksj ekf[kdh

i wkkd % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग–पुस्तिका के होंगे।
- प्रयोग पुस्तिका का आकलन और मौखिक–परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा–नियमों के अनुसार की जाएगी।

i z; kx ds fo'k; %

- टिप्पण और प्रारूप लेखन का अभ्यास
- हिन्दी समाचार–पत्रों से विज्ञापन संकलित करना
- विज्ञापनों में संगीत, आकर्षण, मनोविज्ञान, नाटकीय तत्त्व का महत्त्व
- दूरद नि विज्ञापनों से उदाहरण
- विज्ञापनों का लिप्यांतरण
- पावर–प्वाइंट प्रस्तुति

फंक्शनल हिन्दी (निर्धारित पदनाम)  
(क) प्रशासनिक पदनाम

1.	अतिरिक्त न्यायाधीश	Additional Judge
2.	अतिरिक्त परीक्षा नियंत्रक	Additional Examination Controller
3.	अधिवक्ता	Advocate
4.	अधिष्ठाता	Presiding Officer
5.	अध्यक्ष	Speaker, Chairman
6.	अधिग्रहण अधिकारी	Requisition Officer
7.	अधीक्षक	Superintendent
8.	अधीक्षक अभियंता	Superintendent Engineer
9.	अधीनस्थ अभियंता	Subordinate Engineer
10.	अनुसंधान अधिकारी	Investigation Officer
11.	अनुवादक	Translator
12.	अपर न्यायाधीश	Additional Judge
13.	अपर समाहर्ता	Additional Collector
14.	अनुमंडलाधिकारी	Sub Divisonal Officer
15.	अभिकर्ता	Agent
16.	अभियंता	Engineer
17.	अप्रवासी पदाधिकारी	Immigration Authority
18.	अवर सचिव	Under Secretary
19.	आरक्षी अधीक्षक	Police Superintendent
20.	आरक्षी निरीक्षक	Police Inspector
21.	आरक्षी उप महानिरीक्षक	Deputy Inspector General of Police
22.	आरक्षी महानिरीक्षक	Inspector General of Police
23.	आशुलिपिक	Shorthand writer
24.	आचार्य	Professor
25.	उच्चायुक्त	High Commissioner
26.	उपायुक्त	Deputy Commissioner

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27.	उत्पाद शुल्क समाहर्ता	Collector of Exise
28.	उद्घोषक	Announcer
29.	उप कुलसचिव	Deputy Registrar
30.	उपाचार्य	Reader
31.	उपमंत्री	Deputy Minister
32.	उप सभापति	Vice President
33.	उप राष्ट्रपति	Deputy Chairman
34.	उपसचिव	Deputy Secretary
35.	उपाध्यक्ष	Deputy Speaker
36.	अंचलाधिकारी	Circle Officer
37.	अंकेक्षक / लेखा परीक्षक	Auditor
38.	कर्मचारीगण	Staff
39.	कर्मशाला प्रबंधक	Work Manager
40.	कराधान अधिकारी	Taxation Officer
41.	कार्य नियोजन अधिकारी	Assignment Officer
42.	कार्य पालक अभियंता	Executive Engineer
43.	कारा-अधीक्षक	Jail-Superintendent
44.	किरानी	Clerk
45.	कुर्की अधिकारी	Attachment officer
46.	कुलपति	Vice Chancellor
47.	कुलाधिपति	Chancellor
48.	कुलानुशासक	Proctor
49.	कुलसचिव	Registrar
50.	कृषि पदाधिकारी	Agriculture Officer
51.	कृषि ऋण सलाहकार	Agricultural Credit Officer
52.	कृषि विकास पदाधिकारी	Agricultural Development Officer
53.	कृषि वैज्ञानिक	Agronomist
54.	खजांची	Treasurer

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(Faculty of Languages)

55.	खाद्य मंत्री	Minister of Food
56.	क्षेत्रीय प्रबंधक	Regional Manager
57.	चकबंदी अधिकारी	Consolidation Officer
58.	चिकित्सा अधिकारी	Medical Officer
59.	जनगणना अधिकारी	Census Officer
60.	जनसंपर्क अधिकारी	Public Relation Officer
61.	जिलाधीश	District Magistrate
62.	टंकक	Typist
63.	थानेदार	Police Station Officer
64.	थाना प्रभारी	Incharge Police Station
65.	दंडाधिकारी	Magistrate
66.	दरबान	Gate keeper
67.	दारोगा	Police sub Inspector
68.	दुभाषिया	Interpreter
69.	दुर्घटना अन्वेषण अधिकारी	Accidents Investigation Officer
70.	नक्शानवीस	Cartographer
71.	निदेशक	Director
72.	निबंधक	Registrar
73.	नियंत्रक	Controller
74.	नियंत्रक महालेखा परीक्षक	Controller & Auditor General
75.	नियंत्रक अधिकारी	Controlling Officer
76.	नियोजन पदाधिकारी	Employment Officer
77.	निर्वाचन आयुक्त	Election Commissioner
78.	न्यायमूर्ति	Justice
79.	न्यायधीश	Judge
80.	प्रखंड विकास पदाधिकारी	Block Development Officer
81.	प्रति कुलपति	Pro-Vice Chancellor
82.	प्रति लिपिक	Copyist

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83.	प्रधानमंत्री	Prime-Minister
84.	प्रधानाचार्य	Principal
85.	प्रधानाध्यापक	Headmaster
86.	प्रबंधक	Manager
87.	प्रभारी प्रधानाचार्य	Professor-In-Charge
88.	प्रशासक	Administrator
89.	प्रशाखा पदाधिकारी	Sectional Officer
90.	पर्यवेक्षक	Supervisor
91.	परामर्शी अधिकारी	Advisory Officer
92.	पणन अधिकारी	Marketing Officer
93.	परिचारिका	Nurse
94.	पशु चिकित्सा पदाधिकारी	Veterinary Officer
95.	पशु चिकित्सक	Veterinary Doctor
96.	प्राचार्य	Principal
97.	प्रादेशिक आयुक्त	Regional Commissioner
98.	प्राध्यापक	Lecturer
99.	प्राधिकृत अभिकर्ता	Authorised Agent
100.	प्राधिकारी	Authority
101.	पीठासीन अधिकारी	Presiding Officer
102.	बंदोबस्त पदाधिकारी	Settlement Officer
103.	बेतार तार चालक	Wireless Operator
104.	भर्ती अधिकारी	Recruitment Officer
105.	भंडारपाल	Store Keeper
106.	भारतीय सेना	Indian Army
107.	भुगतान प्राधिकारी	Disbursing Authority
108.	भूमाप शिक्षक	Survey Instructor
109.	भू-राजस्व पदाधिकारी	Land Revenue Officer
110.	महाकारा निरीक्षक	Inspector General of Prisons

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111.	महाधिवक्ता	Advocate General
112.	महान्यायवादी	Attorney General
113.	महानिरीक्षक	Inspector General
114.	महाप्रबंधक	Administrator General
115.	महापौर	Mayor
116.	महालेखाकार	Accountant General
117.	महावनपाल	Chief Conservator of Forests
118.	मानव विज्ञानी	Anthropologist
119.	माप-तौल निरीक्षक	Weight & Measurement Inspector
120.	माल प्रशासक	Revenue Administrator
121.	मुख्य अभियंता	Chief Engineer
122.	मुख्य आयुक्त	Chief Commissioner
123.	मुख्य न्यायाधीश	Chief Justice
124.	मुख्य निर्वाचन आयुक्त	Chief Election Commissioner
125.	मुख्यमंत्री	Chief Minister
126.	मूल्यांकन अधिकारी	Evaluation Officer
127.	रख-रखाव अधिकारी	Maintenance Officer
128.	रख-रखाव निरीक्षक	Maintenance Inspector
129.	रक्षा-मंत्री	Defence Minister
130.	राजदूत	Ambassador
131.	राजपत्रित अधिकारी	Gazetted Officer
132.	राज्यपाल	Governor
133.	राजस्व पदाधिकारी	Revenue Officer
134.	राष्ट्रपति	President
135.	रेलमंत्री	Railways Minister
136.	लिपिक-सह-टंकक	Clerk-Cum-Typist
137.	लेखाकार	Accountant General
138.	लेखा-परीक्षक	Auditor

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(Faculty of Languages)

139.	लेखा-परीक्षा-अधिकारी	Audit Officer
140.	लेखा-महापरीक्षक	Auditor General
141.	वन-पदाधिकारी	Forest Officer
142.	वन-रोपण-पदाधिकारी	Afforestation Officer
143.	वरिष्ठ व्याख्याता	Senior Lecturer
144.	व्याख्याता	Lecturer
145.	वाणिज्य मंत्री	Commerce Minister
146.	विक्रय कर पदाधिकारी	Sales Tax Officer
147.	विकास पदाधिकारी	Development Officer
148.	वित्त पदाधिकारी	Finance Officer
149.	वित्तीय परामर्शी	Financial Advisor
150.	वित्त मंत्री	Finance Minister
151.	विदेश मंत्री	Minister Of External Affairs
152.	विधान पार्षद	Member of Legislative Council
153.	विधायक	Member of Legislative Assembly
154.	विधिमंत्री	Minister of Law
155.	विधि सलाहकार	Legal Advisor
156.	विनिमय नियंत्रक	Exchange Controller
157.	विमानन सलाहकार	Aviation Advisor
158.	विश्लेषक सहायक	Analytical Assistant
159.	विशेष कार्याधिकारी	Officer on Special duty
160.	वैद्युतिक	Electrician
161.	शल्य चिकित्सक	Surgeon
162.	शपथ आयुक्त	Oath Commissioner
163.	श्रम पदाधिकारी	Labour Officer
164.	श्रम मंत्री	Labour Minister
165.	शाखा प्रबंधक	Branch Manager
166.	शिक्षा पदाधिकारी	Education Officer

167.	शोध पदाधिकारी	Research Officer
168.	संचार मंत्री	Minister of Communication
169.	सचिव	Secretary
170.	संपदा पदाधिकारी	Estate Officer
171.	सत्यापन अधिकारी	Attesting Officer
172.	सत्र न्यायाधीश	Session Judge
173.	समादेशक	Commandent
174.	समाहर्ता	Collector
175.	समुद्री अधिकारी	Marine Officer
176.	सर्वेक्षक	Serveyour
177.	सहायक	Assistant
178.	स्थानीय प्राधिकारी	Local Authority
179.	संकेत लिपिक	Stenographer
180.	संग्रहालायाध्यक्ष	Curator
181.	संग्रहालय संरक्षक	Custodian of Museum
182.	संयुक्त सचिव	Joint Secretary
183.	संयुक्त निदेशक	Joint Director
184.	संयोजक निदेशक	Convenor
185.	संरक्षक	Patron, Custodian
186.	संशोधक अधिकारी	Revising Officer
187.	सारणीयक	Tabulator
188.	संस्कृति संपर्क अधिकारी	Cultural Relation Officer
189.	संस्कृति मंत्री	Minister of Culture
190.	सांसद	Member of Parliament
191.	सीमा पुलिस निरीक्षक	Boarder Police Inspector
192.	सीमा-शुल्क-समाहर्ता	Collector of Customs
193.	सैनिक अधिकारी	Military Officer

फंक्शनल हिन्दी (निर्धारित अनुदेश)  
(ख) कार्यालयीन अनुदेश

1.	Above mentioned	उपरलिखित
2.	According to	के अनुसार
3.	Adjourn Sine die	अनिश्चित काल के लिए
4.	Acting in good faith	सद्भाव से कार्य करते हुए
5.	Action may be taken as proposed	यथा प्रस्तावित कार्यवाही की जाए
6.	Acts of Commission & Omission	कृताकृत
7.	After adequate consideration	समुचित विचार के बाद
8.	Against public interest	लोकहित के विरुद्ध
9.	Aid and advice	सहायता और सलाह
10.	A Line of note is placed below	संक्षिप्त नोट नीचे प्रस्तुत है
11.	An interim	अंतरिम, अस्थायी
12.	Approved as proposed	यथाप्रस्ताव अनुमोदित
13.	As above	जैसा उपर दिया गया है
14.	As desired	इच्छानुसार, आज्ञानुसार
15.	As directed	निदेशानुसार
16.	As far as possible	यथासंभव
17.	As a last resort	अंतिम उपाय के रूप में
18.	As a matter of fact	यथार्थ/वस्तुतः
19.	As may be necessary	आवश्यकतानुसार
20.	As per details below	निम्नलिखित के अनुसार
21.	As regards	के संबंध में/ जहां तक संभव हो सके
22.	As the case may be	जैसी स्थिति हो
23.	Attention is invited to	की ओर ध्यान आकर्षित किया जाता है
24.	Background of the case	मामले की पृष्ठभूमि
25.	Beg to state	निवेदन है

26.	Benefit of doubt	संदेह लाभ
27.	Boarding and lodging	आवास और भोजन
28.	By all means	अवश्यमेव, निस्संदेह
29.	By any means	किसी प्रकार से
30.	By order	के आदेश से
31.	Case has been closed	मामला समाप्त
32.	Come into force	लागू होना
33.	Deemed to be	समझा जाए
34.	Detrimental in interest of	के हित में हानिकारक
35.	Do the needful	आवश्यक कार्यवाई- हेतु
36.	Duly filled in	विधिवत् ,भरा हुआ
37.	Duly verified	विधिवत् सत्यापित
38.	Early reply is solicited	शीघ्र उत्तर की प्रार्थना है
39.	Eligibility is certified	पात्रता प्रमाणित
40.	Errors and omissions	भूल चूक
41.	Expedite action	कार्यवाही शीघ्र करें
42.	For early compliance	शीघ्र अनुपालन करें
43.	For favour of necessary action	आवश्यक कार्यवाई हेतु
44.	For immediate action	त्वरित कार्यवाई हेतु
45.	For or against	पक्ष और विपक्ष में
46.	For perusal	ध्यान से अध्ययनार्थ
47.	For the present	फिलहाल
48.	From pre-page	पिछले पृष्ठ से
49.	furnish details	विवरण प्रस्तुत करें
50.	Further report is awaited	अगला प्रतिवेदन प्रतीक्षित
51.	Give necessary facilities	आवश्यक सुविधाएं दें
52.	Hard and fast rules	पक्के नियम
53.	Have the honour to say	सादर निवेदन है

54.	In camera	बंद कैमरे में
55.	In lump sum	एकमुश्त, एक बार में
56.	In due course	यथाविधि
57.	In reply to	के उत्तर में
58.	Inter alia	अन्य बातों के साथ-साथ
59.	Inter se	परस्पर / आपस में
60.	In toto	पूरी तरह, सम्पूर्णतः
61.	In view of	को ध्यान में रख कर / की दृष्टि से
62.	Keep in abeyance	प्रस्थगित रखा जाए
63.	Kindly Acknowledge receipt	कृपया पावती दें
64.	Kindly confirm	कृपया पुष्टि करें
65.	Kindly consider	कृपया विचार करें
66.	May be cancelled	निरस्त किया जाए
67.	May be considered	विचार किया जाए
68.	Matter of facts	तथ्यतः / तथ्य की बात
69.	Necessary action may be taken	आवश्यक कार्यवाई करें
70.	Note Beno (N.B.)	विशेष ध्यान दें
71.	Not Satisfactory	असंतोषजनक
72.	Okey (OK)	सब ठीक, अच्छा
73.	On behalf of	की ओर से
74.	Out to day	आज ही
75.	Put up	प्रस्तुत करें
76.	Reference to above	उपरिनिर्दिष्ट
77.	Self explanatory	स्वतः स्पष्ट
78.	So far as possible	यथा संभव
79.	So long as	यहां तक कि
80.	Status quo	यथा पूर्व स्थिति
81.	Then and there	तत्काल वही

82.	This is to certify	प्रमाणित किया जाता है
83.	Through over sight	नजर चूकने से, भूल जाने से
84.	Uncalled for	अनामंत्रित, अनाहूत, अनुचित
85.	Under mentioned	निमनलिखित
86.	Until further order	अगले आदेश तक
87.	Up-to-date	अद्यतन
88.	Up-to the mark	स्तरीय
89.	Verified and found correct	सत्यापित किया और सही पाया
90.	Without fail	अवश्यमेव
91.	With reference to	के संदर्भ में
92.	With retrospective effect	प्रभाव–सहित
93.	Yours faithfully	भवदीय

**SEMESTER–III**  
**PHYSICAL EDUCATION**  
**(THEORY)**

**Time: 3 Hours**

**Maximum Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Note: Instructions for the Paper Setters / Examiners. Each question paper may consist of three sections as follows:**

**Section–A: The candidates are required to attempt all the six questions. Each question carrying two marks. 6x2=12 Marks**

**Section–B: The candidates are required to attempt seven out of twelve questions. Each question carrying four marks. 7x4=28 Marks**

**Section–C: The candidates are required to attempt two out of four questions. Each question carrying ten marks. 10x2=20 Marks**

**Part-A**

1. Meaning of Learning, Nature of Skill Learning and laws of Learning.
2. Learning Curve.
3. Motivation in Physical Education.
4. Play meaning and theories.
5. Psychological factors effecting sports performance i.e. stress tension, anxiety, aggression.
6. Psychological characteristics of the adolescent in sports situations.

**Part-B**

1. Transfer of training, its application in sports situations.
2. Growth and development during childhood;
  - i) Physical
  - ii) Mental
  - iii) Emotional
  - iv) Inter-personal social development.
3. Sports and Economy.
4. Causes of poor performance of Sports in India.
5. Sports and Socialization-integration through sports (National & International)
6. Sports, Politics and their relationship.

**SEMESTER–III  
PHYSICAL EDUCATION**

**(PRACTICAL)**

**Marks: 40**

Division of Marks: Athletics (12) + Games (12) +Ground Markings (3+3),  
Practical Note Book (5), Viva-Voce (5)

- **Athletics Performance** ----- 200M, Discuss Throw for Boys  
200M, Discuss Throw for Girls
- **Games (Boys & Girls) ---- Fundamental, Rules, Performance**  
Football, Yoga

**Books Recommended:**

1. Singh, Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi, 2000.
2. Tandan, D.K. et.al.: Scientific basis of Physical Education and Sports, Friends Publication, New Delhi, 2001.
3. Singh, Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang, G.S.: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University, Patiala, 2000.
5. Kang, G.S. and Deol, N.S.: An Introduction to Health and Physical Education, 21st Century, Patiala, 2008.

# SYLLABUS

FOR

## B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)

(Semester-IV)

Examinations: 2018-19



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# GURU NANAK DEV UNIVERSITY AMRITSAR

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**SEMESTER-IV  
POLITICAL SCIENCE**

**INDIAN POLITICAL SYSTEM**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks..

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**Unit-I**

1. **Nature of Party System in India:** A Critical Evaluation.
2. National Political Parties (**Indian National Congress** – BJP, CPI, CPI (M), their organisation, Ideologies and electoral performance.
3. **Regional Political Parties (SAD, and DMK,):** Their Organisation, Ideologies and Electoral Performance.

**Unit-II**

1. **The Election Commission:** Powers, functions, and Electoral Reforms.
2. Voting Behaviour.
3. **Political Participation:** Determinants and levels of Political Participation.

**Unit-III**

1. Caste and Religion in Indian Politics.
2. Regionalism and Indian politics.
3. Emerging trends in Indian Politics.

**Unit-IV**

1. Basic principles and determinants of Indian Foreign Policy.
2. Policy of Non-alignment and its relevance in contemporary world.

**Books Recommended:**

1. G. Austin, *The Indian Constitution: Corner Stone of a Nation*, Oxford, Oxford University Press, 1966.
2. G. Austin, *Working of a Democratic Constitution: The Indian Experience*, Oxford University Press, 2000, Delhi.
3. D.D. Basu, *An Introduction to the Constitution of India*, New Delhi, Prentice Hall, 2008.
4. C.P. Bambhari, *The Indian State Fifty Years*, New Delhi, Sipra, 1997.
5. P. Brass, *Politics of India Since Independence*, Hyderabad, Orient Longman, 1990.
6. P. Brass, *Caste, Faction and Parties in Indian Politics*, Vol. II, Delhi, Chanakya Publications 1984-1985.
7. P. Brass, *Ethnic Groups and the State*, London, Croom, Helm, 1995.
8. P. Brass, *Language, Religion and Politics in North Indian*, London, Cambridge University Press, 1974.
9. B.L. Fadia, *State Politics in India*, Vol. II, New Delhi, Radiant Publishers, 1984.
10. F.R. Frankel, *India's Political Economy 1947-1977, The Gradual Revolution*, Oxford, Oxford University Press, 1978.
11. R. Kothari, *State against Democracy: In Search of Human Governance*, Delhi, Ajanta, 1988.
12. R. Kothari, *Politics in India*, New Delhi, Orient Longman, 1970.
13. R. Kothari, *Party System and Election Studies*, Bombay, Asia Publishing House, 1967.
14. I. Narain (ed.), *State Politics in India*, Meerut, Meenakshi Parkashan, 1967.
15. M.V. Pylee, *Constitutional Government in India*, Bombay, Asia Publishing House, 1977.
16. M.V. Pylee, *An Introduction to the Consutitution of India*, New Delhi, Vikas, 1998.
17. S.P. Verma and C.P. Bhambari (ed.), *Election and Political Consciousness in India*, Meerut, Meenakshi Parkashan, 1967.
18. B.L. Fadia, *Indian Government and Politics*, Agra, Sahitya Bhavan Publications, 2008.
19. A.S. Narang, *Indian Government and Politics*, New Delhi, Gitanjali, 1999.
20. *Indian Journal of Political Sciences*
21. *Punjab Journal of Politics*
22. Seminar
23. Lloyd I. Rudolph and Susanne Hoeba Rudolph, *Explaining Indian Democracy: A Fifty-Year Perspective, 1956-2006*, Vol. I, II, III, New Delhi, OUP, 2008.
24. Francine Frankel, *India's Political Economy: 1947-2004*, New Delhi, OUP, 2006.
25. Zoya Hasan , *Parties and Party Politics in India*, Sage, 2012
26. M. Laxmi Kanth, *Indian Polity*, Tata Mcgraw, 2012
27. V. Krishna Ananth, *India Since Independence: Making Sense of Politics*, Pearson, 2011.
28. Bipin Chandra, *India since Independence*, Benjamin, 2007.

**SEMESTER-IV  
HISTORY**

**HISTORY OF THE PUNJAB (AD 1469-1799)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setter:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

1. **Sources:** Geographical and Physical features, Historical literature in Persian and Punjabi; Religious literature; Administrative records and documents; European travellers' accounts, Non-literary sources: numismatics and paintings; **Socio-Religious condition of the Punjab around 1500 A.D.:** The Sunnis; the Shias; the Sufis, the Brahmans; the Jogis; the Vaishnava bhakti and the saints.
2. **Foundation of Sikh Panth: Guru Nanak Dev and his Teachings:** Early life, Conception of God, Importance of the Guru, Insistance on right conduct and earnest profession; Institution of community kitchen (Langer) and Congregational worship (sangat), Succession to Guruship.

**UNIT-II**

3. **Development of the Sikh Panth: Guru Angad Dev to Guru Arjan Dev:** Increasing number of sangats: Sikh ceremonies; the Manji and Masand system, The founding of the sacred places, The Harimandir. Compilation of the Adi Granth.
4. **Transformation of the Sikh Panth: Guru Hargobind to Guru Tegh Bahadur:** Martyrdom of Guru Arjan Dev and Guru Hargobind's response; Armed conflict with the state; Circumstances leading to the accession and martyrdom of Guru Tegh Bahadur.

### UNIT-III

5. **Creation of Khalsa:** Meaning; Circumstances leading to the creation of the Khalsa (1699); New Social order; Conflict with the Hill chiefs and Mughal administrators; Legacy.
6. **Banda Bahadur:** Early life of Banda Bahadur and his meeting with Guru Gobind Singh; His political activities upto the conquest of Sarhind; Establishment of an independent rule; Imperial campaign against Banda.

### UNIT-IV

7. **Political Struggle (1716-48):** Position of the Sikhs; Repression and conciliation by the Mughal governors, Abdus Samad Khan and Zakaria Khan (1716-1745), Ghallughara, Sikh-Afghan struggle (1752-65); Occupation of Lahore, the striking of the coin; Causes of Sikh success against the Mughals and Afghans; **Leading Sardars and Territories:** Nawab Kapur Singh; Jassa Singh Ahluwalia; Bhangis; Jassa Singh Ramgarhia; Charat Singh and Mahan Singh; Jai Singh Kanhaya; Ala Singh.
8. **Political Organisations of the Sikhs in the 18<sup>th</sup> Century:** Rakhi; Dal Khalsa; Gurmata, Misl. Emergence of new rulers and their military resources; Administrative arrangements; Land revenue; Administrative of Justice.

### Suggested Reading:

1. Grewal J.S., *From Guru Nanak to Maharaja Ranjit Singh*, G.N.D. University, Amritsar, 1982.
2. \_\_\_\_\_, *The New Cambridge History of India: The Sikhs of the Punjab*, CUP, New Delhi, 1990.
3. \_\_\_\_\_, *Guru Nanak in History*, Panjab University, Chandigarh, 1969.
4. Khushwant Singh, *A History of the Sikhs, Vol. I (1469-1839)*, OUP, Delhi, 1977.
5. McLeod, W.H., *Guru Nanak and the Sikh Religion*, OUP, Delhi, 1968.
6. Teja Singh and Ganda Singh, *A Short History of the Sikhs Vol. (1469-1765)*, Patiala 1983
7. Banerjee, I.B. *Evolution of the Khalsa, 2 Vols.*, A. Mukherjee & Co., Calcutta, 1979.
8. Grewal, J.S. and S.S.Bal, *Guru Gobind Singh*, Panjab University, Chandigarh, 1987.
9. \_\_\_\_\_, and Indu Banga, *The Khalsa Over 300 Years*, Manohar, New Delhi, 1999.
10. Harbans Singh (ed), *The Encyclopedia of Sikhism, 4 Vols.*, Punjabi University, Patiala 1992.
11. McLeod, W.H. *Evolution of the Sikh Community*, OUP, Delhi, 1970.
12. \_\_\_\_\_, *Historical Dictionary of Sikhism*, OUP, New Delhi, 2002.

**SEMESTER-IV**  
**JOURNALISM AND MASS COMMUNICATION**

**MASS MEDIA AND PHOTOGRAPHY**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section-A** shall consist of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks. **10x2=20**

**Section-B** shall consist of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks. **8x5=40**

**Section-C** shall consist of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks. **10x2=20**

**Traditional and Folk Media:** Characteristics, Role in the age of Electronic Media.

**Radio:** Characteristics & Principles of Broadcasting, Popular Radio Genres, Code of Broadcasting.

**Television:** Characteristics, Objectives of the medium, Educational TV, Satellite Invasion and Cable Television, Internet.

**Photography:** Introduction to Photography, Aperture setting, Shutter speed

Types of cameras

Types of lens

Qualities of a good photograph: framing, Lighting control, depth of field, rule of thirds

Types of shots and angles

Photojournalism: Qualities of a good photo journalist, ethics of photo journalism

Photo editing techniques, photo features

**Books Recommended:-**

- Handbook of Journalism & Mass Communication: Virbala Aggarwal, 2004, Concept Publishing Co., New Delhi.
- Photography: Barbara Upton, 1981, Little Brown & Co., Boston.

**(PRACTICAL)**

**(20 Marks)**

Preparing an album of minimum 20 photographs on the given topics.

**SEMESTER-IV**  
**MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)**  
**INTRODUCTION TO MEDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section-A** shall consist of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks. **10x2=20**

**Section-B** shall consist of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks. **8x5=40**

**Section-C** shall consist of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks. **10x2=20**

**Role & Impact of Media in Different Socio-Economic & Political Systems/Freedom of Press  
Press Laws in India**

- \* Defamation
- \* Official Secrets Act, 1923
- \* Concept of Court Act, 1971
- \* Press & Registration of Books Act, 1867
- \* Public Libraries Act

**Advertising**

- \* Meaning & Concept
- \* Role & Importance
- \* Types of Ads
- \* Advertising Agency
- \* Advertising Budget
- \* Advertising Designing & Layout

**Public Relations**

- \* Meaning & Concept
- \* Role & Importance
- \* Qualities to Good PRO
- \* Tools/Technique of PR
- \* PR in Government, Public & Private Sector

**Difference between PR & Advertising Propaganda, Publicity & Public Opinion**

**Cinematograph Act, censorship in India**

**SEMESTER-IV**  
**MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)**  
**INTRODUCTION TO MEDIA**  
**(PRACTICAL)**

**Marks: 20**

Making of an ad (Print & Audio-Visual)  
Making of Press note/ Press releases

**Books Recommended:**

1. Advertising, Santokki, Kalyani Publishers, 1994.
2. Handbook of Public Relation, D.S. Mehta, Allied Publishers Limited, 1998.
3. Press Laws, D.D. Basu, Prentice-Hall of India Pvt. Ltd., 1996.

**SEMESTER-IV  
SOCIOLOGY**

**SOCIAL CHANGE IN INDIA**

**Time: 3 Hours**

**Marks: 100**

**Instructions for the Paper Setters:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT I**

a) **Social Change:** Meaning and Forms: Evolution, Revolution, Progress and Development.

**UNIT II**

b) **Factors of Social Change:** Demographic, Education, Industrialization, Legislation and Urbanization.

**UNIT-III**

a) **Processes of Change:** Sanskritization, Westernization, Modernization and Secularization, Globalization.

**UNIT IV**

b) **Challenges of Social Change:** Dowry, Domestic Violence, Divorce, Problems of elderly, Female foeticide.

**Books Recommended:**

1. Ahuja, Ram: *Social Problems*, Rawat Publishers, New Delhi, 1992.
2. Abraham, M. Francis: *Contemporary Sociology*, Oxford University, New Delhi, 2006.
3. Gill, S.S.: *The Pathology of Corruption*, Harper Collin Publishers, New Delhi, 1998.
4. Kapila, S: *A Textbook of Sociology*, Part-I & II, New Academic House, Jalandhar, 1990-91.
5. Kuppaswamy, B.: *Social Change in India*, Vikas, Delhi, 1975.
6. Maclver, R.M. & Page, Charles H.: *Society, An Introductory Analysis*, Macmillan, London, 1974.
7. Srinivas, M.N.: *Social Change in Modern India*, Orient Longman, Bombay, 1972.
8. Macionis, John.J and Ken Plumer. 2014, *Sociology: A Global Introduction*. London: Pearson.

**SEMESTER-IV  
PSYCHOLOGY**

**EXPERIMENTAL PSYCHOLOGY-II  
(THEORY)**

**Time: 3 Hours**  
**Pass Marks: 35% of the subject**  
**(Theory and Practical Separately)**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section-A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 1½ marks; total weightage of the section being 15 marks.

**Section-B:** It will consist of short answer type questions with answers to each question up to two pages in length. Six questions will be set by the examiner and four will be attempted by the candidates. Each question will carry 9 marks; total weightage of the section being 36 marks.

**Section-C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 12 marks, total weightage of the section being 24 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Note:**

1. The use of Non-Programmable calculators and Statistical Tables are allowed in the examination.
2. Only one numerical question is to be set either of nine marks (from Section-B) or of twelve marks (from Section-C).

**Psychophysics:** Concept of Psychophysics, Physical V/S. Psychological continua, Weber Fechner law, Concept of Absolute and Differential Thresholds. Determination of AL and DL by Methods of limits, Method of Constant Stimuli & Method of Average Error.

**Learning:** Classical and Operant conditioning, Basic Processes; Extinction, Spontaneous recovery, Generalization and Discrimination. Factors influencing classical and instrumental conditioning. Concept of Reinforcement, Types of reinforcement and Reinforcement Schedules. Transfer of Training and skill learning.

**Mneumonics:** An Introduction to the concept of mneumonics, Constructive memory, Implicit memory & Eyewitness memory. Methods of Retention.

**Forgetting:** Nature, Factors Affecting forgetting, Theories of forgetting, Decay, Interference retrieval failure.

**Thinking and Problem Solving:** Nature and Types of Thinking. Nature of Problem Solving, Stages of Problem solving, Factors, Role of set in problem solving.

**Concept Formation:** Nature, Types and Processes.

**Reasoning:** Nature and types of reasoning.

**Correlation:** Types of Correlation, Nature and characteristics. Rank order and product moment methods (Numericals for Individual data).

**References:**

1. D'Amato, M.R.: Experimental Psychology: Methodology Psychophysics and Learning, McGraw Hill Company, New Delhi, 1970.
2. Postman, L and Egan, J.P.: Experimental, Psychology, Harper and Row, New York.
3. Woodworth, R.S. and Schlosberg, H.: Experimental Psychology, New York; Holt, Rinehart and Winston Inc. 1954.
4. Galotti, K.M. (2007): Cognitive Psychology in and Out of the Laboratory, Thomson Wads Worth.

**SEMESTER-IV  
PSYCHOLOGY**

**(PRACTICAL)**

**Marks: 25**

**Instructions for the Practical Examination:**

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External Examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

**Five Practical have to be performed out of the following:**

1. Measurement of Differential Threshold.
2. Recall Vs Recognition Method
3. Retroactive inhibition.
4. Problem-Solving
5. Concept formation.
6. Transfer of Training

**SEMESTER–IV**  
**DEFENCE AND STRATEGIC STUDIES**

**EVOLUTION OF WARFARE IN INDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section–A:** The examiner shall set 10 short answer type questions from the entire syllabus and the candidates will attempt 7 questions carrying 4 marks each. Answer to each question shall not exceed half of the page. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions from the entire syllabus – two from each unit. The candidate shall attempt four questions, one from each Unit. Each question shall carry 13 marks. The total weightage of this Unit shall be 52 marks.

**Note:** *Practicals only meant for the regular students. For the private students the two papers shall be of 100 marks each. For the private students, each question in Section B will be of 18 marks.*

**UNIT–I**

**1. Macedonian and Indian Military Organisation and techniques of fighting with particular reference to the Battle of Hydaspes, 326 B.C.:**

(a) Macedonian and Indian Military organisations.

(b) Battle of Hydaspes.

i) Introduction

ii) Opposing forces and their deployment.

iii) Description of the battle.

iv) Analysis (strategy, tactics, application of Principles of war and causes of defeat and victory).

**2. Kautilya's Philosophy of War**

i. Diplomacy and Strategy.

ii. The Institution of Spies.

iii. Army Organisation.

iv. Mode of Warfare.

v. Forts: Type & role.

### UNIT-II

3. **Military organizations and techniques of fighting of Rajputs and Turks with particular reference to the Battle of Terrain 1192 A.D.:**
  - (a) Military organisations of Rajputs and Turks.
  - (b) Battle of Tarrain.
    - i) Introduction
    - ii) Opposing forces and their deployment
    - iii) Description of the battle
    - iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).
4. **Military organizations and techniques of fighting of Mughals and Afghans with particular reference to the First Battle of Panipat 1526 AD.:**
  - (a) Military organisations of Mughals and Afghans.
  - (b) First Battle of Panipat.
    - i) Introduction
    - ii) Opposing forces and their deployment
    - iii) Description of the battle
    - iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory)

### UNIT-III

5. **Fighting techniques of Southern Muslim Sultans with particular reference to the Battle of Talikota, 1568 A.D.**
  - i) Introduction
  - ii) Opposing forces and their deployment
  - iii) Description of the battle
  - iv) Analysis (strategy, tactics, application of principles of War and causes of defeat and victory)
6. **Military Organisations of Marathas under Shivaji and his techniques of fighting :**
  - i) Shivaji as a military leader.
  - ii) Higher Defence Organisation.
  - iii) Military Organisation.
  - iv) Techniques of Fighting.

### UNIT-IV

7. **Military organisation of Sikh Army and its fighting techniques under Maharaja Ranjit Singh :**
  - i) Maharaja Ranjit Singh as a Military leader.
  - ii) Growth and development of the Sikh Army from (1799-1849).
  - iii) Organisation of the Army.
  - iv) Fighting techniques of the Sikh Army strategies and tactics.

**8. Anglo-Maratha and Anglo-Sikh Warfare with particular reference to the Battles of Assaye, 1803 A.D. and Chillianwala, 1849 A.D.:**

(a) Battle of Assaye

- i) Introduction
- ii) Opposing forces and their deployment.
- iii) Description of the battle.
- iv) Analysis (strategy, tactics application of principles of War and causes of defeat and victory).

(b) Battle of Chillianwala -

- i) Introduction
- ii) Opposing forces and their deployment.
- iii) Description of the battle.
- iv) Analysis (strategy, tactics application of principles of War and causes of defeat and victory).

**Suggested Readings:**

- |                          |  |
|--------------------------|--|
| 1. Alfred, David (1953)  | Indian Art of War, Atma Ram, Delhi.                                  |
| 2. Bajwa F.S. (1964)     | Military System of the Sikhs, Moti Lal, Banarsi Dass, Delhi.         |
| 3. Bruce, George (1969)  | Six Battles of India, Rupa & Company, Calcutta.                      |
| 4. Das, ST (1969)        | Indian Military- Its History and Development, Sagar, New Delhi.      |
| 5. Fuller, J.F.C.(1958)  | Generalship of Alexander The Great, Natraj Publishes, Dehradun       |
| 6. Kangle, R.P.(1963)    | Kautilya`s Arth Shastra.University of Bombay, Mumbai.                |
| 7. Majumdar, B.K.(1960)  | Military System in Ancient India, Firma K.L. Mukhopadhyoy, Calcutta. |
| 8. Majumdar B.N. (1963)  | Study of Indian Military History. Army Educational Store, New Delhi. |
| 9. Majumdar B.N.(1965)   | Military System of the Sikhs, Army Educational Store, New Delhi.     |
| 10. Malleson (1969)      | Decisive, Battles of India, Sagar, New Delhi.                        |
| 11. Sarkar, J.N (1960)   | Military History of India, M.C. Sarkar, Calcutta.                    |
| 12. Sen, S.N.(1977)      | Military System of Marathas, K.P.Bagchi Publishers, Calcutta.        |
| 13. Sharma Gautam (1966) | Indian Army Through the Ages, Allied Publishers, Bombay.             |

**SEMESTER-IV**  
**DEFENCE AND STRATEGIC STUDIES**

**EVOLUTION OF WARFARE IN INDIA**  
**(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 20**

**Written: 10**

**Discussion: 05**

**Record & Viva-Voce: 05**

**Instructions for the Examiners:**

1. Examiners are required to set a question paper containing 10 marks of 1 hour duration in which he is supposed to set at least 3 questions of 5 marks each and students are required to attempt any two.
2. In the written practical Examination, choice in questions may be given to the students. The question paper is to be set at least half an hour before the examination.
3. Each student should be asked to deliver a talk/make short presentation for 5–10 minutes on any of the given topics.
4. Examiners should devote reasonable time for Viva–Voce Test and assess the practical record of a student.
5. For practical paper one group of Students will not comprise of more than 20 students at a time.

**A. WRITTEN TEST**

**Marks: 10**

- (i) Bearing: Definition & Types
- (ii) Interconversion of Bearing in detail.
- (iii) Service protactor: Its type and uses.

**B. TOPICS FOR DISCUSSION/PRESENTATION**

**Marks: 05**

- (i) Strategy & Tactics of Alexander the Great in the Battle of Hydaspes.
- (ii) Impact of Industrial Revolution on Land Warfare
- (iii) Military Leadership of Maharaja Ranjit Singh.
- (iv) Principles of Napoleonic Warfare.

**C. RECORD AND VIVA-VOCE**

**Marks: 05**

**SEMESTER-IV  
GEOGRAPHY**

**GEOGRAPHY OF PUNJAB  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 70  
Practical Marks: 30**

**Note: Instructions for the Paper Setters:**

1. A compulsory question containing 15 short answer type questions will be set covering the whole syllabus. The students will attempt any 10 parts in about 40-50 words each. Each part will carry 3 Marks **(Total 30 Marks)**
2. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1. Each question will carry 10 Marks. **(Total 40 Marks)**
3. Special credit will be given to appropriate use of maps and diagrams.
4. Stencil outline maps are allowed.

**Objective:**

1. To understand the regional setting of Punjab State in detail through physical and political maps.
2. To examine the pattern of select population characteristics.
3. To study the distribution of major crops, industries and transport links in the state.
4. To understand the intra regional variations in the select aspects.

**UNIT-I**

Location, Evolution of the State, Administrative Divisions. Relief, Drainage, Climate, Soils, Vegetation, Mineral and Power Resources.

**UNIT-II**

**Population:** Numbers, distribution, density, growth (birth rate, death rate and migration), religious composition, urbanization.

**Agriculture:** Main characteristics including green revolution, irrigation, main crops (wheat, rice, cotton, sugarcane) and their distribution, agricultural marketing, livestock and dairying, problems of agriculture.

**UNIT-III**

**Industries:** Main characteristics, distribution pattern of major industries (cotton textile, sugar, hosiery, engineering) industrial concentration, problems of industrialization.

**Transport and Trade:** Road, rail and their transport; Inter-State trade.

#### UNIT-IV

Regional Geography of Majha, Doaba, Malwa and major characteristics of each region.

#### **Books Recommended:**

#### **Essential Readings:**

1. Mankoo, Darshan S.: Geography of Punjab, Kalyani Publication, Ludhiana, **2009**.
2. Mavi, H.S. & Tiwana, D.S.: Geography of Punjab, National Book Trust, Delhi, 1993.
3. Singh, Malkit: Geography of Punjab, Reshmeet. Publications, Jalandhar, **2010**.

#### **Further Readings:**

1. Census of India: Punjab: Census Atlas, Vol. XIII, No. IX, 1996.
2. Deshpande, C.D.: India: A Regional Interpretation, Northern Book Centre, New Delhi, 1992.
3. Gosal G.S. & Gopal Krishan: Regional Disparities in Levels of Socio-Economic Development in Punjab, Vishal Publications, Kurukshetra, 1984.
4. Gupta, S.P.: The Punjab: An Overview, Ess Pee Publications, Chandigarh, 2005.
5. Singh, Pritam: Punjab Economy: The Emerging Pattern, Enkay Publishers, New Delhi, 1995.
6. Singh, R.L., (Ed.): India: A Regional Geography, National Geographical Society of India, 1990, reprint.
7. Spate O.H.K. & Learmonth, A.T.A.: India and Pakistan: A General and Regional Geography. Methuen, London, Latest Edition.

**SEMESTER-IV  
GEOGRAPHY**

**MAPWORK AND PRACTICAL GEOGRAPHY  
(PRACTICAL)**

**Written Paper of 3 Hours: 15 Marks**  
**Practical Record (File): 08 Marks**  
**Viva: 07 Marks**  
**Total Marks: 30**

**Time: 3 Hours**

**Objective:**

1. To apprise the students with symbolization of different types of geographical data and depiction of various spatial data.
2. To provide training in application of various graphical methods of depicting geographic data.
3. To train the students to interpret the topographical sheets at different scales course Content.

**Course Contents:**

**UNIT-I**

**Construction and Significance of the following:**

- a) Columnar Diagrams: Simple, superimposed, composite.
- b) Graphs: Line graphs, climograph, hythergraph, erograph, wind rose.

**UNIT-II**

**Topographical Maps:** Significance of topographical maps in geographical studies. Study and Interpretation of topographical Maps of India (two sheets: one representing a hilly/mountainous tract and the other a plain tract).

Basic Introduction to Remote Sensing and GIS (Geographical Information System).

**Note:**

1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 units. Eight questions will be set out of the whole syllabus, four from each unit. The students will be required to attempt two questions from each unit. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number 1. (Total 12 marks)
3. Evaluation of Practical Record will be done at the time of viva-voice examination.

4. A minimum of 16 sheet are to be prepared by each student.
5. In case, the candidate has applied for improvement, he/she should be required to make a fresh practical note book.
6. For practical classes, the number of students in one group shall not exceed fifteen.

**Books Recommended:**

**Essential Readings:**

1. Khullar, D.R.: Essentials of Practical Geography, New Academic Publishing Co., Mai Hiran Gate, Jalandhar, 2016.
2. Robinson, A.H.: Elements of Cartography, John Wiley, New York, 1995.
3. Singh, Gopal: Mapwork & Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi, 1995.
4. Singh, R.L. & Singh Raghunandan: Mapwork and Practical Geography, Central Book Depot, Allahabad, 1993.

**Further Readings:**

1. Birch, T.W.: Maps Topographical & Statistical; Clarendon Press, Oxford, 1949.
2. Garnett, A.: Geographical Interpretation of Topographical Maps, George Harrap & Co., London, 1953.
3. Monkhosue, F.J.: Maps and Diagrams, Methuen & Co., London, 1994 (reprint).

**SEMESTER-IV**  
**PUBLIC ADMINISTRATION**  
**FINANCIAL ADMINISTRATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Note:- Instructions for the Paper Setters / Examiners:**  
**Each Question Paper may consist of two sections as follows:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

**Introduction**

Nature and Scope of Financial Administration  
Objectives and Principles of Financial Administration.  
Union-State Financial Relations, Finance Commission, Planning Commission.

**UNIT-II**

**Budgetary System**

Meaning, Purpose and Principles of Budget—Budget as a tool of Administration.  
Preparation of Budget.  
Enactment of Budget.  
Execution of Budget.

**UNIT-III**

Performance Budgeting.  
Zero-Base Budgeting.  
Legislative Control over Finance.  
Role of Financial Committees: Public Accounts Committee, Estimates Committee; Committee on Public Undertakings.

**UNIT-IV**

Organization of Ministry of Finance; Department of Finance in Punjab; Audit: Meaning and Significance; Comptroller and Auditor General.

**Suggested Readings:**

1. Goel S.L., Financial Administration, Deep and Deep Publication, New Delhi, 2002.
2. Government of India, Administrative Reforms Commission, Report of Financial Account and Audit, New Delhi, 1967.
3. Government of India, Administrative Reforms Commission, Report of Central State Relations, New Delhi, 1967.
4. Lall G.S., Financial Administration in India, H.P.J. Kapoor Delhi, 1969.
5. Puri K.K. and G.S. Barara, Personnel and Financial Administration, Bharat Prakashan, Jalandhar, 2003.
6. Sahib Singh and Swinder Singh, Public Personnel and Financial Administration, New Academic Publisher, 2002.
7. Thavaraj M.J.K., Financial Administration in India, S.Chand & Co. Pvt. Ltd., New Delhi, 1997.

**SEMESTER-IV  
WOMEN EMPOWERMENT**

**WOMEN RIGHTS AND LEGAL REFORMS: IDEOLOGIES AND PRACTICE**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

**Women Rights:**

1. Dowry Prohibition Act 1961.
2. Prohibition of Child Marriage Act 2006.

**UNIT-II**

**Women Rights and Maintenance Acts**

**Relevant Provisions:**

1. Hindu Adoption and Maintenance Act 1956.
2. Hindu Succession Act 2005.”
3. Muslim law regarding Maintenance and Succession.

**UNIT-III**

**Women Rights and Maintenance Acts**

1. Hindu law regarding Maintenance and Succession.
2. Muslim law regarding Maintenance and Succession.

**UNIT-IV**

**Women Rights: Role of Civil Society and NGO's**

1. Civil Society, Women and Gender Issues.
2. NGO's in India and the challenges for Women Empowerment.
3. National Alliance of Women's Organization (NAWO) and its Achievements.
4. CEDAW and its Implementation in India.

**SEMESTER-IV  
ECONOMICS**

**INTERNATIONAL ECONOMICS AND PUBLIC FINANCE**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

**International Trade:** Internal and External Trade. Classical and Heckscher. Ohlin Theories, Gains from Trade, Terms of Trade, (gross, net and income terms of trade). Trade and economic development.

**Commercial Policy:** Free trade vs. protection, rationale of a protectionist policy in less developed area. GATT & WTO (Introductory).

**UNIT-II**

**Balance of Payments:** Meaning and components of balance of payments, Methods for correcting adverse balance of payments, devaluation and direct control.

**Rate of Exchange:** Meaning and determination, Fixed and flexible exchange rates.

### UNIT-III

**Public Finance:** Nature, scope importance.

**Public Expenditure:** Meaning, principles, importance, effect of public expenditure on production and distribution.

### UNIT-IV

**Taxes:** Meaning, classification, features of a good taxation system, canons of taxation, incidence and impact of taxation.

**Public Debt:** Meaning, objectives, importance, its burden.

### Recommended Texts

1. Sodersten, B.O.: International Economics, Macmillan, London, 1980.
2. Salvatore, B.: International Economics (1990), Macmillan Publishing Company, New York, 1975.
3. Maclean and: International Institutions in Trade Snowdown and Finance (1981).
4. Aggarwal, M.R.: International Institutions and Development in Developing Countries, Deep & Deep Publications, New Delhi, 2001.
5. Musgrave, R.A.: Theory of Public Finance.
6. Taylorm Philip: The Economics of Public Finance.
7. Buchanan, J.M.: The Public Finance.
8. Baltin, H.: Public Finance.
9. Herber, B.P.: Modern Public Finance.

**SEMESTER-IV****INDUSTRIAL ECONOMICS-IV****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Theories of Industrial Location : Contribution of Weber, Sargent Florence and Plander. Factors affecting industrial location. Location policy in India since independence.

**UNIT-II**

Patterns of industrialization, Centralised versus Balanced regional development. Industrial concentration and dispersal in India - Methods of measurement.

**UNIT-III**

Measures to control industrial concentration; licensing, SEBI; controlling monopolies and restrictive trade practices: MRTPA and new competition policy.

**UNIT-IV**

Foreign Exchange Regulation Act and FEMA; Privatization: Forms and evidence. Industrial incentives and disincentives.

**Recommended Books:**

1. Barthwal, R.R.: Industrial Economics—An Introductory Text Book.
2. Kuchhal, S.C.: The Industrial Economy of India.
3. Cherulam, F.: Industrial Economics: Indian Perspective.

## SEMESTER-IV

### QUANTITATIVE TECHNIQUES-IV

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

#### **UNIT-I**

**Multiple Linear Regression:** Concepts, Estimation and Applications (without derivations) of: Partial and Multiple Correlation.

**Non-Linear Regression:** Quadratic and Exponential; Estimation of Fitting of Various Growth Curves (Modified Exponential, Gompertz and Logistic).

#### **UNIT-II**

**Probability:** Definition, Additive & Multiplicative Laws and their Applications, Bayes Theorem, Concept of Random Variable, Probability Mass Function & Density Function, Mathematical Expectation (meaning and properties), Moments, Moment Generating Function and Characteristic Function.

#### **UNIT-III**

**Theoretical Probability Distributions:** Derivations of the properties of Binomial, Poisson, Normal, Beta and Gamma Distributions.

#### **UNIT-IV**

**Sampling:** Various concepts – Population, Sampling Units, Complete Enumeration sample Surveys, Concept of an Estimator and The Standard Error, Standard Error of Estimates. Features of a Good Sample, Random and Subjective Sampling, Simple Random Sampling (with and without replacement), Stratified Random Sampling (applications only).

#### **Books Recommended:**

1. Mood Graybill and Boes: Introduction to the Theory of Statistics (1974)
2. Snedecor and Cochran: Statistical Methods.
3. Sukhatme and Sukhatme: Sampling Theory of Surveys with Applications (1970).
4. Croxton Cowden and Applied General Statistics (I 1973).
5. Kapur and Gupta: Fundamentals of Mathematical Statistics.
6. Murray R. Spiegel: Theory and Problems Statistics (1972).

**SEMESTER-IV**  
**AGRICULTURAL ECONOMICS & MARKETING**

**AGRICULTURAL MARKETING-II**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Concept of Marketing; Marketed and marketable surplus, Structure conduct and performance of agricultural marketing, Supply chains.

**UNIT-II**

Marketing margin, spread and various channels of markets of different foodgrains.  
Food grains marketing system in India, its efficiency with special reference to Punjab.

**UNIT-III**

State intervention in food grains marketing, Role of different agencies (FCI, PUNSUP, MARKFED, State Deptt.) and the impact on market efficiency.

**UNIT-IV**

Financing of Agricultural Markets, Role of Directorate of Marketing and inspection. Role of State Marketing Board, Public Private Partnership in Marketing.

**Recommended Texts:**

1. Moore, J.R., Johl, S.S. and Khusro, A.M.: *Indian Foodgrains Marketing*, 1973.
2. Memoria, C.B.: *Principles and Practice of Marketing in India*, 1979.
3. Kainth, G.S.: *Foodgrains Marketing System in India, Structure and Conduct*, Associated Publishing House, 1982.
4. Jain, S.C.: *Principles and Practice of Agricultural Marketing in India*.
5. Acharya, S.S. and Aggarwal, N.L.: *Marketing of Farm Product in India*, Oxford & IBM Publication.

**SEMESTER-IV  
RURAL DEVELOPMENT**

**RURAL DEVELOPMENT-IV  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 15 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 60 marks.

**UNIT-I**

Agronomy – Definition and its scope. Classification of field crops. Crops rotations/essential nutrients for plant growth inorganic and organic measures including green manuring.

**UNIT-II**

Weeds and losses caused by the Common Kharif and Rabi. Weeds and methods of their control. Role of water in crop production for irrigation requirement of important crops.

**UNIT-III**

Scientific production of food crops, rice, maize, wheat and gram with special reference to their varieties, seed bed preparation, seed rate, method of sowing, weed control, irrigation and fertilizer requirement.

**UNIT-IV**

Scientific production of other crops, cotton, groundnut, sugarcane, raja and barseem harstem with special reference to their varieties, seed bed preparation, seed rate, method of sowing, weed control, irrigation and fertilizer requirement.

**SEMESTER-IV  
RURAL DEVELOPMENT**

**RURAL DEVELOPMENT-IV  
(PRACTICAL)**

**Marks: 20**

Identification of crops and their seeds. Familiarization with common weeds, fertilizers, farm hand tools and implements, Demonstration of rural operations in different crops.

**Note:** 6 period per week will be devoted each to theory and practicals. Each period will be at least of 45 minutes duration.

**Suggested Readings:**

1. Thakur, C.: Scientific Crop Production, Vol. I.
2. Indian Council of: Hand Book of Agricultural Research.
3. Yawalker, K.B.: Manures and Fertilizers, Aggarwal, J.P. & Bokde, S.
4. S.S. Acharya: Agricultural Marketing in India, N.D. Aggarwal Oxford.

**SEMESTER-IV**

**OFFICE MANAGEMENT AND SECRETARIAL PRACTICE  
(VOCATIONAL)**

**TYPE WRITING & SHORTHAND IN ENGLISH ONLY  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 60  
Practical Marks: 40**

**Section-A:** The examiner will set 8 short questions from the entire syllabus. The candidate will have to attempt 6 questions out of 8 questions. Each question carrying 2 marks

**(6x2=12 Marks)**

**Section-B:** The examiner will set 8 long questions in four parts, 2 questions from each unit. The candidate will have to attempt 4 questions selecting at least one from each unit. Each question carrying 12 marks.

**(4x12=48Marks)**

**UNIT-I**

**Carbon Manifolding:** Carbon papers and their kinds, carrying out corrections on carbon copies: use of eraser, eraser, erasing shield, white correcting fluid etc. squeezing and spreading, carbon economy.

**Stencil Cutting and Duplicating:** Techniques of stencil cutting, correction of errors on stencil papers use of correcting fluid, graft methods and use of gumcoated paper method signatures and lining on stencil paper with the help of stylus pen and backing sheet.

Duplicator-kinds of duplicators taking out copies on duplicators, duplicating ink.

**UNIT-II**

**Electric and Electronic Typewriters:** Importance and use of electric typewriters; Advantages of electric typewriters; Salient features of Electronic typewriters.

**Correspondence:** Box Business, Official.

**UNIT-III**

**Shorthand:** Extended use of certain consonant: The Aspirate, tick and dot 'H'; Downward and upward 'R' upward 'sh'; Compound consonants, Medical Semi-circles.

**Halving and Doubling Principle:** Halving-general principles and their exception, use of halving principle in phraseography, doubling-general principles and their exception, use of doubling, principle in phraseography.

**UNIT-IV**

**Prefixes, Suffixes, Contractions and Intersections:**

Prefixes and Suffixes—meaning and uses, list of prefixes and suffixes, contractions: general rules and list of contractions. Intersections—meaning and uses, list of intersections, writing of figures in shorthand.

**Note: Taking techniques and transcription on typewriter.**

**SEMESTER-IV**

**TYPE-WRITING  
(PRACTICAL)**

**Carbon Manifolding**

Taking out copies with the help of carbon papers. Carrying out corrections on carbon copies, carrying out corrections with squeezing and spreading methods, correction of drafts.

**Stencil Cutting and Duplicating**

Stencil cutting, carrying out corrections on stencil papers with different methods. Cyclostyling.

Electric and electronics typewriters.

Practice on above typewriters.

**Correspondence**

Typewriting of business letters.

Typewriting of official letters.

**SEMESTER-IV**

**SHORT HAND  
(PRACTICAL)**

1. Practising the use of halving and doubling principles, prefixes, suffixes from text book.
2. Repeated practice of contraction and intersection.
3. Taking dictation of passages for five minutes at a speed of 60 w.p.m. and transcription of the same on typewriter.
4. Taking dictation from tape-recorder.
5. Taking dictation from different voices.
6. Recording class lectures. Probable work-sites where On-the-job Training may be organized
  - Government Department Offices.
  - Business/Commercial Organisation.
  - Industrial Establishments
  - Hospitals.
  - Educational-Institutions.
  - Railways, Airlines and other Transport undertakings
  - Banking and Insurance Organisation.
  - Parliament and State Assemblies.
  - Job-work Centres.

This is tentative list. Principal may be given the complete freedom in selecting any organisation. However, While selecting the institution care should be taken to select such institution who show willingness to accept the trainees and have the scope for providing variety of experiences in Office Practice and stenography area.

### SEMESTER-IV

#### Suggested Department/Section for On-the Job Training at the end of Second Semester:

Department/Section	No. of weeks
1. Reception/inward and out ward mail.	1
2. Office establishment/filing/office equipment and production.	1
3. Stenography work and typing with various executives and sections.	1
4. Sales, Advertising and Publicity, stores and accounts.	1
	<b>4 weeks</b>

Suggested Department/Section for on-the-job training at the end of Second Year.

Department/Section	No. of weeks
1. Private Secretaries of various executives in different departments of the organisation.	1
2. Office establishment/company. Secretary. Share Department	1
3. Accounts Department/Time Office/Reception.	1
4. Typing Pool/Advertising/Publicity.	1
	<b>4 weeks</b>

**Note:** The purpose of the on-the-job training is to expose the student to the world of work and provide professional experience in real situation. The student shall have to maintain a diary and submit a detailed report of his activities which shall be certified by a responsible officer of the establishment. However, the teacher will also supervise the *on-the-job training* programme.

#### Suggested Reading Materials:

##### (a) Shorthand

Title	Publisher
1. Pitman Shorthand Dictionary	A.H.Wheeler & Company.
2. Pitman Shorthand Reading and Dictation Exercises	Pitman Shorthand School, New Delhi.
3. Shorthand made easy for beginners with key.	O.P. Kathiall
4. How to start shorthand Speed building.	-do- & Edger Thrope
5. How to avoid confusion in outline in pitman shorthand	-do-
6. A comprehensive List of Grana longues & contractions	-O.P. Kuthall

##### (b) Type Writing:

Title	Publisher
1. H.A. Mehta Typewriting complete course Wadala (East)	Mehta Publishing Corporation, Basant Mahal. Bombay-4000037.
2. H.A. Mehta Typewriting Office Practice set	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay-4000037.
3. H.A. Mehta Business Letter typing sets	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay-4000037.

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester-IV) (Session 2018-19)  
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- |  |   |
|--|---|
| 4. Typewriting by Md. Khan Dictation Exercises | Chittoor Publishing House, Chittoor, A.P.   |
| 5. Layouts and Forms in Typewriting            | State Board of Technical Education, Hyderabad – 500022.                             |
| 6. 20th Century Typewriting                    | South-Western Publishing Company, Gincinati, Ohio, USA.                             |
| 7. Typewriting Drills for speed and accuracy   | Gregg. Publishing Corporation, USA.   |
| 8. Principle of Typewriting                    | O.P. Bhatia, S.S. Sangal.   |
| 9. Typewriting speed & accuracy                | O.P. Kuthials& Thorpe.  |
| 10. Typewriting Theory Practicle               | R.C. Bhatia.  |
| 11. Type writing speed & Accuracy-I            | O.P. Kuthiall   |
| 12. -do-                                       | B-II -do-.  |
| 13. Typewriting Office Practice                | Mehta Publishing set by H.A.MehtaCorp.,BasantMahal, Wadala (East), Bombay - 400037. |
| 14. Business letter typing sets by H.A.Mehta   | Mehta Publishing Corpn.,BasantMahal, Wadala (East), Bombay - 400037.                |
| 15. Typewriting Md. Khan Dictation Exercises   | Chittoor Publishing House,Chittoor, A.P. State                                      |
| 16. Lay outs and forms in                      | State Board of Technical Typewriting Education, Hyderabad -500022.                  |
| 17. 20th Century Typewriting                   | South-Western Publishing Company, Cinicinati, Ohio,U.S.A.                           |
| 18. Typewriting Drills for Speed and Accuracy  | Gregg. Publishing. Corporation, U.S.A.  |

**SEMESTER-IV**

**TRAVEL AND TOURISM**

**TOURISM MARKETING AND TRAVEL AGENCY BUSINESS**

**Time: 3 hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setter:**

The Theory Paper consists of two Parts—A and B (short questions and long questions).

**Part-A:** The examiner will set 12 short questions, 3 questions from each section of 02 marks. The candidate will have to attempt 10 questions out of 12 questions.

**(10x02=20 Marks)**

**Part-B:** The examiner will set 8 long questions, 2 questions from each section of 20 marks. The candidate will have to attempt 4 questions out of 8 questions.

**(04x20=80 Marks)**

**UNIT-I**

**Tourism Product:** Principles and concepts of marketing, Meaning and nature of tourism marketing, How tourism marketing is different from the marketing of other products, Marketing mix, Market research vs. Marketing research.

**Pricing:** Marketing vs. Selling, Consumer behavior, Buyer decision making process, Segmentation, targeting and positioning, Pricing strategies.

**UNIT-II**

**Tour Packaging:** Concept and characteristics, Methodology and pricing of tour packaging, Designing and printing of tour brochure.

**Marketing of Packaged Tours:** Marketing in different sectors of tourism, Leisure and hospitality.

**UNIT-III**

**Travel Agency Business:** Linkages in tourism and other sectors - travel agency, transportation, accommodation, food, nutrition and catering, Travel agency and its role in the tourism development, Functions and organizational structure of a travel agency and the tour operators.

**Travel Agents:** Types of travel agents and their responsibilities; Procedures for becoming a travel agent and tour operator in India.

Method of getting IATA recognition and the advantages enjoyed by an IATA recognized travel agent.

### UNIT-IV

**Transportation:** Transportation and tourism development; Role of transportation in the growth of travel agency and tour operator business in India.

**Accommodation:** Accommodation and tourism; Types of accommodation and their organization.

#### Suggested Readings:

1. Kotler, Philip. *Marketing Management: Analysis, Planning Implementation and Control*, Prentice Hall of India, New Delhi.
2. Brigs, Susan. *Successful Tourism Marketing: A Practical Handbook*, Kogan Page, London, 1997.
3. Middleton, Victor T.C. *Marketing in Travel and Tourism*, Butterworth Heinemaun, Oxford, 1994.
4. Brunt, Paul. *Market Research in Travel and Tourism*, Butterworth Heinemaun, 1997.
5. Foster, Dennis L. *Sales and Marketing for the Travel Professional*, McGraw-Hill, 1993.
6. Witt, Stephen R. & Moutinoh, Luiz. *Tourism Marketing and Management Handbook*, Prentice Hall, London, 1994.
7. Baker, M.J. *Marketing: An Introductory Text*, Macmillan, 1985.
8. Veal, A.J. *Research Methods for Leisure and Tourism: A Practical Guide*, Longman, 1992.
9. Mohamed. H. Peeru. *Marketing: A Financial Approach*, Kaveri, New Delhi, 1997.
10. Aaker, David A. & Co. *Advertising Management*, Prentice Hall of India, New Delhi, 1995.
11. Agarwal, Surinder. *Travel Agency Management*, Communication India, 1993.
12. Negi, Jagmohan *Travel Agency and Tour Operation: Concepts and Principles*, Kanishka, New Delhi, 1998.
13. Foster, Dennis L. *An Introduction to Travel and Tourism*, McGraw-Hill, 1994.
14. Bhatia, A.K. *Tourism Development - Principles and Practices*, Sterling, 1992.

**SEMESTER-IV**  
**TOURISM AND HOTEL MANAGEMENT**  
**(VOCATIONAL)**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** It will consist of 10 very short answer questions with answers to each questions up to five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage being 20 marks.

**Section–B:** It will consist of short answer questions with answer to each question upto *two pages* in length. Twelve questions will be set by the examiner and eight will be attempted by the candidate. Each question will carry five marks. The total weightage of the section shall being 40 marks.

**Section–C:** It will consist of essay type questions with answers to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 20 marks: total weightage of the section being 40 marks

**UNIT–I**

Role of Various agencies in growth of Tourism like Central and State Government and Private Players; Positive and Negative impact of Tourism.

**UNIT–II**

**Tourism Products:** Meaning or concept, how they are different from other consumer products.

**Facilities:** Hostels, Transport—Air, Rail, Road and Water.

**UNIT–III**

Technical Terminology of Tourism.

**Tourist Attractions:** Tourist destinations or places and tourist spots having tourist value from heritage spots, having tourist value from heritage or historical points of view or sports and recreational point of view, dance, fair festivals, trade fair, conferences and exhibitions, etc.

**UNIT–IV**

**Tourism Promotions:** The Price of the Product, Tourist Markets, Characteristics of the Travel Market, Classification of Travellers, Obstacles of Travel Trade, The Demand for Travel, Tourism Marketing in India, Tourist Transport, Travel Trade, Hotel Marketing, Tourist Destinations.

**Domestic Tourism:** Benefits of Domestic Tourism, Domestic Tourism in India, Hotels and Domestic Tourism, Difficulties of Domestic Tourism boosting Domestic Tourism.

**SEMESTER-IV**  
**TAX PROCEDURE & PRACTICE**  
**(VOCATIONAL)**

**TAX PLANNING**

**Time: 3 Hours**

**Max. Marks: 100**

**UNIT-I**

Concept of tax planning Method commonly used by tax payers to minimize tax liability-Tax evasion, tax avoidance and tax planning, difference between tax planning ,tax avoidance and tax evasion. Meaning of tax planning, Types of tax planning, objectives of tax planning, Precautions in tax planning, need for tax planning, limitation of tax planning. Difference between tax planning and tax management.

**UNIT-II**

Tax planning for new business

- Location and nature and size of business,
- forms of business organization

Tax planning in respect of managerial remuneration

- Tax planning regarding employees remuneration from employer point of view and employee point of view

**UNIT-III**

Tax planning and managerial decisions

- Tax planning in respect of own or lease
- Sale of assets used for scientific research
- Make or buy decisions
- Repair, replace, renewal or renovation of assets
- Shut down or continue decision

**UNIT-IV**

Tax planning in respect of foreign income

- Selling in domestic or foreign market
- Avoidance of double taxation agreement
- Foreign collaborations and joint ventures

**Suggested Readings:-**

1. Monica Singhania and Vinod K Singhania (2017 ) Corporate Tax Planning & amp; Business Tax
2. Procedures with Case Studies; Taxman 21st Edition 2017, New Delhi
3. Dr. Girish Ahuja and Dr. Ravi Gupta (2016) Concise Commentary on Income Tax with Tax Planning and Problems and Solutions, Bharat law house (2016), New delhi
4. Chaturvedi and Pithisaria's (2017) Income Tax Act (with Relevant Texts of Allied Acts) Lexis Nexis; 2017 edition
5. T G Suresh (2017) Master Guide to Income Tax - As amended by the Finance Act, 2017 Lexis Nexis; Fourth 2017 edition.

**SEMESTER-IV**  
**ADVERTISING, SALES PROMOTIONS AND SALES MANAGEMENT**  
**(VOCATIONAL)**

**PERSONAL SELLING AND SALESMANSHIP**

**Time: 3 Hours**

**Max. Marks: 100**

**On the Job Training of 4 weeks**

The following pattern of setting of question paper shall be observed.

**Note: The question paper covering the entire course shall be divided into three sections as follows:**

**Instructions for the Paper Setters:**

**Section-A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

**Section-B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

**Section C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

A consolidated Report on '**On the Job Training**' shall be prepared by every student and must be submitted in the college. The consolidated Report will be evaluated by the external examiner and shall be given the grades as follows:

O - Outstanding

A - Very Good

B - Good

C - Average

D - Unsatisfactory

In case, the training report is rated as unsatisfactory, the candidate shall have to submit it again incorporating the changes suggested by the examiner, within one month from the date of intimation to the candidate by the concerned college.

**Note: The candidates are allowed to use simple (Non- Scientific) calculators.**

### UNIT-I

Nature and Importance of personal selling, Door to door selling situation where personal selling is more effective than advertising. Cost of advertising Vs. Cost of personal selling.  
AIDA model of selling, Types of selling situations; Types of sales persons

### UNIT-II

**Buying Motives;** types of markets; Consumer and Industrial markets, their characteristics and implications for the selling function

**Process of Effective Selling:** Prospecting, Pre-approach, approach, presentation and demonstration, handling and objections. Closing and sale post-sale activities

### UNIT-III

Qualities of the successful sales person with particular reference to consumer services  
Selling as a career, advantages and difficulties. Measures for making selling an attractive career

### UNIT-IV

Distribution network-relationship

Reports and documents; sale manual, order desk, cash memo, tour dairy, daily and preiodical reports; Other problems in selling

#### A. Tentative Suggested Readings:

1. Manning, G.L. & B.L. Reece, SettingTodayBuilding Quality Partnerships, PHI, 2002.
2. Still, Richard R., Edward N. Gndiff and Norman A.P. Govoni, Sales Management: Decisions, Strategies & Cases, PHI 5th Ed., 2000.

**SEMESTER-IV  
COMMERCE**

**SALESMANSHIP**

**Time: 3 Hours**

**Marks: 100**

**Theory: Teaching Hours: 60 Periods of 45 Minutes each.**

**Note: i) The candidates are allowed to use simple (Nonscientific) calculators.**

**ii) The question paper covering the entire course shall be divided into three sections as follows :**

**Section-A:** It will consist of 10 very short answer type questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage being 20 marks.

**Section-B:** It will consist of short answer type questions with answer to each question upto two pages in length. Twelve questions will be set by the examiner and eight will be attempted by the candidates. Each question will carry six marks. The total weightage of the section shall be 48 marks.

**Section-C:** It will consist of essay type questions with answer to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry sixteen marks, total weightage of the section being 32 marks.

**UNIT-I**

**Selling:** Concept of selling, role of society, careers in selling, characteristics of sales careers, types of selling jobs; types of sales people Salesmanship-Definition, nature and scope; origin and development; salesmanship a science or an art.

**Salesman:** Qualities- Physical and mental, salesman's duties and responsibilities, role in the organisation. Features, qualities and work performed by counter salesman travelling salesman, speciality of salesman, staple salesman.

## UNIT-II

Manufacturers salesman, wholesaler's salesman, Exporters Salesman, service salesman and Missionary Salesman. Strengths and limitation of personal selling. Salesman and his territory; coordination of selling efforts

Significant aspects of human behaviours, buying motives, the art of persuasion, difference between prospects and customer.

## UNIT-III

Introduction to selling theories, selling process, Determining selling objectives, Prospecting-definition, nature and methods, some prospecting system

Planning the sale, objective, sources of information, sizing up the prospect, the approach-importance and objectives gaining the interview, methods of approaching prospect making approach effective. Sales-presentation-objective and strategies of presentation. Demonstration nature, importance and timing, essentials of good demonstration

## UNIT-IV

**Handling Objection:** Types of objections, methods of handling objections. Closing the sales call tactics and methods, ethical problems in selling

Recruitment and selection of salesman, training, compensation, performance, Appraisal of salesman, Salesforce information system

### Suggested Readings:

1. Gosney and Bolhm, "Customer Relationship Management", Prentice Hall of India, 2007.
2. Dasgupta, "Sales Management: In the Indian Perspective", Prentice Hall of India, 2007.
3. Kapoor Ramneek, "Fundamentals of Sales Management", Mac Millan of Indian Ltd., 2007.
4. Coughlan, "Marketing Channels", Pearson Education, 2007.
5. Sahu P.K. and Raut Kishore C., "Sales and Distribution Management", Vikas Publications, 2007.

**SEMESTER-IV**  
**TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)**

**TRAVEL AGENCY, TOUR AGENCY AND ACCOMODATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory: 50**

**Viva: 50**

VIVA will be based on 'On the Field Trip' undertaken by student.

**Instructions for the Paper Setters:**

**Section-A:** It will consist of 10 questions from the entire syllabus of the paper with answer to each question upto 50 words. Students will be required to attempt any 5 questions. Each question will carry 2 marks. This section will be of 10 marks

**Section-B:** It will consist of 8 essay type questions, 2 from each unit with answer to each question upto 5 pages. Students will be required to attempt any 4 questions. Each question will carry 10 marks. This section will be of 40 marks.

**Note:- The candidates are allowed to use simple (Non-Scientific) Calculators.**

**UNIT-I**

Definition, Main functions, Organisational Structure of a Travel Agency and the Tour Operators.

**UNIT-II**

Different types of Travel Agents and (their responsibilities, procedures for becoming a travel Agent and Tour Operator in India.

**UNIT-III**

Role of Indian Airlines, Indian Railways, Air India and Vayudoot in the growth of Travel Agency and Tour Operators business.

**UNIT-IV**

Accommodation: Its types, Organisation and Management System of Hotels.

**Suggested Readings:**

1. MerrisseanJame, W. Travel Agents and Tourism.
2. David H.Howel Principles and Methods of Scheduling Observations (National Publishers) 1987.
3. Agarwal, Surinder Travel Agency Management (Communication India 1983).
4. Geo, Chack Professional Travel Agency Management, Prentice Hall, London 1990.
5. Bhatia, A.K. Tourism Development Principles and Policies, Sterling Publishers, 1991, New Delhi.
6. National Publishers The world of Travel, National Publishers, Delhi, 1979.

**SEMESTER-IV****MATHEMATICS****PAPER-I: STATICS AND VECTOR CALCULUS****Time: 3 Hours****Marks: 50****Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section-A and Section-B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section-A**

Composition and resolution of forces (parallelogram law, triangle law, polygon law, Lami's Theorem, ( $\mu$ ) theorem). Resultant of a number of coplanar forces, parallel forces.

Moments, Varignon's theorem of moments, Couples, Resultant of two Coplanar Couples, Equilibrium of two coplanar couples, Resultant of a force and a couple. Equilibrium of coplanar forces. Friction, Laws of friction, Equilibrium of a particle on a rough plane. Centre of Gravity: Centre of gravity of a rod, triangular lamina, solid hemisphere, hollow hemisphere, solid cone and hollow cone.

**Section-B**

Vector differentiation, Gradient, divergence and curl operators, line integrals, Vector identity, Vector integration, Theorems of Gauss, Green, Stokes and problems based on these.

**Books Recommended:**

1. S.L. Loney: Statics, Macmillan and Company, London.
2. R.S. Verma: A Text Book on Statics, Optical Pvt. Ltd., Allahabad.
3. Spiegel, M.R.: Introduction to Vector Calculus and Tensor.
4. Spiegel, M.R.: Vector Analysis.

**SEMESTER-IV**

**MATHEMATICS**

**PAPER-II: SOLID GEOMETRY**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section-A and Section-B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section-A**

Cylinder as surface generated by a line moving parallel to a fixed line and through fixed curve. Different kinds of cylinders such as right circular, elliptic, hyperbolic and parabolic in standard forms, Cone with a vertex at the origin as the graph of homogeneous equation of second degree in  $x, y, z$ . Cone as a surface generated by a line passing through a fixed curve and fixed point outside the plane of the curve, right circular and elliptic cones.

**Section-B**

Equation of surface of revolution obtained by rotating the curve  $f(x, y) = 0$  about the  $z$ -axis in the form of  $f(x^2 + y^2, z) = 0$ . Equation of ellipsoid, hyperboloid and paraboloid in standard forms. Surfaces represented by general equation of 2<sup>nd</sup> degree  $S = 0$ . Tangent lines, tangent planes and Normal plane.

**Books Recommended:**

1. Narayan, S.: Analytical Solid Geometry, Sultan Chand & Sons (2005).
2. Kreyszig, E.: Advanced Engineering Mathematics.

**SEMESTER-IV****STATISTICS****PAPER-I ADVANCED PROBABILITY-II****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:**

1. Question paper will consist of two sections, Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non-Programmable calculators.

**Section-A**

Concept of statistic, sampling distribution and standard error, Sampling distributions: Chi-square, t and F distributions and their applications, sampling distribution of the mean of a set of independent random observations from a normal population, sampling distribution of the sample variance of independent random observations from a normal population (derivation of sample variance distribution is excluded). Expectation and variance of sampling mean and variance.

**Section-B**

The law of large numbers, Bernoulli's form of the law of large numbers, the difference between convergence in probability and the ordinary convergence of calculus, normal approximation to the Binomial distribution, the central limit theorem for independent identically distributed random variables and the outline of its proof using moment generating function. Applications of central limit theorem.

**Book Recommended:**

1. Meyer, P.L. Introductory Probability and Statistical Applications, Addison—Wesley, (1970).
2. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

**Books Suggested for Supplementary Reading:**

1. Biswal, P.C., Probability and Statistics, Prentice Hall of India, 2007.
2. Ross, S.A., First Course in Probability, Pearson Education, 2007.
3. Miller, I and Miller, M., Mathematical Statistics with Applications, Seventh Edition, Pearson Education, 2007.

**SEMESTER-IV**  
**STATISTICS**

**PAPER-II: STATISTICAL INFERENCE-II**

**Time: 3 Hours**

**Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper will consist of two sections, Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non-Programmable calculators.

**Section-A**

Large Sample Tests: Tests for the independence of two attributes, tests about the mean and variance of a univariate normal distribution, comparison of two univariate normal distributions through their means and variances. Testing the significance of the correlation coefficient. Approximate tests for proportions, Z-transformation of the sample correlation, tests regarding the population correlation coefficient based on the Z-transformation.

**Section-B**

Chi-square tests for goodness of fit, for homogeneity and for independence of attributes, simplified formula for Chi-square for testing homogeneity and for independence in 2x2 tables and kxb contingency tables. Yates correction for continuity in 2x2 tables.

Small Sample Tests: t-tests for single population and two populations, paired t-test, t-test for significance of correlation coefficients and regression coefficients, F-test for equality of variances.

**Book Recommended:**

1. Goon. A.M., Gupta. M.K. and Dasgupta B., Fundamentals of Statistics, Vol. I, World Press, 2005.
2. Goon. A.M., Gupta. M.K. and Dasgupta B., Fundamentals of Statistics, Vol. II, World Press, 2005.
3. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

**Books Suggested for Supplementary Reading:**

1. Hogg. R.V. and Mckean, J.W. and Craig. A.T., Introduction to Mathematical Statistics, Pearson Education, 2007.
2. Miller, I and Miller, M., Mathematical Statistics with Applications, Pearson Education, 2007.

**SEMESTER-IV****STATISTICS****PAPER-III: Practical based on PAPER-II: STATISTICAL INFERENCE-II****Time: 2 Hours****Marks: 30**

Teaching time for practical paper would be one hour per week.

**List of practical exercises**

1. Exercises on Large Sample Tests
2. Exercises on Z-transformation
3. Exercises on applications of Chi square test
4. Exercises on applications of t - test
5. Exercises on application of F - test

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and other one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non-Programmable calculators. The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

**SEMESTER-IV**

**CHEMISTRY (INORGANIC CHEMISTRY-A)  
(THEORY)**

**Time: 3 Hrs.**

**Marks: 35**

**45 Hrs (3 Hrs/week)**

**The question paper shall consist of two parts as detailed below:-**

**Part-A (Compulsory)**

It shall consist of 8 very short answer type questions (Q. No. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed  $1/3^{\text{rd}}$  of the page. Each question will be carrying one Mark. **(8 x 1 = 8 Marks)**

**Part-B**

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. Nos. 09 to 17) from the entire syllabus. Each Section will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question carries  $4\frac{1}{2}$  marks.

**(6 x  $4\frac{1}{2}$  = 27 Marks)**

**Section-I**

**I. Coordination Compounds**

**10 Hrs.**

Werner's coordination theory and its experimental verification, effective atomic number concept, chelates, nomenclature of coordination compounds, isomerism in coordination compounds, valence bond theory of transition metal complexes.

**II. Non-aqueous Solvents**

**5 Hrs.**

Physical properties of a solvent, types of solvents and their general characteristics, reactions in non-aqueous solvents with reference to liquid  $\text{NH}_3$  and liquid  $\text{SO}_2$ .

**Section-II**

**III. Oxidation and Reduction**

**8 Hrs.**

Use of redox potential data-analysis of redox cycle, redox stability in water-Frost, Latimer and Pourbaix diagrams.

**IV. Chemistry of Lanthanide Elements**

**7 Hrs.**

Electronic structure, oxidation states and ionic radii and lanthanide contraction. Electronic absorption and magnetic properties of lanthanides.

### Section-III

#### V. Chemistry of Actinides

5 Hrs.

General features and chemistry of actinides, similarities between the later actinides and the later lanthanides. Electronic and magnetic properties of actinides and their general comparison with the lanthanide elements.

#### VI. Bioinorganic Chemistry

10 Hrs.

Essential and trace elements in biological processes, metalloporphyrins and special reference to haemoglobin and myoglobin. Biological role of alkali and alkaline earth metal ions with special reference to  $\text{Ca}^{2+}$ .

#### Books Suggested:

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDaniell, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Porterfield, W.W., Wesley, A., Inorganic Chemistry; Pubs: Addison-Wesley Publishing Company, 1984.
6. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.
12. University General Chemistry, C.N.R. Rao, Macmillan.

**SEMESTER-IV**  
**CHEMISTRY (ORGANIC CHEMISTRY-B)**  
**(THEORY)**

**Time: 3 Hrs.**  
**45 Hrs (3 Hrs/week)**

**Max. Marks: 35**

**The question paper shall consist of two parts as detailed below:-**

**Part-A (Compulsory)**

It shall consist of 8 very short answer type questions (Q. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed 1/3<sup>rd</sup> of the page. Each question will be carrying one Mark. **(8 x 1 = 8 Marks)**

**Part-B**

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. No. 9 to 17) from the entire syllabus. Each Section will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question carries 4½ marks. **(6 x 4½ = 27 Marks)**

**Section-I**

**I. Carboxylic Acids**

**(8 Hrs.)**

Nomenclature, structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength. Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction. Synthesis of acid chlorides, esters and amides. Reduction of carboxylic acids. Mechanism of decarboxylation.

**II. Carboxylic Acids Derivatives**

**(7 Hrs.)**

Structure and nomenclature of acid chlorides, esters, amides and acid anhydrides, Relative stability & reactivity of acyl derivatives. Physical properties, interconversion of acid derivatives by nucleophilic acyl substitution. Preparation of carboxylic acid derivatives, chemical reactions. Mechanisms of esterification and hydrolysis (acidic and basic).

**Section-II**

**III. Ethers and Epoxides**

**(5 Hrs.)**

Nomenclature of ethers and methods of their formation, physical properties. Chemical reaction-cleavage and autoxidation, Ziesel's method. Synthesis of epoxides. Acid and base-catalyzed ring opening of epoxides, orientation of epoxide ring opening, reactions of Grignard and organolithium reagents with epoxiedes.

**IV. Organic Compounds of Nitrogen****(10 Hrs.)**

Preparation of nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes, Mechanisms of nucleophilic substitution in nitroarenes and their reduction in acidic, neutral and alkaline media. Reactivity, Structure and nomenclature of amines, Methods of preparation of amines by Reductive amination of aldehydic and ketonic compounds, Gabriel-phthalimide reaction and Hofmann bromamide reaction. Physical properties. Stereochemistry of amines. separation of a mixture of primary, secondary and tertiary amines. Structural features effecting basicity of amines. Amine salts as phase-transfer catalysts.

**Section-III****V. Organometallic Compounds****(7 Hrs.)**

Organomagnesium Compounds: The Grignard reagents formation, structure and chemical reactions.

Organolithium Compounds: Formation and chemical reactions.

Organozinc and Organo copper Compounds: Nomenclature, structural features, Methods of formation and chemical reactions.

**VI. Heterocyclic Compounds****(8 Hrs.)**

Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine. Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution. Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole.

**Book Suggested:-**

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
2. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
3. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: Wiley Eastern Limited, 1985, Vol.I, II, III.
4. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.
7. Introduction to Organic Chemistry, Sireitwieser, Heathcock and Kosover, Macmillan.

**SEMESTER-IV  
CHEMISTRY  
(PRACTICAL)**

**Duration: 3½ hrs.**

**Marks: 30**

**6 Period/Week**

**Qualitative Analysis**

**Detection of elements** (N, S and halogens)

**Detection of functional groups** (phenolic, carboxylic, carbonyl, esters, carbohydrates, amines, amides, nitro and anilide) in simple organic compounds and preparing their derivatives.

**Practical Examination**

1) Detection of Elements	05
2) Detection of functional group and derivative preparation	18
3) Viva-Voce	04
4) Note Book	03

**Book Suggested:-**

1. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
2. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
3. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.

**SEMESTER-IV  
PHYSICS**

**PAPER-A  
QUANTUM MECHANICS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT-I**

**Formalism of Wave Mechanics:**

Brief introduction to need and development of quantum mechanics, photoelectric effect, Compton effect, Wave particle duality, De broglie hypothesis, Uncertainty principle, Guassian wave packet. Operator correspondence. Normalization and probability interpretation of wave function. Superposition principle.

**UNIT-II**

Expectation value, Probability current and conservation of probability. Admissibility conditions or wave function. Ehrenfest theorem, Eigen function and eigen value. Operator formalism, orthogonal system, expansion in eigen functions, Hermitian operator, simultaneous eigen function, equation of motion.

**UNIT-III**

**Problem in One and Three Dimensions:** Fundamental postulates of wave mechanics, Schrodinger equation for a free particle and equation of a particle subject to forces. Schrodinger equation, Application to stationary states for one dimension, Potential Barrier, rectangular potential well, degeneracy, Orthogonality, Linear harmonic oscillator. Schrodinger equation for spherically symmetric potential for hydrogen atom. Spherical harmonics and their solution. Physical significance of quantum number. Degeneracy.

#### UNIT-IV

Interaction energy ideas, X-ray spectra, Mosley law, Absorption spectra, Auger effect, Molecular bonding, Molecular spectra, selection rules, symmetric structure, Rotational Vibrational, electronic level and spectra of molecules, Raman spectra. Introduction to Raman spectra.

#### Text Reference Books:-

1. A Text book of Quantum Mechanics, P.M. Mathews and K. Venkatesan, (Tata McGraw Hill Pub., Co., Delhi) 2002.
2. Quantum Mechanics J.L. Powell and B. Craseman (Narosa Pub. House, New Delhi) 1997.
3. Concepts of Modern Physics, Arthur Beiser (McGraw Hill Pub. Co., New Delhi, 9<sup>th</sup> Ed.) 1995.
4. Elements of Modern Physics, S.H. Patil (McGraw Hill), 1998.
5. Quantum Mechanics, E. Merzbacher (John Wiley, 2<sup>nd</sup> Edition)
6. Fundamentals of Molecular Spectroscopy, C.N. Banwell (Tata McGraw Hill Pub. Co., Delhi), 2001.
7. Atomic Spectra, H.G. Kuhn (Longmans), 2<sup>nd</sup> Ed., 1969.
8. Introduction to Quantum Mechanics, L. Pauling and E.B. Wilson (Tata McGraw Hill Pub. Co., Delhi), 2002.
9. Quantum Mechanics, W. Greiner (Springer Verlag), 1994.
10. Fundamentals of Molecular Spectroscopy: C.B. Banwell-Tata McGraw Hill, 1986.
11. Molecular Spectroscopy: Jeanne L McHale.

**SEMESTER-IV  
PHYSICS**

**PAPER-B  
ATOMIC SPECTRA & LASERS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT-I**

**One Electron Atomic Spectra:**

Spectrum of Hydrogen atom, Line structure, Normal Zeeman effect, electron spin, Stern Gerlach experiment, spin orbit coupling, electron magnetic moment, total angular momentum, Hyperfine structure, examples of one electron systems, anomalous Zeeman effect, Lande g factor (Sodium D-Lines).

**UNIT-II**

**Many Electron System Spectra:**

Exchange symmetry of wave function, exclusion principle, shells, subshells in atoms, atomic spectra (Helium), spectra of alkaline earth atoms, LS coupling, selection rules, Regularities in atomic spectra.

**UNIT-III**

**Laser Fundamentals:**

Derivation of Einstein relations, Concept of stimulated emission and population inversion, Fauchber Ledenberg formula, Threshold and Schawlow Tonnes condition, three level and four level laser schemes, elementary theory of optical cavity, Longitudinal and transverse modes.

#### UNIT-IV

##### **Laser Systems:**

Components of laser devices, condition for laser action, types of lasers, Ruby and Nd:YAG lasers, He-Ne and CO<sub>2</sub> lasers construction, mode of creating population inversion and output characteristics, Q-switching, application of lasers –a general outline, Basics of holography.

##### **Text Reference Books:**

1. Introduction to Atomic Spectra: H.E. White-Auckland McGraw Hill, 1934.
2. Spectroscopy Vol. I, II & III: Walker & Straughen
3. Introduction to Molecular Spectroscopy: G.M. Barrow-Tokyo McGraw Hill, 1962.
4. Spectra of Diatomic Molecules: Herzberg-New York, 1944
5. Introduction to Atomic Spectra, H.E. White (Mcgraw Hill, Book Co., Inc., New York)
6. Laser Fundamentals, W.T. Silfvast (Foundation Books), New Delhi, 1996
7. Laser and Non-Linear Optics, B.B. Laud (New Age Pub.) 2002
8. Laser, Svelto, (Plenum Pres) 3<sup>rd</sup> edition, New York

**SEMESTER-IV  
PHYSICS**

**(PRACTICAL)**

**General Guidelines for Practical Examination: (4.5h/week)**

- |   |  |                  |
|---|--|------------------|
| I | The distribution of marks is as follows: | <b>Marks: 30</b> |
|   | i) One experiment                        | <b>15 Marks</b>  |
|   | ii) Brief Theory                         | <b>5 Marks</b>   |
|   | iii) Viva-Voce                           | <b>5 Marks</b>   |
|   | iv) Record (Practical file)              | <b>5 Marks</b>   |
- II. There will be one sessions of 3 hours duration. The paper will have one session.  
Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
- III. Number of candidates in a group for practical examination should not exceed 12.
- IV. In a single group no experiment be allotted to more than three examinee in any group.
1. To study adiabatic expansion of gas and hence to calculate value of  $\gamma$ .
  2. To find the coefficient of Thermal Conductivity of a bad conductor by Lee's method.
  3. To plot a calibration curve of a given thermocouple (copper constantan) using a potentiometer.
  4. To study the photoelectric effect and determine the value of planck's constant.
  5. To determine the ionization potential of mercury.
  6. Study of variation of light intensity with distance using photovoltaic cell (Inverse Square Law)
  7. To determine the heating efficiency of an electric kettle with varying voltage.
  8. To study the absorption spectra of iodine vapours.
  9. To study the rotation of plane of polarization by using polarimeter.
  10. To determine the specific rotation of sugar using Laurent's half shade polarimeter
  11. To study the characterizations of Photovoltaic cell.

**SEMESTER-IV  
HOME SCIENCE**

**CLOTHING TEXTILES, PART-II  
(THEORY)**

**Time: 3 Hours  
6 Periods/week**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Instructions for the Paper Setter:**

The question paper will consist of five sections: A,B,C,D and E. Section A, B,C & D will have two questions from the respective sections of the syllabus & will carry 10 marks each. Section E will consist of 5 short Type/objective type questions covering the entire syllabus uniformly carrying 2 marks each.

**Instructions for the Candidates**

Candidates are required to attempt one question each from the section A,B,C & D of the question paper and entire section E.

**Section-A**

1. Principles of design such as harmony, balance, rhythm, emphasis, and proportion.
2. Elements of design such as colour, line, form, texture, light and pattern.

**Section-B**

1. Selection of suitable clothes for the following groups
  - a) Infants
  - b) Toddlers
  - c) School going children
  - d) Adolescents
  - e) Adults
  - f) Elderly.
2. Care and storage of garments: cotton wool and silk.

**Section-C**

- 1 Bleach—Oxidising, reducing bleaches & their suitability to different fabrics.
- 2 Finishing—Sizing, designing, calendaring, sanforising, mercerisation, crease resistant, water proofing & water repellent, flame resistant & flame proofing.

**Section-D**

1. Different types of yarns- simple, novelty and bulk yarn in brief.
2. Fabric construction- a brief study of basic weaves
  - a) simple weaves- basket ,rib
  - b) twill- broken twill, satin, sateen.
  - c) knitting, knotting, felting, bonding.
3. Stains: definition, types of stains, general procedure for identification and removal of common stains.

**SEMESTER-IV  
HOME SCIENCE**

**CLOTHING TEXTILES, PART-II**

**(PRACTICAL)**

**Time: 4 hours  
6 Periods/week**

**Marks: 50**

**1. Clothing**

1. Drafting and stitching of the following
  - a) ladies shirt (kameez)
  - b) salwar
  - c) chooridar payjami
  - d) nightie.

**2. Textile**

1. Preparation of article by
  - a) stencil printing
  - b) fabric painting
  - c) stain removal- tea, rust, curry, oil, ball pen, boot polish, lipstick, nail polish, juice

**Instructions for the Practical Examiners:**

**Clothing Practical**

**Time: 2hrs 30 min**

- a. Drafting and stitching of garment -15 marks
- b. File/Scheme-10 marks

**Textile Practical**

**Time: 1 hrs 30 min**

- a. Fabric painting/ stencil printing-10 marks
  - b. Stain removal-5 marks
  - c. Scheme/ file- 10 marks
- Number of students in one group 12

**Note: One practical group will consist of 15 students.**

**SEMESTER-IV****COSMETOLOGY (VOCATIONAL)****(THEORY)**

**Time: 3 Hrs.**  
**Periods/Week: 6**

**Max. Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**Instructions for the Paper Setters:**

**Set 7 questions of 10 marks each. Students are required to attempt 4 questions.**

**Paper setter can divide question in short of 5 marks each.**

**Content:****1. Chemical Knowledge of Hair**

- a) Chemical Structure of Hair
- b) Hair Bonds
- c) Acids & Alkalis
- d) Determine porosity in chemical hair treatments

**2. Colours**

- a) Colour Principles
- b) Colour Key Programme and its relation to skin, eye and hair
- c) Analysis of client
- d) Hair textures, lighteners, cosmetics and hair colouring

**SEMESTER-IV**

**COSMETOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**Time: 4hrs.**

**Marks: 60**

**Periods/Week: 6**

**Note: Paper will be set on the spot by the examiner.**

**1. Basic Hair Shaping**

- a) Hair Shaping instruments and their using
- b) Sectioning for a haircut
- c) Degree System for haircutting
- d) Hair Textures and 4 types of haircuts

**2. Scalp Manipulation**

- a) Benefits of Scalp Manipulation
- b) Scientific Hair Brushing
- c) Pressure Points of Head Massage
- d) Hair Styling Buns

**SEMESTER-IV**  
**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**PAPER-A: INTRODUCTION TO FOOD COMMODITIES**  
**(THEORY)**

**Time: 3 Hrs.**  
**Periods/week: 4**

**Marks: 40**

**Instructions for the Paper Setters:**

1. Theory paper will be of 3 hrs duration.
2. Question paper should cover all the topics of the syllabus.
3. There will be eight question in all the students are to attempt 5 questions. Each question carry 8 Marks.
4. Questions 1 is compulsory which contains short answer type questions.

**Objectives:**

1. To understand the basic commodities both raw and processed used in catering and various aspect of their production and distribution.
2. To discuss the qualities and standards of available commodities and their suitability for different purposes.

**Course Outline:**

- I. Cereals & Pulses:** Cereals and millets, breakfast cereals, cereal products Fast foods-structure, processing, use in variety of preparations, selection, variety storage, nutritional aspects and cost. Pulses & Legumes-Production (in brief) selection and variety, storage, processing, use in variety of preparations, nutritional aspects and cost.
- II. Eggs:** Production, grade, quality, selection, storage, spoilage, uses, cost and nutritional aspects.
- III. Fish, Poultry and Meat:** Variety, Selection, Purchase, storage, availability, cost, use and.
- IV. Vegetable & Fruits:** Classification, nutritional aspect, selection raw and processed, storage, use & cost.
- V. Sugar & Sugar Products:** Different forms of sugar (sugar, jaggery, honey syrup) manufacture, selection, storage & use, pre-serves.

- VI. Fats and Oils:** Types and sources of fats and oils (animal and vegetable) processing, use, storage, cost and nutritional aspects.
- VII.** Raising agents Types, constituents, basic cookery and bakery, preservation methods.
- VIII. Food Products:** Spices, condiments, herbs, extracts concentrates, essences & food colours, origin, classification, description, uses, specifications, procurement and storage.
- IX. Convenience Foods:** Role, types, advantages, disadvantage, cost and contribution to diet.
- X. Salt:** Types, uses in the diet.
- XI.** Tea, Coffee, Chocolate and Cocoa powder, processing, use, cost and nutritional aspects.

**Reference Book:**

1. Mohini Sethi, Eram.S.Rao Food Science Experiments & Applications, CBS Publisher & Distributor, New Delhi.

**SEMESTER-IV**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**PAPER-B: INSTITUTIONAL FOOD ADMINISTRATION  
(THEORY)**

**Time: 3 Hrs.**  
**Periods/week: 4**

**Marks: 40**

**Instructions for the Paper Setters:**

1. Theory paper will be of 3 hrs duration
2. Question paper should cover all the topics of the syllabus.
3. There will be 8 questions in all students need to attempt 5 questions  
(8 marks for each questions).
4. Question 1 is compulsory which contains short answer type questions.

**Objectives:**

- 1) To develop administrative skills in students to run any institutional food service.
- 2) To gain knowledge about financial aspect of institutional food service.

**Course Content**

- 1) Standardization and portion size of recipe-calculating cost of dish, meal and event. Methods of calculation-Gross profit ratio food cost ratio elements of cost Methods of controlling cost.
- 2) **Functions of Management** - Planning Organizing directing, coordinating, controlling and evaluating.
- 3) **Tools of Management** - The Organization charts, types, job description, job specification work schedule, job analysis.
- 4) **Management of Specific Resource in Food Production Service** - Time, energy, money and budget.
- 5) **Food Buying** - open market, formal, negotiated & wholesale buying.

- 6) **Receiving and Storage of Food** - Delivery method requisition slip, order form, stock, book invoice.
- 7) **Personnel Management** - Need, recruitment, selection and training.
- 8) **Book Keeping** - Systems of book keeping - single entry and double entry, brief introduction of different books of account - the cash book, purchase book, sales book, journal ledger and profit and loss account.

**Reference Books:**

- 1) Mohini Sethi, Surjeet Malhan - Catering management, An Integrated Approach, New Age International (P) Limited Publishers - Jalandhar.
- 2) Bora, P.M. - Food Administration in India, A Study of An Indian State 1982.

**SEMESTER-IV**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**ON JOB TRAINING**

**CAFETERIA**

**Marks: 20**

- 1) Standardization, preparation and cost calculation of recipes suitable for cafeteria.
- 2) Students are required to prepare dishes and sell it. They will be evaluated on the basis of their performance in cafeteria.

**SEMESTER-IV****FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)****FUNDAMENTALS OF TEXTILES  
(THEORY)****Time: 3 Hours****Periods/week: 3****Max. Marks: 100****Theory Marks: 40****Practical Marks: 60****Instructions for the Paper Setters:**

Examiner to set total 8 questions, two questions from each unit

Students will attempt 1 question from each unit; each question will carry 10 marks

**UNIT-I****1. Introduction to Woven Fabrics**

- a) Weaving-Parts of Basic Loom, Basic Weaving Operation
- b) Classification of Weaves-Basic Weaves, Fancy Weaves

**UNIT-II****2. Introduction to Non- Woven Fabrics**

- a) Knitting-Warp Knitting, Weft Knitting
- b) Felting
- c) Bonding

**UNIT-III****3. Introduction to Finishes**

- a) Classification of finishes
- b) Mechanical finishes
- c) Chemical finishes

**UNIT-IV****4. Introduction to Dyeing and Printing**

- a) Tie and Dye, Batik Dye
- b) Block printing, Screen Printing, Roller Printing and Discharge Printing.

**SEMESTER-IV**

**FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)**

**PATTERN MAKING AND GARMENT CONSTRUCTION  
(PRACTICAL)**

**Time: 5 Hrs.**  
**Periods/week: 2x6**

**Marks: 60**

**Instructions for the Paper Setters:**

- Q. 1 from Part-A carrying 20 marks.
- Q. 2 from Part-B carrying 30 marks
- Q. 3 from File and scheme 10 marks

**PART-A**

**1. PATTERN MAKING AND GRADING**

- a) Drafting and Adaptation of Sleeves-Basic Sleeve, Cowl, Dolman, Peasant
- b) Drafting and Adaptation of Collars- Chinese, Convertible, Shawl, Coat
- c) Upgrading and Downgrading of Bodice Block.

**PART-B**

**2. GARMENT CONSTRUCTION**

- a) Designing, Drafting and Construction of Ladies Blouse.
- b) Designing, Drafting and Construction of Designer Suit.
- c) Traditional Embroidery- Kantha, Chikankari.

**SEMESTER-IV**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**  
**Lectures/week: 6**

**Maximum Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:**

Ten Questions will be set; students are required to attempt any 6, carrying 10 marks each.

**Course Contents:**

**Curriculum Planning** - Curriculum models, Use of Curriculum models in early childhood education

**Curriculum Management**– Programme planning, Principle content, annual, monthly, weekly, daily programmes

Execution and planning of activity plans

Indoor and outdoor activities

**Preschool Equipments-** Need and importance of equipments, Maintenance of equipment

Record keeping

**Handicapped Children-** Identification of children with special need, Special needs of handicapped children, Integration with normal children.

**SEMESTER-IV**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 40**

**Lectures/week: 4**

**Instructions for the Paper Setters:**

Paper will be set on the spot by the examiner.

**Distribution of Marks**

Written Practical Test:	<b>10 Marks</b>
Practical File:	<b>5 Marks</b>
Oral Examination:	<b>5 Marks</b>
Class Performance:	<b>10 Marks</b>
Article/Activity Material:	<b>10 Marks</b>

**Course Contents:**

Collection of self composed age appropriate stories and rhymes for pre-school children

Demonstration on making ECE centre childproof, maintenance and care of equipment

Activities for generating moral values among pre-school children

To create awareness regarding personal hygiene and environment among pre-school children

Preparation of article/activity material for motor/social/creative skills development of pre-school children

**Suggested Readings:**

1. Camp as an approach for parents: Education (1995), child resource centre, centre for health education, training and Nutrition awareness (CHETNA), lilabatiber Lalbhai's Bungalow, civil camp road, Shahibaug, Ahmedabad -380004 (Gujarat).
2. Developmentally Appropriate practices in Early Childhood programme. Serving children from birth through Ages 8. Expanded Edition. Sue Bredekamp, National Association for the education of young children. 1884 Connecticut Avenue, N.W. Washington, D.C. 20009- 5786.

3. Education's Manual, Child Centered Health Education Approaches, (1995), CHETNA (Gujarat)
4. Getting ready for school- The Pre-school years- A manual for care givers of children (1994), CHETNA (Gujarat)
5. Guide to Activities in creative Drama and Puppetry, (1994) CHETNA (Gujarat).
6. Planning effective preschool education (1995), CHETNA (Gujarat)
7. Fine, J.Marvin, Handbook on Parent Education (1980) Department of educational Psychology and research, school of education, university of Kansas, Lawrence, Kansas.
8. Amin Ranjan, (1997) Learning for life from birth to five Nurturing the Growing Child, Books for change, Mumbai.
9. Swaminathan Mina (1998), The First five years- A critical perspective on Early Childhood Care and Education in India, Sage Publications, New Delhi.
10. Jaswal, S., Nanda, P. and Roy, S. (1997) Toy Box Guide to creative toy making, Asia Vision, Ludhiana.
11. Devi Laxmi (1998) Psychological development during early childhood. Anmol Publications, New Delhi.
12. Grewal, J.S (1984) Early childhood education, Agra National Psychological Corporation.
13. Berk, L.E. (2001) Child Development- Third Edition. New Delhi: Prentice Hall of India.
14. Hurlock, E.B. (1997) Child Development Tata McGraw Hill Publishing Com. Ltd, New Delhi.

**SEMESTER-IV**

**FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)**

**FSQC-7: QUALITY ASSURANCE (THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

Instructions for the Paper Setters: Question paper will cover both the main topics and divided into three parts. Each part will contain at least two questions and students will be asked to attempt five questions in all with at least one from each part and not more than two from any part.

**PART-I**

Objectives, importance and functions of quality control. Methods of quality assessment of food materials: fruits, vegetables and cereals.

**PART-II**

Methods of quality assessment of food materials: dairy products, meat, egg and processed products. Sampling, specifications of raw materials and finished products, Sensory evaluation.

**PART-III**

Concept of HACCP and GMP. Quality Attributes: Size, Shape, Colour, Aroma, Texture, Food Laws and Regulations. AGMARK, FPO, PFA, MFPO, BIS, ISO.

**Recommended Books:**

1. Quality Control for Food Industry by Kramer A, Twigg BA. 1970, AVI Publishers, USA.
2. Handbook of Analysis and Quality Control for Fruits and Veg. Products by Ranganna S, 2nd Ed. 2000, Tata McGraw Hill, New Delhi.
3. Food Science by Potter NN, 5th Ed., 2006, CBS Publishers, New Delhi.

**SEMESTER-IV**

**FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)**

**FSQC-8: QUALITY ASSURANCE (PRACTICAL)**

**Max. Marks: 25**

**List of Practicals**

1. Quality evaluation of milk & milk products.
2. Quality evaluation of cereals.
3. Quality evaluation of fruits and vegetables
4. Quality evaluation of Oils and Fats.
5. Quality evaluation of Meat and Poultry.
6. Adulterants in milk, cereals, oils and fats and their detection.

**SEMESTER–IV**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER–A (THEORY)**

**Time: 3 Hrs.**

**Marks: 50**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**Note: Instructions for the Paper Setters:**

- (a) The question paper will cover the entire syllabus.
- (b) Questions should be based on world famous painting and sculptures whose slides are easily available.
- (c) Question paper should cover the syllabus uniformly.
- (d) The paper setter should set the paper in two sections, A and B.
- (e) The division of the marks will be as under:

**Section–A:** 25 marks for 25 objective questions. Each question carries 1 mark.

**Section–B:** 25 marks for 5 questions. The examiner will set 8 questions. The candidate will attempt 5 questions of 5 marks each.

1. **Early Indian Miniature painting** (Pala School)
2. **Western Indian Miniature painting** (Jain School)

**3. Mughal School of art:**

- (i) Akbar
- (ii) Jahangir

**4. Rajasthani School of Art:**

- (i) Mewar
- (ii) Bundi
- (iii) Kishangarh

**5. Pahari School of Art:**

- (i) Kangra
- (ii) Basohli

**SEMESTER-IV**

**FINE ARTS  
(DRAWING & PAINTING)  
PAPER-B: LANDSCAPE  
(PRACTICAL)**

**Time: 5 Hrs.**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Study of clouds, trees and foreground. Emphasis should be given on perspective, texture, colour and its application in harmony.

**Medium:** Any medium

**Size:** ½ Imperial

**SEMESTER-IV**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER-C: FULL LIFE STUDY (LIFE/CAST STUDY)  
(PRACTICAL)**

**Time: 5 Hrs.**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Rendering of the full life study and study of muscles and bones should be done in pencil or charcoal. Emphasis should be given to structure, volume, proportion, tones and texture.

**Medium:** Pencil or charcoal

**Size:** ½ Imperial

Candidates will submit:

- (i) 5 sheets of each paper.
- (ii) Sketch book containing 50 sketches

**SEMESTER-IV**  
**HISTORY OF ART**

**Time: 3 Hours**

**Max. Marks: 100**

**Note:** Instructions for the Paper Setters:

- (a) The question paper should cover entire syllabus. It will contain subjective answer questions.
- (b) The paper-setter should set 12 questions in all. Students will attempt 10 questions of 10 marks each.

**PART-I**

History of European Painting & Sculpture from earliest times to C. 1300 A.D. to 1850A.D.

Renaissance-Masccio, Michelangelo, Raphael, Titian, Donatello, Leonardo-Da-Vinci.

Baroque-carvaggio, Rubens, Rembrandt.

Landscape-Calude Lorrain, JohnConstable, W.Tumer Painters.

**PART-II**

Theory and Principle of Art Appreciation. Defination of the term miniature,six limbs of India Painting and their manifestations in actual works:Indian concept of Primary colours and their symbolic meaning. Indian theory of Rasa, bhava and beauty.

**SEMESTER–IV****GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)****(THEORY)****Time: 3 Hrs.****Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50****Section–A:** 2 marks for 10 short answer questions. All the questions are compulsory.**2x10=20 Marks****Section–B:** The examiner will set 5 questions. The candidate will attempt 3 questions of 10 marks each.**3x10=30 Marks****1. Physical Properties of Gemstones**

- a. Cleavage: Definition, Description, Importance of Gemology and lapidary work
- b. Hardness: Definition, Moh's scale of hardness, Application in Gemology and lapidary work.
- c. Specific Gravity: Definition, Determination of specific gravity by heavy liquid

**2. Gemology: It's optical properties**

- a. Nature of light
- b. Reflection of light: Law of Reflection, Lusture, Cat's eye effect, Star effect
- c. Refraction of light: Refraction Index, Total Internal refraction, Double refraction
- d. Color of gemstones
- e. Absorption
- f. Dichrosim
- g. Absorption spectrum
- h. Play of Colour

**3. Cuts of Gemstones**

- a. Designing Cut
- b. Catachom Cut
- c. Step cut
- d. Rose Cut
- e. Faceted Beads

**SEMESTER–IV**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)**

**(PRACTICAL)**

**Time: 3 Hrs**

**Marks: 50**

1. Bead making
2. Twisting
3. Different styles of stone setting like Prong, bezel channel etc.
4. Identification of gem stones
5. Development of design of bangles bracelets, rings etc.

Through metals by using above techniques.

**SEMESTER–IV**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

**PHOTO JOURNALISM (THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:**

1. Total number of questions to be set: 26
2. Total number of questions to be attempted: 20
3. Question Paper will be divided in three parts.
4. Section- A will consist of 10 objective type questions. All questions will be compulsory. Each question will carry 1 (one) mark. **(Total: 10 Marks)**
5. Section- B will consist of 12 short answer type questions. Student will attempt 8 (eight) questions. Each question will carry 3 (three) marks. **(Total: 24 Marks)**
6. Section-C will consist of 4 essay answer type questions. Student will attempt 2 (Two) questions. Each question will carry 8 (eight) marks. **(Total: 16 Marks)**

**Course Contents:**

1. Photographing the right moment (Rapid Focusing Technique: Auto Focusing  
(a) Lenses (b) Range Finding (c) Hyper Focal Distance)
2. Retrieval Methods: Photo C.D., Computer C.D. Access system, Photo Catalogue
3. Photo Editing – Continuity, Cropping, Caption, Size, Placement.
4. Digital Imaging
5. Photo-Print Technology, Quality Control, Printing Techniques, Half Tones, Colour.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	A Simple Guide to Digital Photography	Corbett
2.	The Photographers Manual	John Frama

## **SEMESTER-IV**

### **STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

#### **PHOTO LAB TECHNIQUES, (PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

#### **Instructions for the Paper Setters:**

1. The Paper will be set by the External Examiner on the spot considering the syllabus.
2. Creative Work on the part of the students is to be emphasized.  
Technical Competence is expected. The students should also use Updated and Latest Techniques in his/her work.
3. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. and can be evaluated by the Examiner on Computer or Laptop.

#### **Instructions for Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by External Examiner as per requirement.

#### **1. Photolab Techniques**

- Types of Enlarger.
- Types of Light Sources for Enlarger.
- Working of an Enlarger.
- Lenses for Enlarger.

#### **2. Computerised Photo Finishing**

#### **3. Constituents of Developers**

- i) Techniques of Development.
- ii) Types of Developers.
- iii) Effect of Over/Under Development
- iv) Effect of Temperature on Development.
- v) Effect of Agitation on Development.
- vi) Types of Printing Papers, Grades, Textures/ Weight Colour/ Surfaces.
- vii) Mono Bath Development.

#### **4. Special Effect in Printing**

## COLOUR PHOTOGRAPHY AND LIGHTING

### 1. Filter for Colour

- U.V. Filters.
- Polarising.
- Sky Lighting.
- Colour Compensation Filter
- Colour Conversation Filter.

### 2. Lighting

- Shortcoming of Single Flash Unit.
- Their Correction.

### 3. Flash Techniques, Lighting the Subject, Light Source, Quality of Light, Meters.

#### Suggested Readings:

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	John Hedgecoe's The Art of Colour Photography	Mitckell Beazley
2.	35mm Photography	Bavister
3.	Pro Lighting Black and White Shots	Alex Larg and Jane Wood

**SEMESTER-IV  
APPLIED ART**

**ART APPRECIATION & ADVERTISING  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Instructions for the Paper Setters:**

1. No. of questions to be set : 35
2. No. of questions to be attempted: 25
3. The questions are to be equally distributed among all the topics of the Syllabus.
4. Each question will carry 2 (Two) marks.

**Course Contents:**

1. Role of Advertising Agency.
2. Departments of Advertising Agency.
3. Television Advertising.
4. Newspaper Advertisement. (Standard size of column in Newspaper, Classified and Display Adv.)
5. Magazine Advertisement.
6. Calligraphy.
7. Tools of Calligraphy.
8. Hoarding and its purpose.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Practical Calligraphy	Nash & Fleuss
2.	Digital Calligraphy	George Thomson
3.	Advertising Management	Manendra Mohan

**SEMESTER-IV  
APPLIED ART**

**POSTER OR PACKAGING  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Instructions for the Paper Setters/Examiners:**

1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Topic for the Examination will be set by the external examiner on the spot.
4. Extra weightage will be given for creative and professional approach.

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.

**Course Contents:**

**Poster Topics:** Social & Commercial

**Size:** 1/2 imperial.

**Maximum Colours for Social Posters:** 4 (Tones can be used for each colour).

**Maximum Colours for Commercial Posters:** Multi colors.

**Packaging Topics:** Cosmetics, Colours, Toys or any topic set by the teacher in class.

**Size:** According to Product.

**Maximum Colours:** Multi-Colour.

**Note: Limited Reference while preparing rough visual is allowed.**

**SEMESTER–IV**  
**SCULPTURE**

**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Note: Instructions for the Paper Setters:**

1. The Paper Setter should set 12 questions in all and students shall attempt 10 questions.
2. Each question will be of 5 marks

**Chapter:**

- (1) Mathura and Gandhara school of Art under Kushana period.
- (2) Art of Bodhgaya Stupa.
- (3) Art of Amaravati Stupa.
- (4) Gupta Period.

**SEMESTER-IV**  
**SCULPTURE**

**(PRACTICAL)**

**Time: 6 Hrs.**

**Marks: 50**

- (1) High Relief Sculpture , cast in cement/Fiber glass/Plaster of Paris based on Birds/Animals/Human Figures(Min Size 8x8 inches (Total No. 1)
- (2) Composition in round Sculpture based on Human Figures, work should be produced in plaster cast (Total No1)
- (3) Creative Head in clay Modeling work should be produced in Cement/Fiber glass/Plaster cast (Total Number 01)

**Books Recommended:**

- |     |                       |                                    |
|-----|-----------------------|------------------------------------|
| (1) | S.K Sarswati          | A survey of India Sculptures.      |
| (2) | Stella Krmisch        | Indian Sculptures                  |
| (3) | B.M Barwa             | Bharhut                            |
| (4) | S.M Asgar Ali Kadvi   | Moorti Kala ka Itihas.             |
| (5) | Benjamin Rowland      | The Pelican History of Art         |
| (6) | Dr. Gyacharu Tripathi | Prachin Bharat Ki Kala             |
| (7) | Dr. G.K Aggarwal      | Shilpa Darshan.                    |
| (8) | A. Foucher            | The Beginning of the Budhist Art   |
| (9) | A.K Coomaraswamy      | History of Indian & Indonesian Art |

**SEMESTER–IV**

**MUSIC (VOCAL)  
(THEORY)**

**Time: 3 Hours**

**Theory: 3 Periods per week**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. The paper setter will set **Eight** questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt **Five** questions in all.
5. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
6. Candidate can take Tabla subject along with Music Vocal or Music Inst.

**COURSE CONTENTS:**

1. Detailed knowledge of Devotional Music.
2. Definition and explanation of the following Musical Terms:  
Meend, Gamak, Khatka, Murki.
3. Formation of 484 Ragas from a Thata by Pt. Vyankata Mukhi in Chaturdandi Prakashika.
4. Detailed knowledge of Khyal Styles of Singing.
5. Detailed Study of Ten Ancient Rag –Lakshanas.
6. Description and notation of the following Ragas: Malkauns, Bihaag and Bhairavi.
7. Description and notation of the following Talas: Ada Chautal and Jhaptal.
8. Contribution and Life Sketches of the following musicians: Ustad Amir Khan, Pt. Jasraj, S.Sohan Singh.
9. Gayak ke Gun evam dosh.
10. Detailed knowledge of Folk singing styles used in Gurmat Sangeet.

**SEMESTER–IV**

**MUSIC (VOCAL)  
(PRACTICAL)**

**Time: 20 Minutes for each student**  
**Practical: 9 Periods per week**

**Marks: 50**

1. Ability to play five alankars on the Harmonium based on the Bhairvi Thata.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Malkauns, Bihaag and Bhairavi.
4. One Trana in any Prescribed Raga with proper singing style.
5. Ability to Sing National Anthem with Harmonium.
6. Ability to recite Jhap-Taal and Ada Chautal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Brief Knowledge of Non Detailed Ragas: Chandrakauns and Tilang and Bilas Khani Todi
8. Ability to play theka of Teen Taal on tabla.
9. One Cinematic song on Harmonium/any instrument

**Books Recommended:**

1. Bharatiya Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by PunjabiUniversity, Patiala.
4. Sangeet Vishard, Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan, Shanti Govardhan.
6. Hamare Sangeet Rattan, Sangeet Karyalaya, Hathras.
7. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
8. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
9. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

### SEMESTER-IV

#### MUSIC (INSTRUMENTAL) (THEORY)

**Time: 3 Hrs.**

**Theory: 3 periods per week**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

#### Instructions given to the examiners are as under:-

1. There should not be more than fifteen students in a batch for practical examination.
2. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
3. The paper setter will set eight questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions in all.
4. The External Examiner will set question paper for practical on the spot.
5. Candidate can take both subjects .i.e Instrumental music and Vocal music as elective subjects.
6. Candidate can take Tabla subject along with instrumental music or vocal music.

#### Course Contents:-

1. Historical development of Indian Music during medieval period i.e. from 15<sup>th</sup> to 18<sup>th</sup> century.
2. Formation of 484 Ragas from a Thata.
3. Brief knowledge of the following musical terms – Shuddha Rag, Chayalag Rag, Sankirna Rag, Ashraya & Janya Rag.
4. Life Sketch and Contribution of Ustad Ali Akbar Khan & Mushtak Ali Khan.
5. Importance of Adhvadashka Swara.
6. Description and notation of the prescribed Ragas: Malkauns, Sohni and Alahaiya Bilawal.
7. Brief knowledge of the following Ragas: Chandrakauns, Puriya and Bilawal.
8. Brief knowledge of the following Talas: Ada Chautal and Jhap Tal.
9. Importance of Instrumental Music in Gurmat Sangeet.
10. Detailed knowledge of Folk singing styles used in Gurmat Sangeet.

#### Books Recommended:-

1. Rag Parichay (Part 1,2,3) by H.C. Shrivastav.
2. Sangeet Shastar Darpan (Part I & II) by Shanti Govardhan.
3. Sangeet Visharad, Sangeet Karyala Hathras.
4. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
5. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh
6. Sangeet Subodh by Dr. Davinder Kaur.
7. Punjab ki Sangeet Parampara by Geeta Paintal.
8. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, Chandigarh.
9. Sangeet Roop by Dr., Davinder Kaur, Patiala.
10. Bhartiya Sangeet ka Itihas by Umesh Joshi.
11. Bhartiya Sangeet ke Vadhya, Dr. Lal Mani Mishra.
12. Nibandh Sangeet, Sangeet Karyala, Hathras.

**SEMESTER–IV****MUSIC (INSTRUMENTAL)****(PRACTICAL)****Time: 20 Minutes for each student****Marks: 50****Teaching: 9 periods per week.**

1. Ability to play ten Alankars on Sitar in the swaras of Bhairav Thaata.
2. One Masitkhani Gat in any of ragas prescribed in the Course. (Malkauns, Sohni and Alahaiya Bilawal).
3. One Razatkhani Gat in each of the prescribed raga with Toras and Jhaala.
4. Ability to recite on hand, the Talas, Ada Chautal and Jhap Tal in Ekgun & Dugun Layakarais.
5. Ability to play Ektal on Tabla.
6. Ability to play One Gat in Rupak Tala.
7. Brief Knowledge of the following Non–detailed Ragas: Chandrakauns, Puria and Bilawal.
8. Ability to sing a Merital song with Harmonium.

**SEMESTER- IV**

**INDIAN CLASSICAL DANCE  
(THEORY)**

**Time: 3 Hrs.**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Instructions for the Paper Setters/Examiners:-**

1. The paper setter will set eight questions. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions.

**COURSE CONTENTS:**

1. Study of Nritya, Nritya and Natya.
2. Study of different Gharanas of Kathak with their characteristics.
3. Study of Odissi Dance with its historical background, style costumes and music etc.
4. Knowledge of Bharamari and Utpalavan Bhedas according to Abhinaya Darpan.
5. Knowledge of the Folk Dances of Himachal Pradesh.
6. Biography and contribution of the following Kathak Gurus with their contributions in the field of dance.
  - (i) Birju Maharaj
  - (ii) Sunder Prasad
7. **Essay on the following topics:-**
  - (i) Dance and Religion.
  - (ii) The role of dance in Indian films.

**8. Notation of:**

**(i) Dhamar Taal (Matra-14)**

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran-1
- h) Chakardar Paran-1
- i) Kavita-1

**(ii) Roopak Taal (Matra-7)**

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran - 1
- h) Chakardar Paran-1
- i) Kavit-1

9. Discription and notation of the following Talas in Thah, Dugun, Tigonand Chaugun layakaries:

- (i) Dhamar Taal    (ii) Roopak Taal    (iii) Ada-choutaal.

10. Notation of Nagma in:

- (i) Dhamar Taal    (ii) Roopak Taal

**SEMESTER-IV**

**INDIAN CLASSICAL DANCE  
(PRACTICAL)**

**Time: 20 Minutes**

**Marks: 50**

**Instructions for examiner:** The Examiner will set practical paper on the spot.

**Instructions given to the examiners are as under:-**

1. There should not more than fifteen students in a batch for practical examination.
2. Harmonium will be allowed as accompaniment to perform Nagma.
3. Separate practical paper should be set for each class from practical Paper-'B' of prescribed syllabus on the spot.

**1. Dhamar Taal (Matra-14)**

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran-1
- h) Chakardar Paran-1
- i) Kavita-1

**2. Roopak Taal (Matra-7)**

- a) Tatkar in Thah, Dugun & Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Salami-1
- f) Tora-2
- g) Paran-1
- h) Chakardar Paran-1
- i) Kavita-1

3. Practical demonstration of the Holi Leela Gat Bhava.
4. Padhant of all the Practical material mentioned above.
5. Ability to demonstrate Theka of Dhamar Taal, Roopak Taal and Ada - choutaal by hand in Single, Dugun and Chaugun layakaries.
6. Practical Dance demonstration of any Cinematic song based on classical dance.
7. Ability to play the theka of Roopak Taal on Tabla.
8. Ability to sing a cinematic song with Harmonium.

**Books Recommended:**

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.
2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers, New Delhi, 2006.
3. Atihasik Pripeksh Mein Kathak Nritya, Maya Taak, Knishka Publishers, New Delhi, 2005.
4. Nibandh Sangeet, Laxmi Narayan Garg, Sangeet Karyalaya, Hathras, 2004.
5. Kathak Nritya Shiksha Part-1, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP).

### SEMESTER-IV

#### TABLA (THEORY)

**Time: 3 Hours**  
**Theory 3 periods per week.**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examinations.
2. Harmonium will be allowed as accompaniment to perform the Nagma.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for practical paper should also be sent.
4. The paper-setter will set eight questions. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate will be asked to attempt five questions.
5. Candidate can take Tabla subject with Vocal or Instrumental Music (Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai, Rabab, Saranda, Taus, Santoor and any other Swar Vadhya to be played on the basis of Indian Classical Music).
  1. Define and Explain the following terms :
    - a) Rella
    - b) Laggi
    - c) Peshkar
    - d) Chakardar Paran
  2. Detail knowledge of Gharana of Tabla & Pakhawaj :
    - a) Lakhnow
    - b) Banaras
    - c) Farukhabad
  3. Life sketch :
    - a) Ustad Habibbu-din-Khan
    - b) Pt. Pagal Das Pakhawaji
    - c) Pt. Chatur Lal
  4. Write an essay on the place of Tabla in Gazal Gayaki.
  5. Notation and description of :
    - a) Ada Chautal –One Peshkar, Two Kayda with four Palta each, Two Tukra, One paran, One Rella.
    - b) Deepchandi Vilambit – One Rella. Three Laggis, Two Tihaai.
  6. Impacts of Globalization in promoting Tabla.
  7. Notation of above mention talas in Dugun, Chaugun layakari's.
  8. Detailed knowledge of Ravinder Sangeet Taal system.
  9. Impact of Tabla on human behaviour.

**SEMESTER-IV****TABLA  
(PRACTICAL)**

**Time: 20 Minutes for each student**  
**Teaching 9 Periods per week.**

**Marks: 50**

1. Tala Prescribed:
  - a) Ada Chautal
  - b) Deepchandi
2. Ada Chautal –One Peshkar, Two Kayda with four Palta each, Two Tukra, One Paran, One Rella.
3. Deepchandi Vilambit – One Rella. Three Laggis, Two Tihaai.
4. Ability to play Nagma on Harmonium in Ada Chautal.
5. Ability to play Theka of Jhumra and Jaital.
6. Practice of playing the above Taals with Vocal and Instrumental performance.
7. Tuning of Tabla.
8. Ability to sing any folk song of Punjab with Harmonium.

**Books Recommended:**

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Mishra Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhyas: Lal Mani Mishra, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vashishath, Sangeet Karyalaya Hathras, 1994.
6. Tal Parichay Part –I to IV, Harish Chandra Srivastav, Sangeet Karyalaya, Hathras.
7. Tal Prakash, Bhagwat Saran Sharma, Sangeet Karyalaya, Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita, Chitragupta, Radha Publication, New Delhi, 1992.

**SEMESTER-IV  
COMPUTER SCIENCE**

**DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++  
(THEORY)**

**Time: 3 Hours  
4 Hours/week**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT-I**

**Data Structure:** Introduction to elementary Data Organization, Common Operation on Data Structures, Algorithm Complexity, Big O Notation, Time-Space Trade off between Algorithm.

**Arrays:** Array Defined, Representing Arrays in memory, Various operations on Linear arrays, Multi Dimensional arrays.

**Linked Lists:** Types of Linked Lists, representing linked list in memory, advantages of using linked lists over arrays, Various operations of linked lists.

**UNIT-II**

**Stacks:** Description of STACK structure, Implementation of stack, using arrays and linked lists, application of stack-converting Arithmetic expression from infix notational to polish and their subsequent evaluation, quicksort technique to sort an array.

**Queues:** Description of queue structure, Implementation of queue using arrays and linked lists, description or priorities of queues, dequeues.

**Sorting and Searching :** Sorting Algorithms, bubble sort, selection sort, insertion sort, quick sort, merge sort, heap sort, searching Algorithms, linear search and binary search.

### UNIT-III

**Object Oriented Programming:** Objects & Classes, Constructor & Destructor, Operator Overloading, Overloading unary operators, Overloading binary operators, Data conversion, Pitfalls of operator overloading and conversion, Inheritance, Derived class and base, Derived class constructor. Overloading member functions, Inheritance in the English distance class, class hierarchies, Public & Private inheritance, Level of inheritance, Polymorphism, problems with single inheritance, multiple inheritance

#### References:

1. Seymour Lipschutz, *Theory and Problems of Data Structures*.
2. *Schaum's Outline Series*, McGraw Hill Company.
3. Tanenbaum, *Data Structure Using C++*

**SEMESTER-IV  
COMPUTER SCIENCE**

**DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++ LAB  
(PRACTICAL)**

**2 Hours/week**

**Marks: 25**

Practical based on Data Structures & Programming Language Using C++

**SEMESTER-IV**  
**INFORMATION TECHNOLOGY (VOCATIONAL)**

**DATA BASE MANAGEMENT SYSTEM**  
**(THEORY)**

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT-I**

Indexing Techniques, Primary, Secondary, Clustering, B Trees, B+Trees, Hashing (Extendible, Dynamic, and linear) Database Architectures and Data Models, Network, Hierarchical, and Relational, Object-Oriented, Relational Model; Relations, Relational operators and integrity constraints.

**UNIT-II**

Relational Algebra and SQL, Query Optimisation, DDL, DML, DCL.  
Database Design: ER Modeling, mapping to relational scheme. Normalisation - 1st, 2nd, 3rd, BCNF - Concurrency Control Lost Update, Temporary Update, Locking Mechanisms, Binary Locks, Shared and Exclusive Locks, 2 Phase Locking protocol, Timestamping approaches.

**UNIT-III**

Recovery Mechanism Motivations, Transactions, System Log, Commit Points, Checkpoints, immediate & Deferred Update Protocols Shadow paging. Distributed Databases Introduction, Fragmentation policies, Object Oriented Databases.

**References:**

1. Database System Concepts by Abraham & Henry F. Korth, McGraw Hill, Edition, 2006.
2. Introduction to Database Systems by Navathe, 2nd Edition, Pearson Publication.

100

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester-IV) (Session 2018-19)  
(Faculty of Engineering & Technology)

**SEMESTER-IV**

**INFORMATION TECHNOLOGY (VOCATIONAL)**

**DATA BASE MANAGEMENT SYSTEM  
(PRACTICAL)**

**2 Hours/week**

**Marks: 25**

Practical based on Data Base Management System

**SEMESTER-IV**  
**COMPUTER MAINTENANCE (VOCATIONAL)**

**PC MAINTENANCE & TROUBLESHOOTING**  
**(THEORY)**

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT-I**

**Troubleshooting General PC Problems:** Introduction, General Troubleshooting rules, Common Problems & Solutions, Preventive Maintenance.

**BIOS:** Typical Motherboard BIOS, BIOS Features, BIOS & Boot Sequences, BIOS Shortcoming & Compatible Issues, BIOS Troubleshooting, BIOS Upgrades.

**UNIT-II**

**Hard Disk:** Introduction, Disk Basics, Disk Performance & Characteristics, Drive Construction, Drive Testing & troubleshooting.

**Motherboard & Buses:** Introduction, Motherboard Components, Expansion Slots system, Bus Functions & Features. Upgrading & Troubleshooting Motherboard, General Bus Troubleshooting.

**UNIT-III**

**Basic Memory Concepts:** Introduction, Installing Memories, Upgrade Options & Strategies, Replacing Memories with Higher Capacity. Troubleshooting Memory.

**Printers:** Printer Technology, How Printer Works, Attaching Printer, Installing Printer Drivers, Preventive Maintenance, Common Printer Problems & Solution.

**Error Code:** Beep Code, Post Code, Post Reader Card.

**References:**

1. Upgrading & Repairing PCs: Muller, Prentice Hall, 10th Edition, 2000.
2. Complete PC Upgrade & Maintenance Guide: Mark Minasi, BPB Publishers, 15th Edition, 2004.

**SEMESTER-IV**  
**COMPUTER MAINTENANCE (VOCATIONAL)**

**(PRACTICAL)**

**2 Hours/week**

**Marks: 25**

**List of Practical Based on PC Maintenance & Troubleshooting**

- 1 Introduction and knowledge of components of PC.
- 2 To study the troubleshooting Beep Codes.
- 3 Detection of display card & its replacement.
- 4 Delection of RAM failures and its replacement.
- 5 Detection of Motherboard failure and its repair.
- 6 Up gradation of PC.
- 7 Troubleshooting Keyboard and Mouse.

**SEMESTER-IV**  
**COMPUTER APPLICATION (VOCATIONAL)**

**RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE**  
**(THEORY)**

**Time: 3 Hours**  
**4 Hours/week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

- (i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
- (iii) The students can use only Non Programmable & Non Storage Type Calculator.

**UNIT-I**

**Relational Data Base Management System & ORACLE**

- 1 Definition of 3 GL and 4 GL languages.
- 2 Definition of CODD's Rules.
- 3 Introduction to RDBMS and Oracle-Advantages and Limitations over DBMS.
  - a) Normalization of Data : First, Second and Third Normal form
  - b) Database Models - Hierarchical, Network, Relational
  - c) Features of SQL Compatibility, Portability
  - d) Important components (Database Manager, DDL., DML., DCL., query processor. (Data Dictionary);
  - e) Introduction to SQL Plus - Definition.

**4. SQL Operators**

=I=<>><>=<= [NOT]BETWEEN.....AND.....  
[NOT]IN[Text]NOT]like,IS[NOT][NULL,NOT,AND,OR

**5. Data Types**

Char, numbers, date long, raw, long raw

**6. DDL Commands of SQL**

- Create Tables
- Alter Table, view
- Drop Table
- Create View-As selected from, where
- Rename
- Create Index

## UNIT-II

### 1. Data Manipulation Language

1. Select
  - Select distinct
  - Select from where
  - Select from where order by
  - Select group by clause
  - Select Group by having clause
2. Insert Into
3. Update Statement
4. Delete Statement

### 2. Data Control Language

- Roll back
- Revoke
- Grant

### 3. Sub Query Definition with 2 Levels

### 4. Aggregate Functions

Sum, Avg, max, min, count, stddev, variance

### 5. Character Functions

Lower, Upper, Length, Substr, RPAD, LPAS

### 6. Arithmetic Functions

Round, Trunc, Sqrt, Mod, Abs, Sine

### 7. Date and Time Functions and Other Miscellaneous Functions

(Add-months, Month-between, NVL, Translate, field concatenation, decode)

### 8. Conversion Functions (to-char, to-number, to-date)

### 9. Substitution Variables (&, &&)

## UNIT-III

### 1. Reporting Using SQL Plus

1. Specifying column heading
2. Formatting columns
3. Char formats
4. Break
5. Inserting spaces when the break value changes
6. Inserting spaces after every row.
7. Break on multiple columns with different spacing
8. Compute
9. T Title
10. B Title
11. Page size line size, pause.

## 2. Introduction to PL/SQL

1. Relationship between SQL & PL/SQL
2. Advantages of PL/SQL
3. PL/SQL block structure
4. Valuable and Constant declaration
5. Declaration using attributes %type attribute If elsif ends if statement

### Books Recommended:

- Introduction to Data Base System by C.J. Date.
- Data Base Managemet System by B.C. Desai.
- Data Base Concept by Korth.
- Simplifield Approach to by DBMS Kalyani Publications.
- Oracle :- Developer 2000 by Iven Bayross.
- Data base System Concepts & Oracle (SQL/PIS Q)- AP Publications.

**SEMESTER-IV**  
**COMPUTER APPLICATION (VOCATIONAL)**

**RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE**  
**(PRACTICAL)**

**2 Hours/week**

**Marks: 25**

Practical based on **Relational Data Base Management System & ORACLE**

**SEMESTER–IV**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**Paper–I: WEB TECHNOLOGY**

**Time: 3 Hrs.**

**Max. Marks: 75**

**Note:**

- (i) The paper setter is required to set eight questions in all and the candidates will be required to attempt any five questions out of these eight questions. All questions will carry equal marks.
- (ii) The students can use only Non–programmable & Non–storage type calculator.

**UNIT–I**

**Introduction to Web Development**

Webpage, Website, Static Website, Dynamic Website, Web Servers, Web Browsers

**Introduction to HTML/DHTML**

HTML Basics, HTML Elements (Tags), Structure of HTML Program, Attributes, Headings, Paragraphs, Formatting, Links, Images, Tables, Lists, Forms, Frames, Where to put Tables, Lists, Images, Forms, CSS in DHTML, Implementation of WebPages using CSS.

**UNIT–II**

**Introduction to JavaScript:**

How & Where to put the JavaScript Code, JavaScript Statements, Comments, Variables, Operators, Control Statements, Loops, Popup Boxes, Functions.

**UNIT–III**

**Introduction to Dreamweaver**

Understanding Workspace Layout, Managing Websites, Creating a Website, Using Dreamweaver Templates, Adding New WebPages, Text and Page Format, Inserting Tables, Lists, Images, Adding Links.

**UNIT–IV**

**Purchasing a Domain Name & Web Space**

Domain Name & Web Space, Getting a Domain Name & Web Space (Purchase or Free), Uploading the Website to Remote Server.

**Suggested Readings / Books:-**

1. Web Enabled Commercial Application Development HTML (Ivan Bayross)
2. JavaScript, a Beginner's Guide John Pollock, Third Edition
3. Dreamweaver CS5 for Dummies Janine C. Warner, Paperback Edition
4. The Essential Guide to Dreamweaver CS4 David Powers

**SEMESTER-IV**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**Paper-I: Lab – I: Web Technology**

**Time: 3 Hrs.**

**Max. Marks: 25**

Practical based on Web Technology

- **Web Technology:** HTML, DHTML, Dreamweaver

**SEMESTER-IV****AUTOMOBILE MAINTENANCE (VOCATIONAL)  
(THEORY)****Time: 3 Hours****Marks: 60****Periods per week: 6 Hrs.**

**Section-A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks i.e. (2 marks); total weightage of the section being 10 Marks.

**Section-B:** It will consist of short answer questions with answer to each question upto 2 pages in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 4 marks; total weightage of the section being 20 marks.

**Section-C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry 15 marks; total weightage of the section being 30 marks.

**UNIT-I**

**Engines:** Introduction, Classification of automobile engines, Engine cycle, Number of strokes, With respect to fuels use, Number and arrangement of cylinders, Classification based on valve arrangements, Classification based on type of cooling, Classification based on type of valve, Special type engines, Square engines, Fuel cell, Electric vehicles, Engine position.

**UNIT-II**

**Ignition Systems:** No spark, Spark at some wires, Intermittent spark, Weak spark, servicing ignition system. Piston Assembly, Piston rings, Analysis of piston rings, piston pins, Materials. Engine Service Crank Shaft and Cylinder Blocks: Review of design, Analysis of Crank shaft for strength, Surface hardening of crank shaft and their materials.

**UNIT-III**

**Clutch Operation:** Clutch, Requirement of clutch, Types of Clutch, Friction clutches, Clutch components, Friction materials, Clutch lining materials, Bonding materials, Fluid coupling, Torque transmission, Characteristics of the fluid flywheel, Advantages of fluid flywheel, Clutch troubleshooting, Fluid flywheel troubleshooting.

**Diesel Engine Service:** Fuel pump tests, Fuel Delivery, Pressure, Stroke, Carburetor test and adjustments, Fuel level, Float level, Adjustment.

**SEMESTER-IV****AUTOMOBILE MAINTENANCE (VOCATIONAL)****LAB-II (PRACTICAL)****Time: 3 Hours****Marks: 40****Periods per week: Practical: 4 Hrs.****Practicals: -**

1. Engine Piston and Rings Fitting
2. Clutch Dismantling and Assembling
3. Clutch Fitting with Engine
4. Cut out opening and fitting with Engine

**References:**

1. Basic Automobile Engineering (Punjabi Edition) Written by C.P. Nakra, published by Dhanpat Rai and Sons, Jalandhar, Delhi.
2. Royal Basic Automobile Engineering Written by R.K.Kalia. (Punjabi Edition).

**SEMESTER-IV****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER-G (THEORY)**

**Time: 3 Hours**  
**Teaching Hours: 6**

**Marks: 30**

**Instructions for the Paper Setters:**

**Section-A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section-B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section-C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT-I**

**Domestic Refrigerators:** Introduction, Construction & Operational features of domestic Refrigerators. Defrosting Automatic Pressure & Electric Defrosting etc.

**UNIT-II**

**Cold Storages:** Introduction, Construction, Sealing & Insulation of Cold Storages. Refrigeration, Requirements for various food items.

**UNIT-III**

**Water Coolers:** Storage & Pressure type Water Coolers and their filtering, Constructional features. Insulation Bottle Coolers, Ice Creams.

**SEMESTER-IV****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER-H (THEORY)**

**Time: 3 Hours**  
**Teaching Hours: 6**

**Marks: 30**

**Instructions for the Paper Setters:**

**Section-A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section-B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section-C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT-I**

**Air Conditioning Machines & Components:** Types of cooling. Humidification & Dehumidification coils, heating coils. Fans & blowers, filters & dampers.

**UNIT-II**

**Duct Construction:** Built systems. Loop perimeter, Radial Perimeter & Exposed Plenum Duct System. Water Pumps: Vertical Types & Horizontal Type.

**UNIT-III**

**Evaporators:** Introduction, Types of Evaporator Flooded Type Evaporator. Dry Expansion type Evaporator Baudelot cooler Bare Tube, Plate Surface, Finned Evaporator, Their construction & Operational features.

**SEMESTER-IV****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)****PRACTICAL: LAB-II****Time: 2 Hours****Marks: 40****Period Per week Practical: 4****List of Experiments:**

1. To Study a cooling Tower.
2. To Study a desert cooler & Pump used for this type.
3. Gas charging in the Refrigerator System & Testing for leakage.
4. To test chek the capacitors, Relays, automatic Value, Solenoid value, high & low pressure cut off etc.
5. To find the C.O.P. of a water cooler.
6. To find the C.O.P. of an Ammonia Ice Plant.

**List of Books Recommended:**

<b>Name of Book</b>	<b>Author</b>	<b>Publisher</b>
Refrigeration & Air Conditioning	S.C.Arora	Dhanpat Rai
Refrigeration & Air Conditioning	Dowkundwar Khurmi	Katson Publication
Refrigeration & Air Conditioning	Sarao, Gaabi Singh	Satya Prakashan.

**SEMESTER-IV**

**RELIGIOUS STUDIES**  
(ਧਰਮ ਅਧਿਐਨ)

(ਮਧਕਾਲੀਨ ਅਤੇ ਆਧੁਨਿਕ ਧਾਰਮਿਕ ਲਹਿਰਾਂ)

ਸਮਾਂ 3 ਘੰਟੇ  
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100  
ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ:**

ਪੇਪਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ: ਓ, ਅ, ਏ, ਸ, ਅਤੇ ਹ। ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ 2-2 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੋਵੇਗਾ ਅਤੇ ਹਰ ਇਕ ਪ੍ਰਸ਼ਨ ਦੇ 15 ਅੰਕ ਹੋਣਗੇ। ਭਾਗ ਹ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 4-4 ਅੰਕ ਹੋਣਗੇ।

**ਪ੍ਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ:**

ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ ਕੇਵਲ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੈ ਅਤੇ ਭਾਗ ਹ ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ ਹਨ।

**ਭਾਗ(ਓ) : ਭਗਤੀ ਲਹਿਰ**

1. ਭਗਤੀ ਲਹਿਰ: ਉਤਪਤੀ ਤੇ ਵਿਕਾਸ
2. ਭਗਤੀ ਲਹਿਰ ਦੇ ਪ੍ਰਮੁੱਖ ਭਗਤਾਂ ਦੇ ਜੀਵਨ: ਨਾਮਦੇਵ, ਕਬੀਰ, ਰਵਿਦਾਸ
3. ਉੱਤਰੀ ਭਾਰਤ ਦੀ ਭਗਤੀ ਪਰੰਪਰਾ: ਨਿਰਗੁਣ ਅਤੇ ਸਰਗੁਣ

**ਭਾਗ(ਅ) : ਸੂਫੀ ਮੱਤ**

1. ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ: ਆਰੰਭ, ਵਿਕਾਸ ਅਤੇ ਇਸਲਾਮਿਕ ਪਿਛੋਕੜ
2. ਸੂਫੀ ਮੱਤ: ਪ੍ਰਮੁੱਖ ਸਿਧਾਂਤ
3. ਚਿਸ਼ਤੀ ਸਿਲਸਿਲਾ ਤੇ ਬਾਬਾ ਫਰੀਦ: ਜੀਵਨ ਤੇ ਸਿੱਖਿਆਵਾਂ

**ਭਾਗ(ੲ) : ਪ੍ਰਮੁੱਖ ਧਰਮ ਪ੍ਰਵਰਤਕ**

1. ਚੈਤੰਨਯ ਮਹਾਂਪ੍ਰਭੂ
2. ਸ਼ੰਕਰ ਦੇਵ
3. ਮੀਰਾਂ ਬਾਈ

**ਭਾਗ(ਸ) : ਉਨੀਵੀਂ ਸਦੀ ਦੀਆਂ ਪ੍ਰਮੁੱਖ ਧਾਰਮਿਕ ਲਹਿਰਾਂ**

1. ਰਾਮਾ ਕ੍ਰਿਸ਼ਨ ਮਿਸ਼ਨ: ਆਰੰਭ, ਵਿਕਾਸ ਤੇ ਯੋਗਦਾਨ
2. ਬ੍ਰਹਮੋ ਸਮਾਜ: ਆਰੰਭ, ਵਿਕਾਸ ਅਤੇ ਯੋਗਦਾਨ
3. ਆਰੀਆ ਸਮਾਜ: ਆਰੰਭ, ਵਿਕਾਸ ਤੇ ਯੋਗਦਾਨ

**ਭਾਗ(ਹ) ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ**

**ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:**

**ENGLISH:**

1. Bahadur Mal, *Dayanand and Study in Hinduism*, Sadhu Ashram, Hoshiarpur, 1962.
2. Darshan Singh, *Indian Bhakti Tradition and Sikh Gurus*, Lyall Book Depot, Bhopal, 1968.
3. Farquhar, J.N., *Modern Religious Movements in India*, Munshi Ram, Manohar Lal, Oriental Publishers, Delhi, 1967.
4. Ganda Singh (Ed), *Punjab Past and Present*, (Singh Sabha Issue) Punjabi University, Patiala 1973.
5. Mahadevan, T.M.P., *Ten Saints of India*, Bharti Vidya Bhawan, Bombay, 1976.

**Punjabi:**

1. ਗੁਰਸ਼ਰਨਜੀਤ ਸਿੰਘ, *ਗੁਰੂ ਨਾਨਕ ਬਾਣੀ ਵਿਚਲੀ ਨੈਤਿਕਤਾ ਦਾ ਅਜੋਕਾ ਪ੍ਰਸੰਗ*, ਭਾਈ ਚਤਰ ਸਿੰਘ ਜੀਵਨ ਸਿੰਘ, ਅੰਮ੍ਰਿਤਸਰ, 2007.
2. ਗੁਲਵੰਤ ਸਿੰਘ, *ਇਸਲਾਮ ਤੇ ਸੂਫੀਵਾਦ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1994.
3. ਤਾਰਨ ਸਿੰਘ, ਬਲਬੀਰ ਕੌਰ, *ਸ਼ੇਖ ਫਰੀਦ-ਜੀਵਨੀ ਤੇ ਰਚਨਾ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1982.
4. ਮਨਮੋਹਨ ਸਿੰਘ, *ਗੁਰੂ ਨਾਨਕ ਅਤੇ ਭਗਤੀ ਅੰਦੋਲਨ*, ਮਨਦੀਪ ਪ੍ਰਕਾਸ਼ਨ, ਨਵੀਂ ਦਿੱਲੀ, 1970.
5. -----, *ਭਗਤੀ ਸਿਧਾਂਤ ਦੇ ਆਧਾਰ ਸ੍ਰੋਤ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1991.
6. ਲਾਲ ਸਿੰਘ, *ਭਗਤੀ ਕਾਵਿ*, ਭਾਸ਼ਾ ਵਿਭਾਗ ਪੰਜਾਬ, ਪਟਿਆਲਾ, 1970.

**Hindi:**

1. ਚਤੁਰਵੇਦੀ, ਪਰਸੂਰਾਮ, *ਉੱਤਰੀ ਭਾਰਤ ਕੀ ਸੰਤ ਪਰੰਪਰਾ*, ਭਾਰਤੀ ਪੁਸਤਕ, ਲਹਿਰ ਪ੍ਰੈਸ, ਇਲਾਹਾਬਾਦ, 1964.
2. ਪੰਕਜ, ਪ੍ਰਾਣਨਾਥ, *ਅਭਿਨਾਸੀ ਗਿਰਧਰ ਕੀ ਮੀਰਾ*, ਰੂਪਾ ਐਂਡ ਕੰਪਨੀ, ਨਵੀਂ ਦਿੱਲੀ, 2001.
3. ਪ੍ਰਭੂਪਾਦ, ਸਵਾਮੀ, *ਭਗਵਾਨ ਸ੍ਰੀ ਚੈਤੰਨਯ ਮਹਾਂਪ੍ਰਭੂ*, ਭਗਤੋਂਵੇਦਾਂਤ ਬੁੱਕ ਟਰੱਸਟ, ਮੁੰਬਈ, 2002.

**SEMESTER-IV**

**PHILOSOPHY**

**INDUCTIVE LOGIC AND ENVIRONMENTAL ETHICS (OPT. I)  
(ONLY FOR REGULAR STUDENTS)**

**Lectures to be delivered: 6+4=10 per week**

**Time: 3 Hours**

**Pass Marks: 35%**

**Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

**Note: Instructions for the Paper-Setters:**

The question paper will consist of five Sections: A, B, C, D & E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15 marks each. Section E will consist of 10 short answer type questions which will cover the entire syllabus uniformly and will carry 20 marks. Each short answer type question will be of 2 marks. There will be a separate paper for practical related to the subject. For it there will be four lectures in a week besides the theory lectures. The focus of these lectures would be on the applied aspect of the course and the students will prepare a presentation on the basis of their observations of specific problems related with Environmental Ethics. A teacher from the affiliated colleges will evaluate the Students on the basis of presentation and the Viva-Voce before the theory examination and will award the marks out of 20 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from the sections A, B, C & D of the question paper and the entire section E

**Section-A**

1. Induction: Definition and Characteristics of Induction; Types of Induction (simple enumeration, scientific induction and analogy) Difference between deduction and induction.
2. Causation: Nature of Cause, Plurality of Causes (Mill)
3. Nature and Conditions of Valid Hypothesis and uses of Hypothesis.

**Section-B**

4. Indian Logic: Definition, Nature and Scope.
5. Nyaya Syllogism: Difference between Nyaya Syllogism and Aristotelian Syllogism
6. Anumana in Nyaya Darshan: Kinds, Panchavayava, Vyapti and Hetvabhasa.

**Section-C**

7. Environmental Ethics: Nature and Scope
8. Ecology: Definition, Scope and its relation to Ethics.
9. Man-Nature Relationship (Indian Tradition).

### Section-D

10. Population
11. Pollution
12. Nuclear Threats

### Section-E

#### Ten Short answer type questions.

#### Recommended Readings:

##### English Books

1. Attfield, R., *Environmental Philosophy: Principles and Prospects*, Aldershot, Avebury, 1994.
2. Barlingay, S.S., *A Modern Introduction to Indian Logic*, National Publishing House, Delhi, 1965.
3. Chahal, Surjit Kaur, *Environment and The Moral Life, Towards A New Paradigm*, Ashish Publishing House, New Delhi, 1994.
4. Cohen and Negal, *Introduction to Logic and Scientific Methods*, Allied Publishers, Bombay, 1976.
5. Dreyer, Oleg, *Ecological Problems of Developing Countries*, Ajanta Publications, Delhi, 1989.
6. Facione, Peter A., *Logic and Logical Thinking, A Modular Approach*, McGraw Hill, New York, 1978.

##### Punjabi Books

1. ਤ੍ਰਿਲੋਚਨ ਸਿੰਘ, ਵਾਤਾਵਰਣ : ਦਰਪੇਸ਼ ਸਮੱਸਿਆਵਾਂ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1995.
2. ਨਿਰਾਕਾਰੀ, ਆਰ.ਡੀ., ਉਚੇਰਾ ਤਰਕ ਸ਼ਾਸਤਰ, ਪਬਲੀਕੇਸ਼ਨਜ਼ ਬਿਊਰੋ, ਪਟਿਆਲਾ।
3. ਵਜ਼ੀਰ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ, ਤਰਕ ਗਿਆਨ ਦੀ ਜਾਣ-ਪਛਾਣ : (ਭਾਗ-2) (ਆਗਮਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

##### Hindi Books

1. ਤਿਵਾਰੀ, ਕੇਦਾਰਨਾਥ, ਭਾਰਤੀ ਤਰਕਸ਼ਾਸਤਰ ਪਰਿਚਯ.

**SEMESTER-IV**  
**PHILOSOPHY**  
**INDUCTIVE LOGIC AND SOCIAL PHILOSOPHY (OPT. II)**  
**(ONLY FOR PRIVATE STUDENTS)**

**Time: 3 Hours**

**Max. Marks: 100**

**Lecture to be delivered: 6 per week**

**Pass Marks: 35%**

**Note: Instructions for the Paper Setters:**

The Question paper will consist of five Sections: A, B, C, D & E. Sections A, B, C, D and E will have two questions from the respective sections of the syllabus and will carry 15 marks each. Section E will consist of 10 short answer type questions which will cover the entire syllabus uniformly and will carry 40 marks in all, each short answer type question carrying 4 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from the sections A, B, C & D of the question paper and the entire section E.

**Section-A**

1. Induction: Definition and Characteristics of Induction; Types of Induction (simple enumeration, scientific induction and analogy); Difference between deduction and induction.
2. Causation : Nature of Cause, Plurality of Causes (Mill)
3. Nature and Conditions of a Valid Hypothesis and uses of Hypothesis.

**Section-B**

4. Indian Logic: Definition, Nature and Scope.
5. Nyaya Syllogism: Difference between Nyaya Syllogism and Aristotelian Syllogism.
6. Anumana in Nyaya Darshan: Kinds, Panchavayava, Vyapti and Hetvabhasa.

**Section-C**

7. Major Social Theories : Socialism and Democracy
8. Gandhism : Swaraj and Sarvodaya
9. Social Philosophy of Sikhism: Justice and Equality

**Section-D**

10. Social Problems: Corruption, Gender Discrimination Dowry and Divorce and
11. Crime: Meaning, Nature and Causes of Crime
12. Punishment: Theories of Punishment and Capital Punishment

**Section-E**

**Ten Short answer type questions.**

### Recommended Readings:

#### English Books

1. Barlingay, S.S., *A Modern Introduction to Indian Logic*, National Publishing House, Delhi, 1965.
2. Cohen and Negal, *Introduction to Logic and Scientific Methods*, Allied Publishers, Bombay, 1976.
3. Facione, Peter A., *Logic and Logical Thinking, A Modular Approach*, McGraw Hill, New York, 1978.
4. Glyn Richards, *The Philosophy of Gandhi A Study of his Basic Ideas*, Taylor & Francis e-Library, London, 2005.
5. Mackenz, J.S., *An Outline of Social Philosophy*, Allen & Unwin, 1918.
6. Satish Chandre Vidya Bhusan, *History of Indian Logic*. Motilal Banarsidass. Delhi, 2006.

#### Punjabi Books

1. ਅਵਤਾਰ ਸਿੰਘ, ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ : ਸਮਾਜ ਪੱਖੀ ਵਿਸ਼ਲੇਸ਼ਣ, ਅੰਤਰਨਾਦ ਪ੍ਰਕਾਸ਼ਨ, ਪਟਿਆਲਾ।
2. ਜੱਜ, ਪਰਮਜੀਤ ਸਿੰਘ, ਸਮਾਜ ਵਿਗਿਆਨ ਦ੍ਰਿਸ਼ਟੀਕੋਣ ਤੇ ਸਿਧਾਂਤ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
3. ਨਿਰਾਕਾਰੀ, ਆਰ.ਡੀ., ਉਚੇਰਾ ਤਰਕ ਸ਼ਾਸਤਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪਟਿਆਲਾ।
4. ਵਜ਼ੀਰ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ, ਤਰਕ ਗਿਆਨ ਦੀ ਜਾਣ-ਪਛਾਣ : (ਭਾਗ-2) (ਆਗਮਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਸ਼ਰਮਾ, ਨਰਪਿੰਦਰ, ਸਮਾਜ, ਸਮਾਜੀਕਰਨ ਤੇ ਸਮਾਜ ਵਿਗਿਆਨ, ਉਡਾਨ ਪਬਲੀਕੇਸ਼ਨਜ਼, ਮਾਨਸਾ।

#### Hindi Books

1. ਹਰੀ ਸਿੰਘ, ਸਮਾਜ ਦਰਸ਼ਨ ਕੀ ਰੂਪਰੇਖਾ.
2. ਪਾਂਡੇ, ਐਸ.ਐਲ., ਸਮਾਜ ਦਰਸ਼ਨ ਕੀ ਏਕ ਪ੍ਰਣਾਲੀ.
3. ਤਿਵਾਰੀ, ਕੇਦਾਰਨਾਥ, ਭਾਰਤੀ ਤਰਕਸ਼ਾਸਤਰ ਪਰਿਚਯ.

**ZOOLOGY**  
**SEMESTER-IV**

Paper	Maximum Marks		Hours of Teaching	
	Theory Marks	Practical Marks	Theory	Practical
			<b>Credit Hrs.</b>	<b>per Week</b>
			<b>(60 min. each)</b>	
ZOO-IVA (Biochemistry)	35	—	3 Hrs	—
ZOO-IVB (Animal Physiology)	35	—	3 Hrs	—
PRACTICAL-IV (RELATED TO ZOO-IVA and ZOO-IVB)	—	30	—	4½ Hrs

**SEMESTER-IV****ZOOLOGY****ZOO-IVA: Biochemistry  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I****Biochemistry and its scope****Classification and functions of:**

Carbohydrates

Proteins

Lipids

Nucleic acids

**UNIT-II****Enzymes:**

Nature and their classification

Coenzymes.

**Lipid Metabolism:**

B-Oxidation of fatty acid

Ketosis

**UNIT-III****Carbohydrate Metabolism:**

Glycolysis

Tricarboxylic acid cycle

Hexose monophosphate shunt

Glycogenesis

Glycogenolysis

Gluconeogenesis

Oxidative Phosphorylation

**UNIT-IV****Protein Metabolism:**

Metabolism of amino acids

Oxidative deamination

Transamination

Decarboxylation

Hydrolysis of proteins

Ornithine cycle

**Suggested Reading Material:-**

1. Conn, E.E., Stump. P.K. Bruening, S. and Doi R.H. (1987), Outlines of Biochemistry (5th ed), John Wiley and Sons Inc., New York.
2. Fischer, J. and Arriold, J.R.P. (2001). Instant notes in Chemistry for Biologists, Viva Books Pvt. Ltd.
3. Harper, H.A. (2000): Harper's Biochemistry (25<sup>th</sup> ed).
4. Holde, K.E.V., Johnson, W.C. and Shing, P. (1998). Principles of Physical Biochemistry Prentice Hall, Inc., USA.
5. Lehninger, A (2000). Principles of Biochemistry, (3<sup>rd</sup> ed).
6. Morris, H. Best, L.R., Pattison, S., Arerna, S. (2001). Introduction to General Organic Biochemistry, (7<sup>th</sup> ed), Wadsworth Group.
7. Rawn, J.D. (1989), Biochemistry, Niel Patterson Publication U.S.A. North Carolina.
8. Robert, K., Murray, Mayes Daryl, K. Granner, Victor, W., Woodwell (1990), Harper's Biochemistry, 22nd Edition, Prentice Hall International Inc.
9. Sheehon, D (2000). Physical Biochemistry: Principles and Applications – John Wiley & Sons Ltd., England.
10. Stryer, L. (1988). Biochemistry (3rd ed), San Francisco W.H. Freeman.

**SEMESTER-IV****ZOOLOGY****ZOO-IV B: Animal Physiology  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I**

**Digestion:** Digestion of dietary constituents, regulation of digestive processes and absorption. Extra and intra cellular digestion, enzymatic digestion and symbiotic digestion.

**Respiration:** Transport of O<sub>2</sub> and CO<sub>2</sub>, Oxygen dissociation curve of haemoglobin, Bohr effect, chloride (-) shift, Haldane effect and control of breathing.

**UNIT-II**

**Heart:** Origin and regulation of heart beat, cardiac cycle, electrocardiogram, cardiac output, Blood pressure and micro-circulation.

**Blood:** Composition and functions of blood and lymph. Blood clotting. Blood groups including Rh factor, haemopoiesis and haemostasis.

**Excretion:** Urine formation and osmoregulation.

**UNIT-III**

**Muscles:** Ultrastructure, chemical and physical basis of skeletal muscle contraction.

**Neural Integration:** Structure of neuron, resting membrane potential, Origin and propagation of impulse along the axon, synapse and myoneural function.

**UNIT-IV**

**Physiology of Behavior:** Taxes and reflexes, instinctive and motivate learning and reasoning

**Endocrine:** Structure and physiology of thyroid, parathyroid, adrenal, hypothalamus, pituitary, pancreas and gonads.

**Suggested Reading Material:-**

1. Guyton, A.S.(1994), Text Book of Medical Physiology, 7th Edition, W.B. Saunders Company.
2. Hill, R. W., Wyse, G. K. and Anderson, N. (2004), Animal physiology, Sinauer Associate, INC. Pub. Saunderland, Massachusettes, USA.
3. Hoar, W. S. (1984), General and Comparative Physiology, Prentice Hall of India Pvt. Limited, New Delhi, India.
4. Prosser, C.L. (1984), Comparative Animal Physiology, Satish Book Enterprise Books seller & Publishers, Agra.
5. Purves, W. K., Oriane, G. H., Space, H. C. and Salava, D. (2001), Life – The Science of Biology (6<sup>th</sup> ed), Sinauer Assoc. Inc., USA.
6. Randall, D., Burggren, K.L. and French, K. (2002), Eckert Animal Physiology: Mechanisms and Adaptations, W.H. Freeman and Company, New York.
7. Taneja, S.K.(1997), Biochemistry & Animal Physiology, Trueman Book Co.
8. Willmer, P. Stone, G. and Johnston, I (2000). Environmental Physiology of Animals, Blackwell Science.
9. Withers, P.C. (1992), Comparative Animal Physiology, Saunder College Publishing, New York.

**SEMESTER-IV**

**ZOOLOGY**

**Practical-IV (Related to ZOO-IVA and ZOO-IV B)**

**Time: 3hrs.**

**Marks: 30**

**Important Note for Practical:**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines (D.O.No. F. 14-6/2014(CPP-II) dated 01-08-2014) the dissections should not be conducted. The guidelines on this issue are available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)

1. Study of the skeleton of *Scoliodon*, *Rana*, *Varanus*, *Gallus* and *Oryctolagus*.
2. Identification of food stuffs: starch, glucose, proteins and fats in solution.
3. Demonstration of osmosis and diffusion.
4. Demonstrate the presence of amylase in saliva, denaturation by pH and temperature.
5. Determination of coagulation and bleeding time of blood in man/rat/rabbit.
6. Determination of blood groups of human blood sample.
7. Recording of blood pressure of man.
8. Analysis of urine for urea, chloride, glucose and uric acid.
9. Estimation of haemoglobin content.
10. Field study: Visit to a fossil Park/Lab/ Science City and submit a report.
11. Familiarity with the local vertebrate fauna.

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of Practical Examination:**

- |   |    |
|---|----|
| 1. Identify the given bones, make labeled sketches of their respective-views.         | 10 |
| 2. Write down the steps and determine the constituents in the given sample.           | 5  |
| 3. Write the procedure and perform the given physiology experiment.                   | 5  |
| 4. Report on visit to a fossil park/lab/Science City/study of local vertebrate fauna. | 5  |
| 5. Viva-voce & Practical file.  | 5  |

**SEMESTER-IV  
BOTANY**

**Paper-IV A: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS-I  
(THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week**

**Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer-type (3-4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit-I**

Characteristics of seed plants; Evolution of the seed habit; Distinguishing features of angiosperms and gymnosperms. Angiosperms: Origin and evolution. Some examples of primitive angiosperms.

**Unit-II**

General features of gymnosperms and their classification; evolution and diversity of Gymnosperms including fossil and living gymnosperms; Geological time scale and fossilization

**Unit-III**

Morphology of vegetative and reproductive parts; Anatomy of root, Stem and leaf; Reproduction and life cycle of Pinus, Cycas,

**Unit-IV**

Morphology of vegetative and reproductive parts; Anatomy of root, Stem and leaf; Reproduction and life cycle of Ephedra and Ginkgo

**Suggested Readings:-**

1. Bhatnagar, S.P. and Moitra, A. (1996). Gymnosperms, New Age International Limited, New Delhi.
2. Gifford, E.M. and Foster, A.S. (1988). Morphology and Evolution of Vascular Plants, W.H. Freeman & Company, New York.
3. Pellant, C. (1994). Fossils, Dragon's World, Great Britain
4. Sporne, K.R. (1965). The Morphology of Gymnosperms, Hutchinson & Co. (Publishers) Ltd., London.
5. Taylor, T. N., Taylor, E. L. and Krings, M. (2008). Paleobotany: The Biology and Evolution of Fossil Plants (2nd Edition). Elsevier Inc. Netherlands.
6. Vashistha, P. C. (2016). Botany for degree students. S.Chand and Company, New Delhi

**SEMESTER-IV  
BOTANY**

**Paper-IV B: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS-II  
(THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week**

**Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer-type (3-4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit-I**

Angiosperm taxonomy; Brief history, Aims and fundamental components (alpha-taxonomy, Omega-taxonomy, Holotaxonomy); Identification, keys. Taxonomic literature. Botanical nomenclature: Taxonomic ranks; Type concept; Principle of priority.

**Unit-II**

Botanical nomenclature: Taxonomic ranks; Type concept; Principle of priority. Major contribution of cytology, Phytochemistry and taximetrics to taxonomy. Classification of angiosperms; Salient features of the systems proposed by Bentham and Hooker, Engler and Prantl

**Unit-III**

Diversity of flowering plants as illustrated by members of the families Ranunculaceae, Brassicaceae, Rutaceae, Fabaceae, Apiaceae, Acanthaceae,

**Unit-IV**

Diversity of flowering plants as illustrated by members of the families Apocynaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Chenopodiaceae, Euphorbiaceae, Liliaceae, Orchidaceae and Poaceae.

**Suggested Readings:-**

1. Bendre, A. (2007). Practical Botany, Rastogi Publications, Meerut.
2. Davis, P.H. and Heywood, V.H. (1963). Principles of Angiosperm Taxonomy, Oliver and Boyd, London.
3. Gifford, E.M. and Foster, A.S. (1988). Morphology and Evolution of Vascular Plants, W.H. Freeman & Company, New York.
4. Jeffrey, C. (1982). An Introduction to Plant Taxonomy, Cambridge University Press, Cambridge, London.
5. Jones, S.B., Jr. and Luchsinger, A.E. (1986). Plant Systematics (2nd edition). McGraw- Hill Book Co., New York.
6. Radford, A.E. (1986). Fundamental of Plant Systematics, Harper and Row, New York

**SEMESTER-IV BOTANY**  
**Botany Practicals-IV (Based on Papers-IV A and IV B)**

**Practical Marks: 30**  
**Practical Hours: 4½ Hours/week**

**Suggested Laboratory Exercises**

1. Angiosperms The following species are suitable for study.
2. This list is only indicative. Teachers may select plants available in their locality. Teachers may select plants/material available in their locality/institution.
  1. Ranunculaceae: Ranunculus, Delphinium
  2. Brassicaceae: Brassica, Alyssum, Iberis, Coronopus.
  3. Malvaceae: Hibiscus, Abutilon.
  4. Rutaceae: Murraya, Citrus.
  5. Fabaceae: Faboideae: Lathyrus, Cajanus, Melilotus, Trigonella, Caesalpinioideae: Cassia, Caesalpinia, Mimosoideae: Prosopis, Mimosa, Acacia.
  6. Apiaceae: Coriandrum. Foeniculum, Anethum.
  7. Acanthaceae: Adhatoda, Peristrophe.
  8. Apocynaceae: Vinca, Thevetia, Nerium.
  9. Asclepiadaceae: Calotropis.
  10. Solanaceae: Solanum, Withania, Datura.
  11. Euphorbiaceae: Euphorbia, Phyllanthus.
  12. Lamiaceae: Ocimum, Salvia.
  13. Chenopodiaceae: Chenopodium, Beta.
  14. Liliaceae: Asphodelus, Asparagus.
  15. Poaceae: Avena, Triticum, Hordeum Poa, Sorghum.
3. The Students should be made familiar with the use of identification keys including use of computers in taxonomy. The teachers should prevent students from collecting plants from the wild and submitting them for the practical examination. Instead, the student should be asked to prepare field reports.

**Gymnosperms**

Cycas (i) Habit, armour, of leaf bases on the stem (if specimen is not available show photography), very young leaf (circinate vernation) and old foliage leaves, sclae leaf, bulbils, male cone (specimen); Microsporophyll, megasporophyll mature seed. (ii) Study through permanent slides—normal root (T.S.), stem (T.S.) (if sections are not available show photographs), ovule (L.S.). (iii) Study through hand sections or dissections-coralloid root (T.S.), rachis (T.S.), leaflet (V.S.), microsporophyll (V.S.) pollen grains (W.M.).

Pinus (i) Habit, long and dwarf shoot showing cataphylls and scale leaves, T.S. wood showing growth rings, male cone, 1st year, 2nd year and 3rd year female cones, winged seeds. (ii) Study through permanent slides-root (T.S.), female cone (L.S.) ovule (L.S.), embryo (W.M.) showing polycotyledonous condition. (iii) Study through hand sections or dissections-young stem (T.S.), old stem (wood) (T.L.S. and R.L.S.), needle (T.S. male cone (L.S.), male cone (T.S.), Pollen grains (W.M.).

Éphedra (i) Habit and structure of whole and female cones. (ii) Permanent slides-female cone (L.S.). (iii) Hand sections/dissections-node (L.S.), internode (T.S.), macerated stem to see vessel structure; epidermal peel mount of vegetative parts to study stomata, male cone (T.S. and L.S.), pollen grains. Ginkgo (i) Habit and structure of whole plant. (ii) Permanent slides-male and female reproductive parts. (iii) pollen grains

**Suggested Readings:**

1. Angiosperm Phylogeny Group (2003). An update of the Angiosperm Phylogeny Group classification for the orders and families of the flowering plants: APG
2. Botanical Journal of the Linnaean Society 141: 399-436. 2. Cronquist, A. (1981). An Integrated System of Classification of Flowering Plants. Columbia University Press, New York.
3. Simpson, M.C. (2006). Plant Systematics. Elsevier, Amsterdam

### SEMESTER-IV

#### ESL 221 Environmental Studies (Compulsory) (Student can opt this Paper whether in 3<sup>rd</sup> or 4<sup>th</sup> Semester)

**Time: 3 Hrs.**

**Max. Marks: 100**

#### Teaching Methodologies

The Core Module Syllabus for Environmental Studies includes class room teaching and field work. The syllabus is divided into 8 Units [Unit-1 to Unit-VII] covering 45 lectures + 5 hours for field work [Unit-VIII]. The first 7 Units will cover 45 lectures which are class room based to enhance knowledge skills and attitude to environment. Unit-VIII comprises of 5 hours field work to be submitted by each candidate to the Teacher in-charge for evaluation latest by 15 December, 2018.

**Exam Pattern:**           **End Semester Examination- 75 marks**  
                                  **Project Report/Field Study- 25 marks [based on submitted report]**  
                                  **Total Marks- 100**

The structure of the question paper being:

**Part-A**, Short answer pattern with inbuilt choice – **25 marks**

Attempt any five questions out of seven distributed equally from Unit-1 to Unit-VII.  
Each question carries 5 marks. Answer to each question should not exceed 2 pages.

**Part-B**, Essay type with inbuilt choice – **50 marks**

Attempt any five questions out of eight distributed equally from Unit-1 to Unit-VII. Each question carries 10 marks. Answer to each question should not exceed 5 pages.

#### Project Report / Internal Assessment:

**Part-C**, Field work – **25 marks [Field work equal to 5 lecture hours]**

The candidate will submit a hand written field work report showing photographs, sketches, observations, perspective of any topic related to Environment or Ecosystem. The exhaustive list for project report/area of study are given just for reference:

1. Visit to a local area to document environmental assets: River / Forest/ Grassland / Hill / Mountain / Water body / Pond / Lake / Solid Waste Disposal / Water Treatment Plant / Wastewater Treatment Facility etc.
2. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of tree in your areas with their botanical names and soil types
5. Study of birds and their nesting habits
6. Study of local pond in terms of wastewater inflow and water quality
7. Study of industrial units in your area. Name of industry, type of industry, Size (Large, Medium or small scale)
8. Study of common disease in the village and basic data from community health centre
9. Adopt any five young plants and photograph its growth
10. Analyze the Total dissolved solids of ground water samples in your area.
11. Study of Particulate Matter (PM<sub>2.5</sub> or PM<sub>10</sub>) data from Sameer website. Download from Play store.
12. Perspective on any field on Environmental Studies with secondary data taken from Central Pollution Control Board, State Pollution Control Board, State Science & Technology Council etc.

#### Unit-I

#### The multidisciplinary nature of environmental studies

Definition, scope and importance, Need for public awareness

**(2 lectures)**

### Unit-II

#### Natural Resources: Renewable and non-renewable resources:

Natural resources and associated problems.

- Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
  - Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
  - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
  - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
  - Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
  - Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.

**(8 Lectures)**

### Unit-III

#### Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

**(6 Lectures)**

### Unit-IV

#### Biodiversity and its conservation

- Introduction – Definition: genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
- Biodiversity at global, national and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

**(8 Lectures)**

### Unit-V

#### Environmental Pollution

Definition

- Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

**(8 Lectures)**

### Unit-VI

#### Social Issues and the Environment

- From unsustainable to sustainable development
- Urban problems and related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products
- Environmental Protection Act, 1986
- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and control of Pollution) Act, 1974
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness

(7 Lectures)

### Unit-VII

#### Human Population and the Environment

- Population growth, variation among nations
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights
- Value Education
- HIV / AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and Human Health
- Case Studies

(6 Lectures)

### Unit-VIII

#### Field Work

- Visit to a local area to document environmental assets river/forest/grassland/hill/mountain
- Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc

(Field work equal to 5 lecture hours)

#### References:-

1. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
2. Down to Earth, Centre for Science and Environment, New Delhi.
3. Heywood, V.H. & Waston, R.T. 1995. Global Biodiversity Assessment, Cambridge House, Delhi.
4. Joseph, K. & Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
5. Kaushik, A. & Kaushik, C.P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
6. Rajagopalan, R. 2011. Environmental Studies from Crisis to Cure. Oxford University Press, New Delhi.
7. Sharma, J. P., Sharma. N.K. & Yadav, N.S. 2005. Comprehensive Environmental Studies, Laxmi Publications, New Delhi.
8. Sharma, P. D. 2009. Ecology and Environment, Rastogi Publications, Meerut.
9. State of India's Environment 2018 by Centre for Sciences and Environment, New Delhi
10. Subramanian, V. 2002. A Text Book in Environmental Sciences, Narosa Publishing House, New Delhi.

**SEMESTER-IV  
MICROBIOLOGY**

**MICROBIAL ECOLOGY  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:**

There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT-I**

1. Diversity of microbial habitats: Environmental selecting factors, physical, chemical and biological types of microbial habitats, atmospheric, aquatic and terrestrial environments.

**UNIT-II**

2. Microbial interactions, Competition for survival in nature (for nutrients, space, oxygen), antagonism, commensalism, symbiosis, parasitism miscellaneous associations in nature.

**UNIT-III**

3. Role of microorganisms in geochemicals cycles: Carbon cycle, nitrogen cycle, phosphorus cycle. Sulphur cycle, microbial toxins in the environment: Types of Microbial toxins, ecological consequences of microbial toxins as insecticidal agents, bioinsecticides.

**UNIT-IV**

4. Microbiological aspects of pollution caused by domestic and industrial sewages, water pollution, air pollution, potable and non-potable water, concept of BOD and COD, effluent treatment by primary, secondary and tertiary methods, biofertilizers bioinsecticides.

**Books Recommended:**

1. Edmonds, P., 1978, Microbiology: An Environmental Perspective, MacMillan Publishing Co., Inc., New York.
2. Powar C.B. and Danganwala, H.F., 1992, General Microbiology, Volume II, Himalaya Publishing House, New Delhi.
3. Sharma, P.D., 1997, Microbiology, Rastogi Publication, Meerut.
4. Pleczar, M.J., Chan, E.C.S. and Krieg N.R., 1993, Microbiology, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
5. Patel, A.H., 1984, Industrial Microbiology, Macmillan India Ltd., Delhi.

**SEMESTER-IV  
MICROBIOLOGY**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

- 1) Isolation and enumeration of total bacteria from soil by pour plating and spread plating.
- 2) Distinction between fermenting and non-fermenting microorganisms.
- 3) Effects of various concentrations of carbon source on microbial growth.
- 4) Effects of various concentrations of nitrogen source on microbial growth.
- 5) Effect of temperature on microbial growth.
- 6) Effect of pH on microbial growth.

**SEMESTER-IV**  
**INDUSTRIAL MICROBIOLOGY (VOCATIONAL)**

**MICROBIAL BIOCHEMISTRY**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT-I**

1. Classification of carbohydrates, optical properties, chemical properties of carbohydrates, chemical structure and properties of starch, cellulose, glycogen. Saturated and unsaturated fatty acids, biosynthesis of fatty acid, distribution and function of lipids and microorganism. Degradation of lipids by alpha, beta and omega oxidation, lipid peroxidation.

**UNIT-II**

2. Properties of proteins (acids base property and solubility), Primary, secondary, tertiary structures of proteins. Amino acids classification of essential amino acids. Hendersen and Hasselbalch equation for ionisation of amino acids and Zwitterions property. Synthesis of peptides.

**UNIT-III**

3. Enzymes Classification, coenzyme, cofactor, thermodynamics Explanation of enzyme catalysis, reaction order, derivation of Michaelis-Menten equation, transformation of Michaelis- Menten Kinetics to line weaver-Burke Plot, competitive, uncompetitive and non competitive inhibition, kinetics of allosteric regulation of enzyme. Isozymes, factors contributing to catalytic efficiency of enzymes (Mode of catalysis).

#### UNIT-IV

4. The general structure of DNA, RNA (mRNA,tRNA), synthesis of RNA in Eukaryotes and prokaryotes, concept of operon, promoters and repressor, post transcriptional processing of RNA, regulation of gene expression, (positive and negative control).

#### **Books Recommended:**

1. Cohn E. E and Stumph P.K., (1988). Outline of Biochemistry, John Wiley and Sons.
2. Lehninger, A., (1978), Biochemistry, Worth Publication, U.S.A.
3. Pepler, H.J.and Periman, D., 1979, Microbial Technology, Vol.I, Microbial Processes, Academic Press.
4. Microbial Physiology, (1981) by Moat, A.G. and Foster, J.W., John Wiley and Sons, Third Edition.
5. General Microbiology, Vol.I by Power and Dagainawala, Himalayan Publisher.

**SEMESTER-IV**  
**INDUSTRIAL MICROBIOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

1. Estimation of Extracellular Protein in cell culture.
2. Estimation of sugars in cell culture broth.
3. Extraction and identification of lipids by thin layer chromatography.
4. Paper chromatographic separation of amino acid and pigments by one way descending.
5. Measurement of Mutation frequency in bacteria.
6. Mutant isolation by gradient plate technique.
7. Effect of UV light on mutation frequency in Bacteria.

**SEMESTER-IV  
MICROBIAL & FOOD TECHNOLOGY**

**PRINCIPLES OF FOOD NUTRITION  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setter:**

There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT-I**

**Introduction to Nutrition:**

Food as a source of nutrients. functions of foods, Malnutrition. Food guide—Basic five food groups, Concept or Blanced diet. Energy requirement or the body.

**UNIT-II**

**Food Chemistry:**

Composition, metabolism & functions of carbohydrates, proteins & fate. Vitamins & Minerals: Sources, Bioavailability, Functions & deficiency.

Water: Sources, Requirement, functions, water-balance, effects of deficiency.

**UNIT-III**

**Meal Planning:**

Bais principles of meal planning objectives Steps in meal planning food cost. Planning normal diets for following age groups:—

- a) Adult male & female
- b) Pregnancy & weaning
- c) Infancy & school going
- d) Adolescence
- e) Old age

**UNIT-IV**

**Therapeutic Diets:**

In following conditions:—

- a) Diarrhea
- b) Hypertension
- c) Constipation
- d) Fever

**Recommended Books:**

1. Swaminathan M. Essentials of Food & Nutrition. Vol. I, Bangalore Printing & Publishing Ltd.
2. Swaminathan M. Essentials of Food & Nutrition. Vol.II, Bangalore Printing & Publishing Ltd.
3. Meyer L.H. Food Chemistry. CBS Publishers & Distributors.

**SEMESTER-IV**  
**MICROBIAL & FOOD TECHNOLOGY**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

1. Determination of calorific value of a given food.
2. Preparation & Calculation of calories, proteins, carbohydrates, fats & fiber of the diets for the following age groups:-
  - a) Adult male & female
  - b) Pregnancy & weaning
  - c) Infancy & school going
  - d) Adolescence
  - e) Old age
3. Preparation & calculation of calories, proteins, fats, carbohydrates & fiber of therapeutic diets in the following conditions.
  - a) Diarrhea
  - b) Hypertension
  - c) Constipation
  - d) Fever

**SEMESTER-IV**  
**BIOINFORMATICS (VOCATIONAL)**

**COMPUTER PROGRAMMING IN C++ AND PERL**  
**(THEORY)**

**Time: 3 Hrs.**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions.
2. Question 1 will be compulsory and will be of 10 short answer type. (1½ X10=15)
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks (15x4=60)

**UNIT-I**

**Principles of Computing:** Computer Hardware, System Software, Applications Software, Algorithm Design and Flow Charts. Introduction to procedure oriented programming and object oriented programming. Basic concepts, benefits and applications of object oriented programming.

**C++ Programming Basics:** Variable, constant, Expression, Statements, Comments and keywords of C++, Arithmetic, Relational, Logical, Assignment, Increment/Decrement, Conditional, Precedence of Operators, Data type, Type Conversion, library function,

**Introduction to C++ I/O System:** Inputting using cin and outputting using cout statements.

**Decision Making and Looping Statement:** If Statement, If else statement, nesting of if statement, switch statement, conditional operator statement, While loop, do loop, for loop, nesting of loops, break and continue statement, go to statement.

**Arrays** Defining an array, array type, array elements, Accessing, and averaging array elements, initializing array, Programming of C++ with array, String handling, array of strings.

**UNIT-II**

**Functions:** Declaring and defining function, Local, global variables, execution of function, passing argument to function, Return values, Overloading functions, Inline function.

**Object Oriented Programming:** Objects & Classes, Constructor & Destructor, Operator overloading, Overloading unary operators, Overloading binary operators, Data conversion.

**Inheritance:** Derived class and Base Class, Derived Class Constructors, Overriding member functions.

**Polymorphism:** Virtual Functions, Problems with single inheritance, Multiple inheritance.

**Structures** A simple structure, specifying the structure, defining a structure variable.

**Pointers:** Addresses and pointers, Pointers and Arrays, Pointer to objects.

Advanced C++ I/O

### UNIT-III

**Getting Started with PERL:** Perl's Benefits, Versions of Perl, Downloading & installing perl in Linux/Windows environment, How to run perl Programs in linux/windows environment. Applications of perl in Bioinformatics.

**Perl Values and Data Types:** Scalar, Arrays, Hashes, Operators; Operator precedence, I/O: Input from STDIN, Built in File handlers, Input from file, Input from file named on command line, Output to file.

### UNIT-IV

**Conditional and Logical Statements:** Statement Blocks, if, else, elsif, unless, while, do while, do until, for, foreach statements. **Control Statements:** Next, last, redo, continue statements. **Regular Expressions:** Match, substitute and translate operators, Meta characters, Metasymbols and Pattern Modifiers. PERL subroutines and functions, Introduction to Bioperl.

#### Recommended Books:

1. Schildt H. C++: the Complete Reference. Tata McGraw Hill. New Delhi (1999).
2. Balagurisamy E. ooP with C++. 2<sup>nd</sup> Edition. Tata McGraw Hill. New Delhi (2002).
3. Eubbard. Schaum's Outline Series: Programming with C++. 2<sup>nd</sup> Edition. Tata McGraw Hill. New Delhi (2002).
4. Lafore, R. C++. Galgotia Publication (2000).
5. James D.Tisdall, (2001). "Beginning Perl for Bioinformatics," O'Rilley and Associates
6. D. Curtis Jamison. *Perl programming for biologists*. Hoboken, N.J.: Wiley-Liss, 2003.

**SEMESTER-IV**  
**BIOINFORMATICS (VOCATIONAL)**

**LAB IN COMPUTER PROGRAMMING IN C++ AND PERL**  
**(PRACTICAL)**

**Time: 3 Hrs**

**Marks: 25**

**Credit Hours: 4½**

**Practicals Using PERL Language:**

- 1 Write a Program to show the concept of standard input/output.
- 2 Write a Program to declare and use variables.
- 3 Write a Program to use the operators.
- 4 Write a Program to use hashes and arrays.
- 5 Write a Program to implement the conditional statements.
- 6 Write a Program to show the use of loops, nested loops
- 7 Write a Program which uses NEXT, LAST, REDO, CONTINUE statement
- 8 Write a program to show file input/output.
- 9 Write a Program to show the concept of subroutine.
- 10 Write a program to transcription of DNA to RNA
- 11 Write a program to concatenate two strings
- 12 Programs related with Regular Expression
  - o Searching for a regular expression in a file.
  - o Searching and replacing a regular expression a file.

**Practicals Using C++ Language:**

- 1 Write a Program for addition and multiplication of two matrices.
- 2 Write a Program to create dynamic array.
- 3 Create a class having default constructor, copy constructor and destructor.
- 4 Write a Program to implement the concept of virtual base class.
- 5 Write a Program to implement multiple inheritances.
- 6 Write a Program to overload binary operator (-).
- 7 Write a Program to implement run time polymorphism.
- 8 Create a database to store student's information.

**SEMESTER-IV  
BIOINFORMATICS (VOCATIONAL)**

**ON JOB TRAINING**

**Satisfactory/Unsatisfactory**

This should be taken up during summer vacations over a period of one month in the area of Bioinformatics/Computer. The college should send the satisfactory/Unsatisfactory report of students after receiving the project/training report from the student.

**SEMESTER-IV**  
**BIOTECHNOLOGY (VOCATIONAL)**

**BIOPHYSICAL AND BIOCHEMICAL TECHNIQUES AND MOLECULAR BIOLOGY**  
**(THEORY)**

**Time: 3 Hours**

**Credit Hours/week: 6 (60 mints. each)**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions
2. Question 1 will be compulsory and will be of 10 short answer type. (1½x10=15)
3. The remaining 8 questions shall include 2 questions from each unit.  
Candidates shall be required to attempt 1 question from each unit.  
All questions shall have equal marks. (15x4=60)

**UNIT-I**

**Spectroscopy:** Lambert-Beer law, General spectroscopy-UV-VIS, fluorescence, IR, Raman spectra. Electrophoresis: Basic principles, theory and application of native, SDS-PAGE and Agarose Gel` electrophoresis. Introduction to IEF, (Iso-electric focusing) 2-D gel electrophoresis, applications in biology for isolation of biomolecules based on charge and molecular weight.

**UNIT-II**

**Chromatography:** Theory, principle and application of column, paper, thin layer, ion-exchange and affinity chromatography, GLC, HPLC, centrifugation: Basic principles, theory and applications of preparative and analytical centrifugation, rotor types, sedimentation co-efficient and care of rotors.

**UNIT-III**

**Molecular Basis of Life:** Structure of DNA, DNA replication both prokaryotes and eukaryotes. DNA recombination molecular mechanisms: prokaryotic and eukaryotic. Insertion elements and transposons.

**UNIT-IV**

**Structure of Prokaryotic Genes:** Prokaryotic transcription. Prokaryotic translation. Prokaryotic gene expression (lac, his, trp, catabolic repression). Structure of eukaryotic genes. Eukaryotic transcription. Eukaryotic translation. Eukaryotic gene expression transcription factors etc. Gene expression in yeast. Post translation regulation of gene expression.

**Books Recommended:**

1. Freifelder, D., (1982), Physical Biochemistry, Application to Biochemistry and Molecular Biology, 2nd ed., W. H. Freeman and Company, San Fransisco.
2. Damal. J, Lodish, H., and Baltimore, D. (1990), Molecular Cell Biology, 2nd, .. Scientific American Books, Distributed by W. H. Freeman and Co., New York.
3. William, B.L. and Wilson, K., (1992), A Biologist Guide to Principles and Techniques Practical Biochemistry, 3rd ed., Edward Arnold Publisher, Baltimore, Maryland (USA).
4. R. W. Old and S. B. Primerose (2002): 6<sup>TH</sup> Ed., Principles of Gene Manipulation: An Introduction to Genetic Engineering, Black Well Scientific Publications.
5. Lewin, B., (2008), Gene IX, Oxford University Press.

**SEMESTER-IV**  
**BIOTECHNOLOGY (VOCATIONAL)**

**BIOPHYSICAL AND BIOCHEMICAL TECHNIQUES AND MOLECULAR BIOLOGY**  
**(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 25**

**Credit Hours/week: 4½**

**Biophysical and Biochemical Techniques**

1. Preparation of standard curve of BSA
2. Preparation of standard curve of DNA using absorption at 260nm
3. Separation of proteins by ion-exchange, chromatography
4. Separation of proteins by affinity column chromatography
5. Separation of molecules by gel filtration chromatography.
6. Separation of proteins by SDS-PAGE
7. Sedimentation using Swing out Rotor and Angle Rotor

**Molecular Biology**

- 1 Isolation of Genomic DNA
- 2 Isolation of Plasmid DNA
- 3 Determination of concentration of DNA sample
- 4 Determination of Concentration of RNA sample
- 5 Preparation of Agarose gel for agarose gel electrophoresis
- 6 Separation of Plasmid and Genomic DNA by Agarose Gel Electrophoresis
- 7 Separation of assorted charged dyes such as xylene cyanole and bromphenol blue by agarose gel electrophoresis

**ON JOB TRAINING**

**Satisfactory/Unsatisfactory**

**SEMESTER-IV****EDUCATION****PSYCHOLOGICAL FOUNDATIONS OF EDUCATION****Time: 3 hours****Max. Marks: 100****Instructions for the Paper Setters:**

**Note:** (i) The question paper will consist of five Units: I, II, III, IV & V. Units I, II, III & IV will have two questions each carrying 20 marks. The students are to attempt one question from each unit approximately in 1000 words. Unit –V consists of 10 short answer type questions to be set from their entire syllabus and will carry 20 marks in all. Each short answer type question carries 2 marks, to be attempted in 8 to 10 lines.

**UNIT-I**

1. Meaning , nature & scope of Educational Psychology
2. Relationship between Education & Psychology, Difference between Psychology & Educational Psychology

**UNIT-II**

1. Heredity & Environment – concepts & their role in development
2. Personality – concepts, assessment and its educational implications.

**UNIT-III**

1. Nature of learner- Physical, Mental, Emotional & Social stages of development
2. Physical, Mental, Social, Emotional characteristics, needs & problems of Indian Adolescents.

**UNIT-IV**

1. Exceptional children – Meaning, Types & Identification
2. Characteristics & Education of gifted & backward children

**UNIT-V**

This Unit (V) will consist of 10 short type questions to be set from the entire syllabus of first four Units (I, II, III, IV)

**Books Recommended:**

1. Mangal, S.K. Advanced Educational Psychology, Prentice Hall of India, Pvt. Ltd., New Delhi, 2005.
2. Chauhan, S.S. Advanced Educational Psychology, Vikas, Publishing House Pvt. Ltd. 2007.
3. Kirk, Samuel, A, Gallagher James J. and Anassasion, Nicholas, J. Educating Exceptional Children, Houghton Mifflin Company, New York, (1997).
4. Kakkar, S.B. Educational Psychology, Prentice Hall of India, New Delhi, (2001)
5. Sidhu, Kulbir Singh Statistics in Education and Psychology
6. Sahu, Binod Kumar, Education of Exceptional Children, Kalyani Publishers, Ludhiana, (2002)
7. Mohanty, Girish Bala, Educational Psychology, Kalyani Publishers, Ludhiana, (1986)

**SEMESTER-IV****HUMAN RIGHTS****ENVIRONMENT AND HUMAN RIGHTS****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:**

The question paper will consist of five sections A,B,C,D and E. Section A,B,C and D will have two questions from the respective portion of the syllabus and will carry 20 marks each. Section E will consist of 10 short answer type questions to be set from the entire syllabus i.e. sections A,B,C & D and will carry 20 marks in all, such short answer type questions carry 2 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each, from sections A,B,C and D of the question paper and the entire section E. The candidates are required to answer the short questions in not less than 50 words.

**UNIT-I**

Environment: Meaning; and Concern for Environment.

**UNIT-II**

Historical Perspective; and Pollution and its effects on environment and life on earth.

**UNIT-III**

Rights to clean environment: Its Content and Scope; Right to Environment v/s Right to Development; and Culprits and Victims.

**UNIT-IV**

Globalization of the Right: The Planet Earth and Global Commons.

**UNIT-V**

National Regime of Environment Protection: Constitutional Rights and Duties; and Statutory Rights and Duties.

**Recommended Books:**

1. Biswas Tapan, Human Rights, Gender and Environment, Viva Books New Delhi.
2. P.C. Sinha, India's Human Rights Regime: A Comprehensive Presentation Part I, Kanishka Publishers, New Delhi.
3. P.C. Sinha, India's Human rights Regime: A Comprehensive Presentation Part II, Kanishka Publishers, New Delhi.
4. Balasubramaniam, V., "Environment and Human Rights: A New Form of Imperialism", Economic and Political Weekly, vol.33, no.8, 22-27 Feb. 1998,
5. RLEK, (1997), Community Forestry Management in Protected Areas: A Van Gujjar Proposal, Natraj Publishers, New Delhi.

**SEMESTER-IV****DAIRY FARMING (VOCATIONAL)  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Instructions for the Paper Setter:**

1. Question paper should be set strictly according to the syllabus and in the Punjabi Language.
2. The language of questions should be straight and simple.
3. Theory paper shall consist of three parts:
  - (a) Ten short compulsory questions of 1 mark each requiring replies up to five lines each (Total marks:  $10 \times 1 = 10$  marks).
  - (b) Ten questions of 3 marks each requiring short replies shall be asked. The candidate has the choice to attempt eight questions (Total marks  $8 \times 3 = 24$ ).
  - (c) Four questions of descriptive type requiring five pages for each answer shall be asked. The candidate has the choice to attempt two questions. (Total marks :  $08 \times 02 = 16$ )
4. The question paper should cover the whole syllabus.

**Management:** Breeding cycle; castration of male calves; methods and advantages of castration; control and restraining of animals, casting of animal. Estimation of age and body weight of animals; dry period; methods of milking, loose and stall feeding, grazing, use of water in dairy farming; water requirements of dairy animals; factors affecting water intake. Routine dairy farm operations, labour requirement for various farm operations.

**Breeding:** Importance of sire and dam. Pedigree selection, heredity, twins and free. Detection of heat in cows and buffaloes. Economic value of age at first calving and calving interval. Sterility and infertility, factors affecting infertility, causes of sterility in male and female. Merits and demerits of artificial insemination. Infections caused by natural service and artificial insemination. Factors affecting success in artificial insemination. Principles of upgrading of cattle. Various systems of breeding, i.e. inbreeding, outbreeding.

**SEMESTER-IV**

**DAIRY FARMING (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hours.**

**Marks: 50**

1. Practice in age determination, body weight, disbudding, casting
2. Estimation of milk sample.
3. Cream separation, use of lactometer. Fat and S.N.F.
4. Identification of the breeds.

**SEMESTER-IV****RSL-221****RUSSIAN****Time: 3Hrs****Max. Marks: 80****PAPER-I (WRITTEN) APPLIED GRAMMAR****Grammar**

1. The question paper is to be so set that it covers the maximum grammatical topics covered in the prescribed lessons in the text-book. **Marks: 25**
2. Translation from English into Russian.(an unseen passage of about 150 words) **Marks: 15**
3. Translation from Russian into English/Hindi/Punjabi.(A seen passage of about 200 words) **Marks: 10**
4. Unseen Comprehension **Marks: 20**
3. Composition (one out of any three given topics) **Marks: 10**

**Topics:** An Indian Festival, Any Russian Festival, Our Country, Favourite Indian/Russian Writer, Why I am learning Russian.

**Note:** Glossary of difficult words may be given for translation purpose in the question paper.

**SEMESTER-IV****RUSSIAN****PAPER-II (ORAL)****Max. Marks: 20**

- |  |                  |
|--|------------------|
| - Reading Comprehension.               | <b>Marks: 05</b> |
| - Dictation                            | <b>Marks: 05</b> |
| - Conversation                         | <b>Marks: 05</b> |
| - Retelling of a small text in Russian | <b>Marks: 05</b> |

**Prescribed Text-Book:**

“RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 41 to 45)

**Recommended Books:**

1. Langenscheidt Pocket Russian Dictionary.
2. Russian for Indians by Hem Chandra Pande.

“RUSSIAN” – by Ovsienko Y.G. & Skopina (Part-I & II)

**SEMESTER-IV****FRL-221****FRENCH****PAPER-I (Written) (COMPOSITION & GRAMMAR)****Time: 3 Hrs.****Max. Marks: 80**

1. An informal letter in French (to friend & family) **Marks: 10**
2. Questions on applied grammar pertaining to the text **Marks: 20**  
(Exercises from the textbook)
3. Short answer questions from the textbook. **Marks: 10**  
(five out of the ten to be attempted).
4. Translation from French into English. **Marks: 15**
5. Translation from English into French. **Marks: 15**
6. Play "La Parure" – Guy de Maupassant **Marks: 10**

**Note: Glossary of difficult words may be given for translation purpose in the question paper.**

**SEMESTER-IV****FRENCH****PAPER-II (ORAL)****Max. Marks 20**

- |                      |                  |
|----------------------|------------------|
| - Reading of a text  | <b>Marks: 05</b> |
| - Dictation          | <b>Marks: 05</b> |
| - Conversation       | <b>Marks: 05</b> |
| - Oral Comprehension | <b>Marks: 05</b> |

**Prescribed Textbook:**

**CONNEXIONS-II** (Units 7-12) by Regine Merieux & Yves Loiseau, Published by Didier

**Recommended Books:**

**Nouveau Sans Frontières II** by Philippe Dominique & Jacky Girardet

- Conte De Fée –La belle au bois dormant- Charles Perrault
- Play “La Parure” – Guy de Maussant

**SEMESTER-IV**

**URDU**

**URL-202: (PROSE AND POETRY)**

**Time: 3 Hours**

**Max. Marks: 100**

**COURSE OF STUDIES**

**A. Novel and Precis Writing**

- a) Novel: Plot, characterization, language and style & treatment of situation/  
Social condition
- b) Explanation of a paragraph from the novel.

**B. Media and Information:**

Qualities and Duties with reference to Urdu

**UNITS AND THEME**

- |                                |                       |
|--------------------------------|-----------------------|
| 1. Novel                       | <b>20x02=40 Marks</b> |
| 2. Explanation of a paragraphs | <b>15x02=30 Marks</b> |
| 3. Media and Information       | <b>15x02=30 Marks</b> |

**Book Prescribed:**

**Ek CHADAR MAILI SI:** By Rajinder Singh Bedi, Education Book House, A.M.U. Market,  
Aligarh.

**Books Recommended:**

1. Urdu Sahafat by Saqib Siddiqui, , Sir Syed Book Depot, Jamia Urdu, Medical College  
Road, Aligarh – 202002.
2. Sahafat Kaya Hai edited by Department of Persian and Urdu, Punjabi University, Patiala.
3. Television Ki Sahafat by Shakeel Hasan Shamsi, 37- Johri Mohalla, Lucknow.

**SEMESTER-IV**

**PERSIAN**

**PRL-202: GRAMMAR AND PERSIAN GENRES**

**Time: 3 Hours**

**Max. Marks: 100**

**COURSE OF READING**

**Grammar and Persian Genres:**

- a) **Grammar:** Definitions and kinds of the following:  
Ism, Zameer, Sifat, Fail, Fa'il, Mafool & Jumla, Mutazad Alfaz
- b) **Persian Genres:**  
Ghazal, Qasida, Masnavi, Rubai, Dastan, Dastan-e-Kotah, Zindgi Nameh
- c) **Media and Information:**  
Its Qualities and Duties

**UNITS AND THEME**

- |                          |                      |
|--------------------------|----------------------|
| 1. Grammar (Four )       | <b>5x4=20 Marks</b>  |
| 2. Mutazad Alfaz         | <b>10x1=10 Marks</b> |
| 3. Number                | <b>10x1=10 Marks</b> |
| 4. Persian Genres        | <b>10x3=30 Marks</b> |
| 5. Media and Information | <b>15x2=30 Marks</b> |

**Books Recommended:**

1. Miftah-ul-Qawaid by Mohiuddin Jafri.
2. Naseem-e-Balaghat by Jalal-ud-din Jafri.
3. Farsi-o-Dastur Part -II by Zohra Khanlari.
5. Urdu Sahafat by Anwar Dehlvi, Urdu Academy, Delhi
6. Television Ki Sahafat by Shakeel Hasan Shamsi, 37, Johri Mohalla, Lucknow.
7. Rehbar-e-Akhbar Navisi, by Iqbal Qadri, Qaumi Council, R.K.Puram, New Delhi.
8. Urdu: Radio aur Television Mein.by Kamal Ahmad Siddiqui. Qaumi Council, R.K.Puram, New Delhi.
9. Awami Zra'i Iblagh: Tarsil aur Tamir-o-Tarraqi, by Shahid Parvez, Qaumi Council, R.K. Puram, New Delhi.

**SEMESTER-IV**

**SANSKRIT (ELECTIVE)**

१/८क०; , oa 0; kdj .k१/२

I e; &3 ?k. Vs

i w kkz d&100

i z u&i = dk ek/; e fgluh gksxA mYkj I d'r@fgluh@i atkch@vaxst h ea gks I d'rs gA

i kB; Øe &

१/८१/२ JhenHkxonxhirk prfKz v/; k;

50 vā

i z uks ds fy, fu/kkZj r fcluh &

१/८१/२ prfKz v/; k; dk I kj

१/८[ k१/२ d".kk t u I okn

१/८x१/२ prfKz v/; k; dk i frik |

१/८?k१/२ KkudeI d; kl ; kx

१/८३१/२ i qutle dk fl ) kUr

१/८p१/२ JhenHkxonxhirk dk of'k"V; १/८prfKz v/; k; ds vk/kkj i j१/२

१/८[ k१/२ 0; kdj . k

50 vā

1- I ekl १/८rRi q#"k१/२

10 vā

2- 'kCn : I

20 vā

१/८१/२ no] e[ u] unh] x[ #] L=h] t[ x[ } Hkor} eul } i d } egr} I qn} fo} I A

१/८[ k१/२ ; qen} vLenA

१/८x१/२ bne} rn} ; n} fde- १/८rhuka fyaxka ea

3- L=h i R; ;

10 vā

4- I d'r ea vupkn

10 vā

izui = fuekzk funzk &

- I Jhenkxonxhrc ds 8 i | ndj 4 dh 0; k[; k iNh tk; A iR; sd ds 7½ vđ gkxA  
4x7½ = 30
- II Jhenkxonxhrc ds fu/kkTjr vak l s 4 izu ndj 2 dk mYkj iNk tk; A iR; sd ds  
10 vđ gkxA 2x10 = 20
- III rRi#k l ekl @l ekl foxg ds 10 in ndj 5 dk mYkj fy[kus dks dgk tk, xkA  
5x2 = 10
- IV 8 'kCn : i ndj 4 ds : i iNs tk, xA iR; sd ds 5 vđ gkxA  
4x5 = 20
- V 10 'kCnka ds l kFk L=h iR; ; ndj 5 dk L=h : i fy[kok; k tk, A iR; sd ds 2 vđ  
gkxA 5x2 = 10
- VI fglnh ea 20 l jyokD; ndj 10 dk l Ldr vupkn iNk tk; xkA iR; sd dk 1 vđ  
gkxA 1x10 = 10

**SEMESTER-IV**

**FUNCTIONAL SANSKRIT (VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

ukV & iZ u i = fglnh ea gksxkA

iZ u i = fuekZk funZk

5 प्रश्न देकर 3 का उत्तर देने के लिए कहा जाये।

3 x 20 = 60

भाग ख में 4 प्रश्न देकर 2 का उत्तर देने के लिए कहा जाये।

2 x 10 = 20

i kB; Øe &

i pegki krd

i k; f' pr

Jk) Hkn

Jk) dky

I fi . Mhdj . k

Jk) fodkj

Hkkj rh; okLrq kkl=i fj p;

Hkfe; u

x'gfuekZ kfof/k

x'gi ds k

okLrq kkfUr

**SEMESTER-IV**

**ENGLISH (COMPULSORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Texts Prescribed:**

1. *Making Connections* by Kenneth J. Pakenham 2<sup>nd</sup> Edn. CUP
2. *Moments in Time: An Anthology of Poems*, GNDU, Amritsar
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

**Course Contents:**

1. *Making Connections* by Kenneth J. Pakenham, 2<sup>nd</sup> Edn. CUP: Unit-III and Unit-IV
2. *Moments in Time*: Poems at Sr. No. 7-12
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP: Revision of units: 26-37, 42-48, 92-97, 113-120.

**Instructions for the Paper-Setter and Distribution of Marks:**

**The paper setters should avoid questions of theoretical nature on English Grammar.**

**The question paper will consist of three sections and distributions of marks will be as under:**

**Section-A: 16 Marks**

**Section-B: 20 Marks**

**Section-C: 14 Marks**

**SECTION-A**

- I. TWENTY (20) questions on the usage of grammar related to units 26-37, 42-48, 92-97, 113-120 of *English Grammar in Use* will be set for the students to attempt any SIXTEEN (16) of these questions. **(1x16=16 Marks)**

**SECTION-B**

2. TWO (2) questions (with sub parts) based on strategies and skill development exercises as given before and after reading essays in UNIT-III & UNIT-IV of the prescribed text book *Making Connections* will be set. The number of items in each question will be 50% more than what a student will be expected to attempt so that the question provides internal choice. **(6x2=12Marks)**
3. THREE (3) questions on central idea, theme, tone and style etc. of three poems from the prescribed textbook, *Moments in Time* will be set. The students will be required to attempt any TWO of these questions. **(4x2=8 Marks)**

**SECTION-C**

4. ONE question (with internal choice) requiring students to explain a stanza with reference to context will be set. The stanzas for explanation will be taken from the poems prescribed in the syllabus. **(1x7=7 Marks)**
5. ONE question based on “Beyond the reading” section at the end of each chapter of the prescribed textbook, *Making Connections* will be set. **(1x7=7 Marks)**

**SEMESTER-IV**  
**ENGLISH (ELECTIVE)**

**Time: 3 Hours**

**Max. Marks: 100**

**Books Prescribed:**

1. *Modern Prose*, G.N.D.U. Amritsar
2. *Dispelling Silence: Short Stories*
3. *New Directions* (Part 4-5)
4. Transcription of Words

**Course Contents:**

1. *Modern Prose*—Essays at serial No. 3, 4,5,7,11,12
2. *Dispelling Silence* – Stories at serial No. 1, 2, 6, 7, 8, 10, 11, 12
3. *New Directions* (Part 4-5)
4. Words for Transcription: accommodation, appreciation, capability, civilization, examination, pronunciation, university, terminology, utility, nationality, objectionable, rationality, testimonial, vocabulary, superintendent, satisfactory, rehabilitate, consultation, dictionary, veterinary, espionage, singularity, tranquility, interference, pavilion, superiority.

**Distribution of Marks & Instructions for the Paper Setters:**

The question paper will consist of three sections and distribution of marks will be as under:

Section A: **20 Marks**

Section B: **48 Marks**

Section C: **32 Marks**

**Section–A**

- I. SIX questions, each requiring a short answer, from the prescribed textbook *New Directions* will be set in the question paper. The examinees will be required to answer all these questions. **(2x6= 12 Marks)**
- II. Transcription of any EIGHT words, FOUR out of the prescribed list and any other FOUR polysyllabic words. **(1x8=8 Marks)**

**Section–B**

- III. THREE questions, each requiring a brief answer, related to incidents, anecdotes, minor characters, the use of figure of speech, tone and style etc. from the prescribed short stories will be set in the paper. The examinees will be required to answer any TWO of these questions. **(6x2=12 Marks)**
- IV. THREE questions, each requiring a brief answer, related to theme, central idea, the use of figure of speech, tone and style etc. from the prescribed essays will be set in the paper. The examinees will be required to answer any TWO of these questions. **(6x2=12 Marks)**
- V. FIVE questions (with sub parts, if necessary) based on the exercises in the text book *New Directions* will be set in the question paper. The examinees will be required to answer any FOUR of these questions. **(6x4=24 Marks)**

**Section–C**

- VI. An essay type question, with internal choice, on theme, characterization, plot, tone, and style etc. of the prescribed short stories. **(16 Marks)**
- VII. An essay type question, with internal choice, requiring answer on argument, rhetorical devices, text development strategies, tone, and style etc. of one of the prescribed essay. **(16 Marks)**

**SEMESTER-IV**  
**FUNCTIONAL ENGLISH (VOCATIONAL)**

**CONVERSATIONAL ENGLISH**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Objective:** To introduce different social situations and develop Conversational Skills.

**Books Prescribed:**

1. *Spoken English: A Foundation Course*, Part-1 by Kamlesh Sadanand & Susheela Punitha, Orient Blackswan
2. *Spoken English: A Foundation Course*, Part- II by Kamlesh Sadanand & Susheela Punitha, Orient Blackswan

**Course Contents:**

Meeting People, exchanging greetings and taking leave

Introducing oneself and others to people

Giving personal information & talking about people, animals and places

Answering telephone calls and dealing with wrong numbers

Getting attention, giving instructions and seeking clarification

Making requests, giving & receiving directions and thanks etc.

Inviting others, accepting or refusing invitations

Exchanging compliments, congratulations, requests, and apologies

Exchanging opinions, advice and suggestions

Expressing likes, dislikes, hopes, wishes, regrets, sympathies, and emotions

Talking about quantity, manner, frequency and comparisons

Talking about past, present and future events, intentions, plans, purposes, arrangements

Expressing (un)certainty, (im)possibility, (im)probability, (in)ability, obligation, necessity and option

### **Distribution of Marks and Instructions for the Paper Setters**

#### **Theory:**

**Section-A:** 10 Marks

**Section-B:** 30 Marks

**Section-C:** 20 Marks

The questions will be based on the exercises given in the prescribed books *Spoken English: A Foundation Course*, Part- 1&2

#### **Field Work**

Visit to various places offering different situations and practicing conversation in actual situations. Students should be able to relate the situations in dialogues.

#### **On The Job Training**

To get apprenticeship training in conversational English for one month, Students may work in a Bank, a Hotel, a Computer Centre, an Air Lines Office etc.

**SEMESTER-IV**

**PUNJABI (COMPULSORY)**  
**ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ : 50

1. ਮੇਰੀ ਜੀਵਨਗਾਥਾ (ਸਵੈ-ਜੀਵਨੀ) : ਡਾ. ਦੀਵਾਨ ਸਿੰਘ,  
ਕਸਤੂਰਾ ਲਾਲ ਅਡ ਸਨਜ਼, ਆਮ੍ਰਿਤਸਰ।
2. ਫ਼ਾਸਲੇ (ਨਾਟਕ) : ਜਤਿੰਦਰ ਬਰਾੜ,  
ਨਾਨਕ ਸਾਧ ਪੁਸਤਕਮਾਲਾ, ਆਮ੍ਰਿਤਸਰ।
3. ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ
4. ਵਿਆਕਰਣ  
(ੳ) ਸ਼ਬਦ ਜੋੜਾਂ ਦੇ ਨਿਯਮ  
(ਅ) ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

ਅੰਕ ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

- |   |        |
|---|--------|
| 1. ਨਾਇਕ ਬਿੰਬ/ਸਵੈ-ਜੀਵਨੀ ਦੇ ਤੌਰ ਤੇ/ਵਾਰਤਕ ਸ਼ੈਲੀ                                    | 15 ਅੰਕ |
| 2. ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਟਕ ਕਲਾ (ਦੋ ਵਿਚੋਂ ਇੱਕ) ਜਾਂ ਚਾਰ ਵਿਚੋਂ ਦੋ ਪਾਤਰਾਂ ਦੀ ਪਾਤਰ ਉਸਾਰੀ | 15 ਅੰਕ |
| 3. ਦਫ਼ਤਰੀ ਚਿੱਠੀ-ਪੱਤਰ (ਦੋ ਵਿਚੋਂ ਇੱਕ)   | 10 ਅੰਕ |
| 4. ਲੜੀ ਨੰਬਰ ਚਾਰ ਉੱਤੇ ਨਿਰਧਾਰਤ ਵਿਆਕਰਣ ਵਿਚੋਂ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।          | 10 ਅੰਕ |

**SEMESTER-IV**

**PUNJABI (ELECTIVE)**

**ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ: ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ : 100

1. **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1701 ਤੋਂ 1900)**  
(ਸੰਪਾ. ਡਾ. ਰਤਨ ਸਿੰਘ ਜੱਗੀ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1992.  
(ੳ) ਸਾਹਿਤਕ ਰੂਪ, ਧਾਰਾਵਾਂ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ  
(ਅ) ਸਾਹਿਤਕ ਰੂਪਾਂ ਦੇ ਸਮੁੱਚੇ ਵਿਕਾਸ ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ (ਵਿਅਕਤੀਗਤ ਸਾਹਿਤਕਾਰ ਸੰਬੰਧੀ ਪ੍ਰਸ਼ਨ ਨਹੀਂ ਪੁੱਛਿਆ ਜਾਵੇਗਾ)। ਉਪਰੋਕਤ ਦੋਹਾਂ ਭਾਗਾਂ ਵਿੱਚੋਂ ਦੋ-ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿੱਚੋਂ ਪਰੀਖਿਆਰਥੀਆਂ ਨੇ ਇੱਕ-ਇੱਕ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨਾ ਹੋਵੇਗਾ ।  
**20+20=40**
2. (ੳ) I. ਦਿੱਤੇ ਪੈਰ੍ਹੇ ਵਿੱਚੋਂ ਸ਼ਬਦ-ਜੋੜਾਂ ਦੀ ਸੁਧਾਈ **5 ਅੰਕ**  
II. ਦਿੱਤੇ ਪੈਰ੍ਹੇ ਨੂੰ ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ ਲਾਉਣੇ **5 ਅੰਕ**  
(ਅ) ਆਲੋਚਨਾ-ਪ੍ਰਣਾਲੀ ਨਾਲ ਸੰਬੰਧਿਤ 8 ਮੂਲ ਸੰਕਲਪ : ਬਿੰਬ, ਪ੍ਰਤੀਕ, ਬੁਣਤੀ ਤੇ ਬਣਤਰ, ਕਥਾ ਤੇ ਕਥਾਨਕ, ਪਾਤਰ ਉਸਾਰੀ, ਰੂਪ ਤੇ ਵਸਤੂ, ਅਨੁਕਰਣ, ਵਿਰੋਚਣ (ਚਾਰ ਵਿੱਚੋਂ ਦੋ)  
**5+5=10**
3. ਸਾਹਿਤ ਰੂਪ : ਵਾਰ, ਜੰਗਨਾਮਾ, ਕਿੱਸਾ, ਕਾਫ਼ੀ : ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਤੱਤ (ਤਿੰਨ ਵਿੱਚੋਂ ਦੋ)  
**10+10=20**
4. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿੱਪੀ : ਮੁਢਲੀ ਜਾਣਕਾਰੀ (ਦੋ ਵਿੱਚੋਂ ਇਕ)  
(ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ **20 ਅੰਕ**  
(ਅ) ਗੁਰਮੁਖੀ ਲਿੱਪੀ : ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ

**SEMESTER-IV**

**Functional Punjabi**

**ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ  
(ਥਿਊਰੀ)**

ਪਰਚਾ ਏ :	ਲਿਖਣ ਸ਼ੈਲੀਆਂ	ਕੁਲ ਅੰਕ: 100
ਪਰਚਾ ਬੀ :	ਰਸਮੀ ਲਿਖਤਾਂ	ਅੰਕ: 50
		ਅੰਕ: 50
ਸਮਾਂ :	3 ਘੰਟੇ	ਕੁਲ ਅੰਕ: 50
1.	ਪ੍ਰਕਾਰਜੀ ਭਾਸ਼ਾ — ਦਫ਼ਤਰੀ ਭਾਸ਼ਾ, ਇਸ਼ਤਿਹਾਰੀ ਭਾਸ਼ਾ।	10 ਅੰਕ
2.	ਫਾਈਲਾਂ ਤੇ ਨੋਟਿੰਗ ਦੇਣ ਦੀ ਵਿਧੀ, ਚਿੱਠੀ ਪੱਤਰ ਲਿਖਣ ਦੇ ਪ੍ਰਕਾਰ: ਦਫ਼ਤਰੀ, ਪਰਿਵਾਰਕ ਅਤੇ ਸਮਾਜੀ ।	20 ਅੰਕ
3.	ਰਸਮੀ ਪੱਤਰ ਵਿਹਾਰ, ਐਕਸਪ੍ਰੈਸ ਪੱਤਰ, ਤਾਰ, ਦਫ਼ਤਰੀ ਆਦੇਸ਼, ਦਫ਼ਤਰੀ ਸੂਚਨਾ, ਪ੍ਰੈਸ ਨੋਟ ਆਦਿ ।	20 ਅੰਕ

**SEMESTER-IV**

**Functional Punjabi**

**ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ**

**(ਪ੍ਰੈਕਟੀਕਲ)**

ਸਮਾਂ : 2 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

(ਪ੍ਰੈਕਟੀਕਲ ਦੇ ਪੇਪਰ ਵਿਚ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਵਿਗਿਆਪਨ, ਨੋਟਿੰਗ ਅਤੇ ਨੋਟੀਫਿਕੇਸ਼ਨ ਲਿਖਣ ਦੀ ਸਮਰਥਾ ਦੀ ਪ੍ਰੀਖਿਆ ਲਈ ਜਾਵੇਗੀ)

- (ੳ) ਵਿਗਿਆਪਨ ਤਿਆਰ ਕਰਨਾ : ਨਿੱਤ ਵਰਤੋਂ ਦੀਆਂ 50 ਵਸਤਾਂ ਦੇ ਕੇ ਉਨ੍ਹਾਂ ਦੇ ਵਿਗਿਆਪਨ ਲਿਖਣ ਅਤੇ ਬੋਲਣ ਦਾ ਅਭਿਆਸ ਭਾਸ਼ਾ-ਪ੍ਰਯੋਗਸ਼ਾਲਾ ਵਿਚ ਕਰਵਾਉਣਾ।
- (ਅ) ਦਫ਼ਤਰਾਂ ਨੂੰ ਲਿਖੇ ਪੱਤਰ ਨੂੰ ਸਮੱਗਰੀ ਬਣਾ ਕੇ ਨੋਟਿੰਗ ਦੇਣ ਦਾ ਅਭਿਆਸ ਕਰਵਾਉਣਾ (30 ਪੱਤਰ)
- (ੲ) ਫ਼ਾਈਲਾਂ ਦੇ ਆਧਾਰ 'ਤੇ ਆਰਡਰ/ਨੋਟੀਫਿਕੇਸ਼ਨ ਲਿਖਣ ਦਾ ਅਭਿਆਸ ਕਰਵਾਉਣਾ ।

**ਅਮਲੀ ਸਿੱਖਿਆ :**

ਕਿਸੇ ਸਰਕਾਰੀ/ਅਰਧ ਸਰਕਾਰੀ/ਗ਼ੈਰ ਸਰਕਾਰੀ ਅਦਾਰੇ ਵਿਚ ਅਮਲੀ ਤੌਰ 'ਤੇ ਤਿੰਨ ਹਫ਼ਤੇ ਦੀ ਸਿਖਲਾਈ ਪ੍ਰਾਪਤ ਕਰਨੀ ਹੋਵੇਗੀ ਅਤੇ ਇਸ ਦੀ ਪ੍ਰੋਜੈਕਟ ਰਿਪੋਰਟ ਤਿਆਰ ਕਰਨੀ ਜ਼ਰੂਰੀ ਹੋਵੇਗੀ ।

**SEMESTER-IV**

**BCG-102:**

**ਮੁਢਲੀ ਪੰਜਾਬੀ**  
**(ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ ਤੇ ਸੱਭਿਆਚਾਰ)**  
**(In Lieu of Punjabi Compulsory)**

**Time: 3 Hrs.**

**Marks: 50**

**ਅੰਕਾਂ ਦੀ ਵੰਡ:-**

**ਭਾਗ ਓ:-** ਇਸ ਭਾਗ ਵਿੱਚ 15 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਵੱਲੋਂ ਕਿਸੇ 10 ਦੇ ਉੱਤਰ 30-40 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 2 ਅੰਕ ਹੋਣਗੇ।

**ਭਾਗ ਅ:-** ਇਸ ਭਾਗ ਵਿੱਚ 6 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਕਿਸੇ 3 ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ 400-500 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 10 ਅੰਕ ਹਨ।

- 1. ਸਿੱਖ ਧਰਮ ਦੀ ਸਥਾਪਨਾ ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ ਦਾ ਜੀਵਨ ਤੇ ਉਪਦੇਸ਼ (1469-1539):-** ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ ਦਾ ਜੀਵਨ, ਰੱਬ ਸਬੰਧੀ ਵਿਚਾਰ, ਗੁਰੂ ਦਾ ਮਹੱਤਵ, ਸਿੱਖਿਆਵਾਂ। ਸੰਗਤ-ਪੰਗਤ, ਗੁਰਗੱਦੀ ਦੀ ਸਥਾਪਨਾ ਇਸ ਦਾ ਸਮਾਜ ਤੇ ਪ੍ਰਭਾਵ।
- 2. ਸਿੱਖ ਪੰਥ ਦਾ ਵਿਕਾਸ:-** ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ ਤੋਂ ਗੁਰੂ ਰਾਮਦਾਸ ਜੀ ਤੱਕ (1539-1581):- ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ ਦਾ ਸਿੱਖ ਧਰਮ ਦੇ ਵਿਕਾਸ ਵਿੱਚ ਯੋਗਦਾਨ, ਗੁਰਮੁੱਖੀ ਲਿੱਪੀ, ਗੁਰੂ ਅਮਰਦਾਸ ਜੀ ਦਾ ਸਿੱਖ ਧਰਮ ਦੇ ਵਿਕਾਸ ਵਿੱਚ ਯੋਗਦਾਨ: ਗੋਇੰਦਵਾਲ ਸਾਹਿਬ ਦੀ ਸਥਾਪਨਾ, ਮੰਜੀ ਪ੍ਰਥਾ ਅਤੇ ਸਮਾਜਿਕ ਸੁਧਾਰ, ਗੁਰੂ ਰਾਮਦਾਸ ਜੀ ਦਾ ਯੋਗਦਾਨ, ਰਾਮਦਾਸਪੁਰਾ ਦੀ ਸਥਾਪਨਾ, ਮਸੰਦ ਪ੍ਰਥਾ।
- 3. ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਦੇ ਸਮੇਂ ਸਿੱਖ ਪੰਥ ਦਾ ਵਿਕਾਸ:-** ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਦਾ ਯੋਗਦਾਨ, (1581-1606), ਹਰਿਮੰਦਰ ਸਾਹਿਬ ਦਾ ਨਿਰਮਾਣ, ਆਦਿ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦਾ ਸੰਕਲਨ, ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਦੀ ਸ਼ਹਾਦਤ ਤੇ ਇਸਦਾ ਮਹੱਤਵ।

**ਸਬੰਧਿਤ ਪੁਸਤਕਾਂ:-**

1. 'ਸ਼ਿਰੋਮਣੀ ਸਿੱਖ ਇਤਿਹਾਸ' 1469-1708 ਡਾ. ਸੁਖਦਿਆਲ ਸਿੰਘ, ਸੰਗਮ ਪਬਲੀਕੇਸ਼ਨ, ਸਮਾਣਾ।
2. 'ਸੰਖੇਪ ਜੀਵਨ ਦਸ ਗੁਰੂ ਸਾਹਿਬਾਨ', ਗਿਆਨੀ ਜਗਤਾਰ ਸਿੰਘ ਰਾਏ ਮੋਰਾਵਾਲੀ ਆਜਾਦ ਬੁੱਕ ਡੀਪੂ, ਹਾਲ ਬਜਾਰ, ਅੰਮ੍ਰਿਤਸਰ।
3. 'ਸਿੱਖ ਇਤਿਹਾਸ' (1469-1765), ਪ੍ਰਿੰਸੀਪਲ ਤੇਜਾ ਸਿੰਘ, ਡਾ. ਗੰਡਾ ਸਿੰਘ ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ।
4. 'ਸਿੱਖ ਇਤਿਹਾਸ' ਭਾਗ ਪਹਿਲਾ, ਖੁਸ਼ਵੰਤ ਸਿੰਘ ਅਨੁਵਾਦਕ ਡਾ. ਗੁਰਦਰਸ਼ਨ ਸਿੰਘ ਔਲਖ ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ ਲੁਧਿਆਣਾ
5. 'ਪੰਜਾਬ ਦਾ ਵਿਰਸਾ' (ਪੰਜਾਬ ਦੇ ਸਭਿਆਚਾਰ ਦਾ ਵਿਕਾਸ) ਪ੍ਰਿੰਸੀਪਲ ਸਿੰਘ ਕਪੂਰ ਨਿਊ ਬੁਕ ਕੰਪਨੀ ਜਲੰਧਰ।
6. 'ਸਿੱਖ ਹਿਸਟਰੀ' 1469-1988 ਖੁਸ਼ਵੰਤ ਸਿੰਘ, ਨਵਯੁੱਗ ਪਬਲਿਸ਼ਰਜ ਨਵੀ ਦਿੱਲੀ।
7. 'ਸਾਡਾ ਇਤਿਹਾਸ' ਭਾਗ ਪਹਿਲਾ (1469-1708) ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ: ਸਤਿਬੀਰ ਸਿੰਘ ਨਿਊ ਬੁਕ ਕੰਪਨੀ ਜਲੰਧਰ।
8. 'ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ' (1469-1799) ਸ਼ਿਵ ਗਜਰਾਨੀ, ਮਦਨ ਪਬਲਿਸ਼ਰਜ ਪਟਿਆਲਾ।

**SEMESTER-IV**  
**HINDI (ELECTIVE)**

mi U; kl ] ukVd % I S) kfrdh] 0; kdj .k RkFkk HkfDrdky

l e; & 3 ?k. Vs

i wkkd% 100

ukV% ; g izu&i = rhu Hkxka es foHkDr gkskA

[k.M&, d

इस भाग में दस प्रश्न पूछे जाएंगे। इसका पांच पंक्तियों में उत्तर देना होगा। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न दो अंक का है। कुल अंक 20 हैं।

[k.M&nks

इस भाग में 12 प्रश्न पूछे जाएंगे जिन में से 8 प्रश्नों का उत्तर देना अनिवार्य है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 48 हैं।

[k.M&rhu

इस भाग में 4 प्रश्न पूछे जाएंगे। जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। प्रत्येक प्रश्न का उत्तर 5 पृष्ठों का होगा। कुल अंक 32 हैं।

fu/kkfjr ikB; dæ

- 1- निर्मला : मुंशी प्रेमचन्द, मिस्टर अभिमन्यु: लक्ष्मी नारायण लाल
- 2- सैद्धांतिकी: उपन्यास तथा नाटक की परिभाषा एवं तत्व
- 3- भक्ति काल: परिस्थितियां, स्वर्ण युग, काव्यधाराएं , विशेषताएं
- 4- सामान्य प्रचलित मुहावरे तथा लोकोक्तियां : अर्थ और वाक्य प्रयोग
- 5- विराम चिह्न, सामान्य प्रचलित समास, कारक(अनुप्रयोग)

fo"k; kuply vrd foHkktu

1. प्रथम खंड में चार प्रश्न मुहावरे तथा लोकोक्तियों से तथा शेष प्रश्न समास, विराम चिह्न तथा कारक से होंगे।
2. दूसरे खण्ड में छह प्रश्न व्याख्या संबंधी तथा छह प्रश्न पाठ्यक्रम में निर्धारित पुस्तकों(प्रतिपाद्य एवं उद्देश्य मूल्यांकन, रंगमंच, लेखक परिचय, निर्धारित कृति परिचय) से संबंधित होंगे। प्रत्येक में से 4-4 प्रश्नों का उत्तर देना अनिवार्य है।
3. तीसरे खण्ड में दो प्रश्न सैद्धांतिकी और दो प्रश्न भक्तिकाल से संबंधित होंगे। जिनमें से एक-एक प्रश्न का उत्तर देना अनिवार्य होगा।

**SEMESTER-IV**

**FUNCTIONAL HINDI (VOCATIONAL)**  
**QD' kuy fglñh**

I kekl; vupkn] vk' kq vupkn , oa fglñh I kfgR; dk vk/kfjud dky

I e; % 3 ?k/s

i wkkd % 60

- क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 10 हैं।
- ख) इस भाग में 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।
- ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। कुल अंक 20 हैं।

fu/kkfjr i kB; Øe

d½ vupkn] 'kñkoyh &

- बैंक, रेलवे, हवाई अड्डा तथा डाकतार विभाग में प्रयुक्त की जाने वाली शब्दावली का अंग्रेजी से हिन्दी, हिन्दी से अंग्रेजी अनुवाद करना (शब्दावली साथ संलग्न है)

[k½ vupkn % vFk] i fjHkk"kk vkš I kekl; i fjp;

- अनुवाद : स्वरूप, क्षेत्र, सीमाएँ, संभावनाएँ और समस्याएँ
- अनुवाद के गुण
- अनुवाद के प्रकार

x½ vk' kq vupkn

- आशु अनुवाद : सामान्य परिचय
- आशु अनुवाद : अर्थ, परिभाषा और विविध पर्याय
- आशु अनुवाद और सामान्य अनुवाद में अन्तर

- आशु अनुवाद : गुण और उत्तरदायित्व
- आशु अनुवाद : समस्याएँ और सीमाएँ
- आशु अनुवाद : निष्कर्ष अथवा सारांश के रूप में
- आशु अनुवाद : बैठक सभाओं और वाद-विवाद के निष्कर्ष की व्याख्या
- आशु अनुवाद : भाषण का सन्देश और व्याख्यानों का सार

?k½ fglnh l kfgR; dk vk/kfjud dky % i fjfLFkfr; kj fo'k'krk, j vkj fofo/k oknk rdA

vd foHkktu

- प्रथम खंड में भाग 'क' से 10 प्रश्न पूछे जाएंगे। 1×10=10
- द्वितीय खंड में भाग 'ख' और 'ग' में से प्रश्न पूछे जाएंगे। 5×6=30
- तृतीय खंड में भाग 'ख' और 'घ' में से प्रश्न पूछे जाएंगे। 2×10=20

**SEMESTER-IV**

**FUNCTIONAL HINDI (VOCATIONAL)**

QD'kuy fglunh

i z; ksx vkj ekf[kdh

i wkkid % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z; ksx ds fo'k; %

- आ जु - अनुवाद का अभ्यास : वाक्य, अनुच्छेद और भाषण
- लिखित भाषण का सारांश और संदे
- बैठक, सभाओं और वाद-विवाद का निश्कर्ष तैयार करने का अभ्यास
- पावर-प्वाइंट प्रस्तुति

**SEMESTER-IV**

**HINDI PATRAKARITA (VOCATIONAL)**  
(fglUnh i =dkfj rk)

fglUnh i =dkfj rk vkj j fM; ks

l e; & 3 ?k&/s

i wkk&d % 60

- क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 10 हैं।  
ख) इस भाग में 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।  
ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। कुल अंक 20 हैं।

fu/kkfj r i kB; Øe

¼d½ j fM; ks ys[ku ds fl ) kar  
¼k½ fglUnh Hkk'kk ea j fM; ks ys[ku

- समाचार बुलेटिन
- फीचर लेखन
- वार्ता लेखन
- नाटक लेखन
- विज्ञापन
- उद्घोषणा
- आँखों देखा हाल

¼x½ fo"ks'k dk; Øeka dk i d kj .k  
— त्यौहार, राष्ट्रीय-दिवस, चुनाव, आपदा

¼?k½ , Q-, e-j fM; ks

v&d foHkk&tu

- प्रथम खंड में भाग 'क', और 'घ' में से प्रश्न पूछे जाएंगे। 1×10=10
- द्वितीय भाग में भाग 'क' और 'ख' में से प्रश्न पूछे जाएंगे। 5×6=30
- तृतीय भाग में भाग 'ख' और 'ग' में से प्रश्न पूछे जाएंगे। 2×10=20

**SEMESTER-IV**

**HINDI PATRAKARITA (VOCATIONAL)**  
(fglUnh i =dkfj rk)

i z; kx vkj ekf[kdh

i wkkd % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z; kx ds fo'k;

- माइक पर बोलने का अभ्यास
- रेडियो आलेख-लेखन और वाचन का अभ्यास
- समूहवार बहस
- पावर-प्वाइंट प्रस्तुति

**SEMESTER-IV**  
**PHYSICAL EDUCATION**

**(THEORY)**

**Time: 3 Hours**

**Maximum Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Note: Instructions for the Paper Setters / Examiners. Each question paper may consist of three sections as follows:**

**Section-A: The candidates are required to attempt all the six questions. Each question carrying two marks. 6x2=12 Marks**

**Section-B: The candidates are required to attempt seven out of twelve questions. Each question carrying four marks. 7x4=28 Marks**

**Section-C: The candidates are required to attempt two out of four questions. Each question carrying ten marks. 10x2=20 Marks**

**Part-A**

1. Meaning, aims and types of Yoga.
2. The practice of Asans and their importance, meditative poses, Padma, Vajra, Sukh Asanas, Cultural poses, Halasan, Sarvangasana, Bhujangasna, Salbhasana, Dhanurasana, Chakarasana,
3. Pranayam, its types, objectives and Physiological values.
4. Sudhi kirya; its types, objectives and Physiological values.
5. Effect of Yogic and Physical exercises on various systems of the body.

**Part-B**

1. Respiratory system, Organs of respiratory, Mechanism of respiration.
2. Excretory system; Structure and functions of kidney and skin.
3. Endocrine system, Meaning of endocrine glands, functions and location of pituitary, thyroid and adrenal glands.
4. Nervous System : Its organs and functions.
5. Circulatory System: Heart and Its structure, Mechanism of circulation of Blood, various types of blood vessels.
6. Care, prevention of causes and cure of sports injuries (sprain, contusion, dislocation and fractures).

**SEMESTER-IV  
PHYSICAL EDUCATION  
(PRACTICAL)**

**Marks: 40**

Division of Marks: Athletics (12) + Games (12) + Ground Markings (3+3),  
Practical Note Book (5), Viva-Voce (5)

- **Athletics Performance** ----- 200M, High Jump for Boys  
200M, High Jump for Girls
  
- **Games (Boys & Girls)---- Fundamentals, Rules, Performance**  
**Hockey**  
**Wrestling**

**Books Recommended:**

1. Singh, Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi, 2000.
2. Tandan, D.K. et.al.: Scientific basis of Physical Education and Sports, Friends Publication, New Delhi, 2001.
3. Singh, Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang, G.S.: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University, Patiala, 2000.
5. Kang, G.S. and Deol, N.S.: An Introduction to Health and Physical Education, 21st Century, Patiala, 2008.

# SYLLABUS

FOR

## B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)

(Semester–V)

Examinations: 2018–19



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**GURU NANAK DEV UNIVERSITY**  
**AMRITSAR**

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**SEMESTER-V**

**POLITICAL SCIENCE**

**COMPARATIVE POLITICAL SYSTEMS (UK & USA)**

**Time: 3 Hours**

**Max Marks: 100**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**Unit-I**

**Theoretical Framework**

1. Meaning and Scope of Comparative Government and Politics.
2. Comparative Method.
3. **Systems Approach:** David Easton and Almond and Powell.

**Unit-II**

1. Features of British Political System.
2. Features of US Political System.
3. Executive in US: President, Powers, Position and Role,
4. Executive in UK: Monarchy, PM, Powers, Positions and Role.

**Unit-III**

1. **Legislatures in US & UK: Functioning and Changing Role.**
2. Political Parties and Pressure Groups in US and UK.

**Unit-IV**

1. **Judicial System in USA and UK:** Judicial Review in USA and Rule of Law in UK.
2. Unitary v/s Federal System, USA and UK.

**Books Recommended:**

1. Rod Hague and Martin Harrop, *Comparative Government and Politics*, New Delhi, Palgrave Macmillan, 2007.
2. G.A. Almond, G.B. Powell, K. Strom, R.J. Dalton, *Comparative Politics Today: A World View*, New Delhi, Pearsons, 2006.

3. J.C. Johari, *New Comparative Government*, New Delhi, Lotus Press, 2006, 4263/3, Ansari Road, Daryaganj, New Delhi-110002.
4. A.C Kapur and K.K. Misra, *Selection Constitutions*, New Delhi, S. Chand, 2006 (Sixteenth Revised Edition).
5. A.C. Kapur and K.K. Misra, *Selection Constitutions*, New Delhi, S. Chand, 2006 (Sixteenth Revised Edition).
6. S.N. Ray, *Modern Comparative Politics: Approaches, Methods and Issues*, New Delhi, PHI, 1999.
7. M.V. Pylee, *Select Constitutions of the World*, New Delhi, Universal Law Publishers, 2006 (Revised).
8. Judith Bara And Mark Lennigton, *Comparative Politics*, Sage, 2009
9. William R. Clarks, Matt Golder and Sona Nadenichek, *Principals of Comparative Politics*, CQ Press, 2012
10. December Green and Lenra Luhrmann, *Comparative Politics of the Third World*, Viva 2004
11. Vishnoo Bhagwan and Vidhya Bhushan, *World Constitutions*, Sterling, 2002
12. Daniele Caramani, *Comparative Politics*, Oxford, 2008
13. Vidhya Bhushan, *Comparative Politics*, Atlantic, 2008

**SEMESTER-V**

**HISTORY**

**HISTORY OF THE WORLD (1500-1956 AD)**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: The question paper will consist of two sections as follows:-**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

1. **Emergence of the Modern World:** Renaissance and reformation; Causes, effects of Renaissance in Europe; Martin Luther's Protestantism;
2. **French Revolution:** Causes; National Assembly; National Convention, Napoleon's rise to Power, Civil Works and Codes, Continental System, Downfall of Napoleon, Vienna Settlement.

**UNIT-II**

3. **Rise of Nationalism in Europe:** Impact of Industrial Revolution, Unification of Italy, Unification of Germany.
4. **The World War-I:** Causes, Course of the war, Treaty of Versailles; League of Nations.

**UNIT-III**

5. **Russian Revolution:** Causes, February Revolution, October Revolution; New Economic Policy.
6. **Rise of China and Japan:** The revolution of 1911; Rise of Communism in China; the Revolution of 1949; Opening up of Japan; Meiji restoration and the Modernization of Japan.

**UNIT-IV**

7. **Rise of USA as World Power:** Entry in the First World War; 14 points of President Wilson; New Deal of Roosevelt; 2nd World War and the USA.
8. **Causes & Results of 2nd World War:** Fascism in Italy; Nazism in Germany; Course of World War II; the UNO; the Cold War: NATO and the Warsaw Pact.

**Suggested Reading**

1. Lowe, Norman, *Mastering Modern World History*, Macmillan, New Delhi, 1997
2. Chakarbarti, Ranjan, *A History of the Modern World*, Ratan Sagar Private Limited. 2012
3. Rao, B.V. , *History of Modern World*, Sterling Publication Pvt. Ltd. New Delhi, 2012

**SEMESTER-V**

**JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)**

**ADVERTISING  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section-A** shall consist of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks.

**10x2=20**

**Section-B** shall consist of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks. **8x5=40**

**Section-C** shall consist of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks. **10x2=20**

Definition, need, concept and role; Difference in Publicity, Advertising, Propaganda, Types of advertising, Ad agencies-Organisational setup and functions, Copy Writing, Parts of an advertisement, Attributes of an effective copy, types, design and layout. Advertising and its impact. Modes of advertising, Appeals. Advertising Code, Advertising in Various media.  
Online advertising

**(PRACTICAL)**

**(20 Marks)**

Making 10 advertising portfolios

**SEMESTER-V**

**Mass Communication & Video Production**

**Video for Communication**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section-A** shall consist of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks. **10x2=20**

**Section-B** shall consist of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks. **8x5=40**

**Section-C** shall consist of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks. **10x2=20**

Question paper will be set in English only but the medium of examination will be English, Punjabi and Hindi.

**Video camera**

- Basic Design (Lens, Zoom, Aperture, Focal Length, Shutter)
- Camera Angles, Movements, Shots & Mountings
- Types of Cameras (VHS), Umatic, Betacam, High Eight, Video Eight)

Camera Crew (Director, Producer, Production Manager, Floor Manager, Art Director, Makeup Man, Dress Designer, Choreographer)

Lighting (Types, Luminants, accessories, lamps, & lighting problems)

Programme Proposal

Budgeting

Location Survey

Shooting Script

Pre & Post Production Meeting

Single Camera & Multicamera Shooting

Indoor & Outdoor Shooting

**PRACTICAL**

**Practical Marks: 20**

- Camera Handling
- Script Writing
- Making program proposal for any channel

**SEMESTER-V**  
**SOCIOLOGY**

**SOCIAL THOUGHT**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

- a) **Auguste Comte:** Law of three stages, Positivism
- b) **Herbert Spencer:** Social Darwinism and types of Society.

**UNIT-II**

- a) **Karl Marx:** Dialectical Materialism, Historical Materialism, class and class struggle and Alienation.

**UNIT-III**

- a) **Max Weber:** Theory of Social action, types of Authority, Protestant Ethic and Spirit of Capitalism.

**UNIT-IV**

- a) **Emile Durkheim:** Nature and Characteristics of Social facts, Division of Labour in Society and Theory of Suicide.

**Books Recommended:-**

1. Aryon Raymond: *Main Currents in Sociological Thought*, Vols. I, II, Penguin, Harmondsworth, 1968.
2. Abraham, M. Francis: *Contemporary Sociology*, Oxford University, New Delhi, 2006.
3. Ashley, David, Orenstein, D.M.: *Sociological Theory*, Dorling Kindersly, Delhi, 2007.
4. Coser, Lewis A: *Master of Sociological Thought*, Harcourt Brace Jovanovich, New York, 1971.
5. Jammu I.S.: *Samajak Vigyan Pattar*, No.-26-28, Punjabi University, Patiala, 1998.
6. Kapila, S.: *Fundamentals of Sociology*, Vol. III, Panchkula, Kapila Publishers, 2006.
7. Paramjit Singh Judge: *Samaj Vigyanik Drishtikon te Sidhant*, Panjabi University, Patiala, 1997.
8. Royce, Edward. 2015, *Classical Social Theory and Modern Society*. Jaipur: Rawat.
9. Ritzer, George. 2016, *Classical Sociological Theory*. New Delhi: McGraw Hill.
10. Judge, Paramjit Singh. 2012, *Foundations of Classical Sociological Theory*. New Delhi: Pearson.
11. Kundu, Abhijit. 2012, *Sociological Theory*. New Delhi: Pearson.
12. Abraham, F and J.H Morgan. 2014, *Sociological Thought*. New Delhi: Trinity Press.

**SEMESTER-V****WOMEN EMPOWERMENT****WOMEN EMPOWERMENT AND LAWS****Time: 3 Hrs.****Max. Marks: 100****Instructions for the Paper Setters:**

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I****Women and Labour Laws: Relevant Provisions:**

1. Minimum Wages Act 1948.
2. Equal Remuneration Act 1976.

**UNIT- II****Women and Labour Laws: Relevant Provisions:**

1. Employees State Insurance Act 1948
2. Maternity Benefit Act 1961

**UNIT-III****Women and Maintenance Laws**

1. Married Women and Property Act 1874
2. Married Women Property (Extension Act) 1959
3. Istri Dhan and Alimony.

**UNIT-IV****Women and Laws: Education and Politics**

1. National Plan of Action for Girl Child (1991 to 2000)
2. Women and Constitutional Amendments 73<sup>rd</sup>, 108<sup>th</sup>, 110<sup>th</sup>, 112<sup>th</sup>.

**SEMESTER-V  
PSYCHOLOGY**

**ABNORMAL PSYCHOLOGY-I  
(THEORY)**

**Time: 3 Hours**  
**Pass Marks: 35% of the subject**  
**(Theory and Practical Separately)**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section-A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 1½ marks; total weightage of the section being 15 marks.

**Section-B:** It will consist of short answer type questions with answers to each question up to two pages in length. Six questions will be set by the examiner and four will be attempted by the candidates. Each question will carry 9 marks: total weightage of the section being 36 marks.

**Section-C:** will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two; Each question will carry 12 marks. Total weightage of the section being 24 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Note:**

1. The use of Non-Programmable calculators and Statistical Tables are allowed in the examination.
2. Only one numerical question is to be set either of nine marks (from Section-B) or of twelve marks (from Section-C).

**Abnormality:** Concept and Criteria of Abnormality. Myth and Misconceptions regarding Abnormal Behaviour. DSM IV classification of Abnormal Behaviour- Advantages and disadvantages

**Theoretical Perspectives of Psychopathology:** Psychoanalytic, Cognitive Behavioural, Humanistic and Interpersonal (Sullivan).

**Causes of Abnormal Behaviour:** Primary, Predisposing, Precipitating reinforcing.

Biological Causes–(Genetic defects, constitutional liabilities, Brain dysfunction & Physical deprivation). Psycho-Social Causes–(Self-perception and cognitive maps, early deprivation, Inadequate parenting, pathogenic family structures, maladaptive peer relationship.

Socio-Cultural Causes–(Socio-Cultural Environment and Pathogenic societal influences).

**Stress & Coping:** Categories of Stressors, Factors Predisposing an individual to stress. Coping strategies.

**Stress Related Disorders:** Coronary Heart Disease (CHD), Hypertension Ulcers & Migraine Pain: Symptoms Causes and general treatment of stress related disorders.

**Alcoholism:** Misconception about Alcohol & Alcoholism, Clinical Picture, Causes, Treatment & Outcomes.

**Drug Addiction:** Clinical Picture, Causes and Treatment of Opium and its Derivatives, Sedatives (Barbiturates), Stimulants (Amphetamines & Cocaine): Hallucinogens (LSD & related drugs) Marijuana, Caffeine & Nicotine.

**Readings:**

1. Carson, R.C., Butcher, J.N. and Mineka, S. (1997), *Abnormal Psychology and Modern Life*, New York: Harper Collins.
2. Davison, G.C. and Neale, J.M. (1998), *Abnormal Psychology*, New York: John Wiley and Sons.
3. Sarason, I.G. and Sarason, B.R. (1996), *Abnormal Psychology*, New Delhi: Prentice Hall of India.
4. Singh, A. Asadharan Manovigyan, Punjabi University, Patiala.
5. Alloy, L.B., Riskind, J.H. & Manso, M.J. (2006), *Abnormal Psychology* Tata McGraw Hill Publishing Company, New Delhi.

**SEMESTER-V**

**PSYCHOLOGY**

**(PRACTICAL)**

**Marks: 25**

**Instructions for the Practical Examination:**

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

**Five Practical have to be performed out of the following:**

1. Word Association Test.
2. Adjustment Inventory.
3. Raven's Progressive Matrices/Cattell's Culture Fair Intelligence Test.
4. Measurement of Attitudes.
5. Measurement of Interests.
6. Locus of Control.

**SEMESTER-V**  
**DEFENCE AND STRATEGIC STUDIES**

**NATIONAL SECURITY OF INDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max .Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section-A:** The examiner shall set 10 short answer type questions from the entire syllabus and the candidates will attempt 7 questions carrying 4 marks each. Answer to each question shall not exceed half of the page. The total weightage of this section shall be 28 marks.

**Section-B:** The examiner shall set 8 questions from the entire syllabus—two from each Unit. The candidate shall attempt four questions, one from each Unit. Each question shall carry 13 marks. The total weightage of this Unit shall be 52 marks.

**Note:** *Practicals are only meant for the regular students. For the private students the two papers shall be of 100 marks each. For the private students, each question in Section B will be of 18 marks.*

**UNIT-I**

**i) National Security: Conceptual Aspects.**

**ii) Elements of National Security:**

- a) Geography
- b) Mineral resources
- c) Social, Political and Economic factors
- d) Scientific and Technological Development
- e) Military preparedness

**iii) India's Security Problems since Independence**

- a) Geo-political effects of partition
- b) Security problems related to Pakistan
- c) Security problems related to China

**UNIT-II**

**i) Indian Ocean and India's Security:**

- a) Geo-strategic importance of the Indian Ocean
- b) India's Economic, Political and Security stakes in the Indian Ocean
- c) Role of Indian Navy & Coast Guards

**ii) Nuclear Policy of India.**

### UNIT-III

**(i) Internal Dimension of India's Security:**

- a) Militancy in Jammu & Kashmir
- b) Insurgency in North eastern states
- c) Naxalism in India

**(ii) Disaster Management in India.**

### UNIT-IV

#### Planning for Natural Defence

- (i) Economic Mobilisation for national defence with reference to mobilization of Physical and Fiscal resources.
- (ii) Planning and Production for national defence.
- (iii) Major defence production Industries in India.

#### Suggested Readings:

1. Buzan, Barry (1987) : People Fear and State: New Delhi, Transasia Publications.
2. Bajpai, U.S. (1986) : India and its Neighbourhood: New Delhi, Lancer International.
3. Baranwal, S.P.(1984) : Measures of Civil Defence in India: New Delhi, Guide Publications.
4. Bobbing, Ross and Gordon, Sandy (eds.) (1992) : India's Strategic Future: Delhi, Oxford University Press.
5. Chatterjee, R.K. (1978) : India's Land Borders-Problems and Challenges: New Delhi, Sterling Publishers.
6. Chadhury, Rahul Roy (1995) : Sea Power and India's Security, London, Brassey's.
7. Dass S.T. (1987) : National Security in Perspective: Delhi, Gian Publishers.
8. Karnard, Bharat (1994) : Future Imperiled: New Delhi, Viking.
9. Kavic, Lorne J. (1967) : India's Quest For Security: Defence Policies 1947- 1965: Los Angeles, University of California Press.
10. Khera, S.S. (1968) : India's Defence Problems: New Delhi.
11. Menon, V.P. (1961) : The Story of the Integration of Indian States: New Delhi, Orient Longmans.
12. Misra, R.N. (1986) : Indian Ocean and India's Security: Delhi, Mittal Publications.
13. Nayar, V.K. (1992) : Threats From Within: New Delhi, Lancer Publications.
14. Rao, Ramakrishna and Sharma, R.C. (ed) (1991) : India's Borders: New Delhi, Scholars' Publishing Forum
15. Rao, P.V.R. (1970) : Defence Without Drift: Bombay, Popular Prakashan.
16. Singh, Jaswant (1999) : Defending India: Bangalore, Macmillan India Ltd.
17. Singh Nagendra (1974) : The Defence Mechanism and the Modern State: New Delhi, Asia Publishing House.
18. Venkateshwaran (1967) : Defence Organisation in India: New Delhi, Ministry of Information and Broadcasting, Government of India.

**SEMESTER-V**  
**DEFENCE AND STRATEGIC STUDIES**

**(PRACTICAL)**

**Time: 3 Hours**

**Teaching Hours: 3 Periods a Week**

**Written: 1 Hour**

**Marks: 20**

**Written: 10**

**Discussion: 05**

**Record and Viva-Voce: 05**

**Note:** The paper for written test is to be given by the external examiner on the spot. Internal examiner has to assist him in the conduct of the examination.

**Group – A**

**10 Marks**

1. Relief features and their representation on the Map.
2. Types of slopes and their representation on the Map.
3. Study of field craft with reference to the following:
  - (a) Ground
  - (b) Cover
  - (c) Camouflage
  - (d) Concealment
  - (e) Observation.

**Group – B: Group Discussion (Topics)**

**05 Marks**

- (a) India's Nuclear Policy.
- (b) Maritime Security of India.
- (c) Sino-India Relations

**Group – C**

**Record and Viva-Voce**

**05 Marks**

**SEMESTER-V  
GEOGRAPHY**

**WORLD REGIONAL GEOGRAPHY-I  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 70  
Practical Marks: 30**

**Objectives:**

To provide an understanding of:

- \* The geographic dimensions of the world regions in terms of their political and administrative characteristics.
- \* The physical and human resource base and their interface with economic development.
- \* Development problems and prospects.

**Note: Instructions for the Paper Setters and Candidates**

1. Question will be put on region(s) as a whole and not on individual country. The question should focus on regional perspective.
2. A compulsory question containing 15 short answer type questions will be set covering the whole syllabus. The students will attempt any 10 parts in about 40-50 words each. Each part will carry 3 marks. **(Total 30 marks)**
3. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt four questions selecting one from each unit. This will be in addition to the compulsory question at note number 2. **(Total 40 marks)**.
4. Stencil outline maps are allowed.

**Course Contents:-**

Study of the following regions of the world in terms of the aspects mentioned in each unit.

1. Anglo America
2. Middle East and North Africa

**UNIT-I**

- |                       |                                 |
|-----------------------|---------------------------------|
| a) Location           | b) Physiographic divisions      |
| c) Drainage & Climate | d) Soils and Natural Vegetation |

**UNIT-II**

- a) Major minerals    b) Agricultural crops & related occupations

**UNIT-III**

- a) Industries

#### UNIT–IV

- a) Demographic Characteristics
- b) Trade and Transport
- c) Problems and Prospects

#### **Books Recommended:**

#### **Essential Readings:**

1. Blij, Harm J.de Peter, O. Muller: *Geography: Realms, Regions and Concepts, 16<sup>th</sup> Edition*, John Wiley, New York, 2013.
2. English, Paul Ward & James, A. Miller: *World Regional Geography: A Question of Place*, John Wiley, New York, 1989.
3. Jackson, Richard H. & Lloyd E. Hudman: *World Regional Geography Issues for Today*, John Wiley, New York, 1991.
4. Kromm, D.E.: *World Regional Geography*, Saunders Publishing, New York, 1981.

#### **Further Readings:**

1. Don R. Hoy (Ed.): *Essentials of Geography and Development*, Macmillan, New York, 1984.
2. Mankoo, Darshan Singh: *A Regional Geography of the World*, Kalyani Publishers, Ludhiana, Reprint 2015.
3. Singh, Malkiat : *World Regional Geography*, Rasmeet Prakashan, Jalandhar, (Pb.), Reprint 2015
4. Trikha, R.N. and Bali P.K. and Sekhon, M.S.: *World Regional Geography*, New Academic Publishers, 2002.

#### **Pedagogy**

Teaching should involve maximum use of detailed maps of the countries, Students should be encouraged to use atlas in classrooms. Video shows about culture, physiography and economy of these countries may be arranged if possible.

**SEMESTER–V  
GEOGRAPHY**

**MAP PROJECTIONS  
(PRACTICAL)**

**Time: 3 Hours**

**Max. Marks: 30**

**Written Paper of 3 Hours: 15 Marks**

**Practical Record (File): 08 Marks**

**Viva: 07 Marks**

**Objective:**

- To provide an analytical understanding of constructions, properties, limitations and use of cylindrical and conical map projections.

**UNIT–I**

General introduction and classification of projections, constructions, properties, limitations and use of projections.

Construction, properties and limitations of following map projections:

Cylindricals: Plate Caree, Equal-Area and Mercator's.

**UNIT–II**

Construction, properties and limitations of following map projections:

Conicals: One Standard Conic, Two Standard Conic, Bonne's, Polyconic and International.

**Note:**

1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 UNITS. Eight questions will be set out of the whole syllabus, four from each UNIT. The students will be required to attempt two questions from each UNIT. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number 1. (Total 12 marks)
3. Evaluation of Practical record will be done at the time of viva–voce examination.
4. In case the candidate has applied for the improvement, he/she should be required to make a fresh practical note book.
5. For practical classes, the number of students in one group shall not exceed fifteen.

**Books Recommended:**

1. Kellaway, George P.: *Map Projections*, Methue and Co., London.
2. Singh, Gopal: *Mapwork and Practical Geography*, Surjeet Book Depot, Delhi, 1993.
3. Singh, Malkiat: *Cartography*, Rasmeet Prakashan, Jalandhar, **Reprint 2014**.
4. Singh, L.R: *Practical Geography*, Chaitanya, Publishing House, Allahabad

**SEMESTER-V**  
**PUBLIC ADMINISTRATION**

**LOCAL GOVERNMENT (WITH SPECIAL REFERENCE TO PUNJAB)**

**Time: 3 Hours**

**Max. Marks: 100**

**(Instructions to Mass Communication)**

The question paper will consist of two sections as per following pattern:

**Section-A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section-B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT-I**

**Introduction:**

Meaning and Significance of Local Government. History of Local Government in India. Main Features of 73rd and 74<sup>th</sup> Constitutional Amendments, State-Local Government Relations; Role of State Finance Commission.

**UNIT-II**

**Urban Local Government:**

Main features of Urban Local Government in Punjab, Types of Urban Local Bodies, Municipal Corporation, Organisation and Functions, Municipal Commissioner, Mayor, Provincialisation of Municipal Services.

Municipal Council: Organisation and Functions; President, Executive Officer.

**UNIT-III**

**Rural Local Government:**

Main features of Panchayati Raj System in Punjab; Gram Sabha. Village Panchayats-Structure, Finance and Functions. Recommendations of Punjab Finance Commission. Panchayat Samitis-Structure, Finance and Functions. Zila Parishads-Structure, Finance and functions.

#### UNIT-IV

##### **State Control:**

Organisation of Department of Local Government in Punjab. Relation of Local Government Institutions with District Administration. State control over Panchayati Raj Institutions and Urban Local Government.

##### **Suggested Readings:**

1. Dubey V.P., Urban Development and Administration, Deep & Deep Publication Pvt. Ltd., 1990.
2. Goel S.L., Urban Administration in India, New Delhi, Deep & Deep Publication Pvt. Ltd., 2003.
3. Hoshiar Singh, Theory and Practice of Local Government, Allahabad, Kitab Mahal, 1999.
4. Maheshwari S.R., Local Government in India, Agra, Lakshmi Narain Aggarwal, 2005.
5. Sachdeva Pardeep, Urban Local Government in India, Allahabad, Kitab Mahal, 2002.
6. Sahib Singh and Swinder Singh, Local Government in India, Jalandhar, New Academic Publishing Co., 2005.
7. Sachdeva D.R., Sathanak Sarkar: Punjab De Sandarbh Vich, Publications Bureau, Patiala, 2003.

**SEMESTER-V****ECONOMICS****ECONOMICS OF DEVELOPMENT****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT-I**

**Economic Development:** Meaning and Measurement, Economic and Non-Economic Factors, Nature of Underdevelopment, Characteristics of Undeveloped Countries. Human Development Index, Concept of Sustainable Development.

**Dualism:** Social and Technological Dualism, Lewis Model of Unlimited Supply of Labour, Problems of Unemployment and Disguised Unemployment.

**UNIT-II**

**Models of Growth:** Classical, Marxian, Schumpeter's, Harrod-Domar and Solow's Growth Models.

**UNIT-III**

Rostow's Stage Theory, Strategies of Economic Development-Balanced vs. Unbalanced Growth; Theory of Big Push; Libenstein's Critical Minimum Efforts Thesis, Export Promotion and Import Substitution.

**UNIT-IV**

Capital Formation – Meaning and Sources. Choice of Technique, Role of Planning in Under Developed Countries, Need, Objective, Strategy, Types and Problems of Planning.

**Suggested Readings:**

1. Rostow W.W.: Stages of Growth
2. G.M. Meier: Leading Issues in Economic Development.
3. Micheal Todaro: Economic Development in the Third World.
4. Higgins: Economic Development: Theory and Politics.
5. Meier, G.M.: Leading Issues in Economic Development, Oxford University Press, New Delhi, 1995.
6. Thirlwall, A.P.: Growth and Development, Macmillan, London, 1999.
7. Todaro, M.P.: Economic Development in Third World, Oxford University, London.
8. Yotopoulos, P.A. and Nugent, J.: Economics of Development, Harper and Row, New York.

**SEMESTER-V**  
**INDUSTRIAL ECONOMICS**

**INDUSTRIAL ECONOMICS-V**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT-I**

Pattern and Rationale of Industrialisation in Developing Economy Like India; Factors Promoting and Inhibiting Industrialisation.

Industrialisation in India—Evolution of Modern Industry, Evolution of Industrial Policy—1948, 1951, 1956, 1991 and onwards.

**UNIT-II**

Role of Public Sector; Recent Trends in Indian Industrial Growth—Liberalization and Privatization; Small Scale Industry in India.

**UNIT-III**

Regional Industrial Growth in India; Industrial Concentration: Meaning, Measurement and Remedial Measures.

Issues in Industrial Proliferation and Environmental Preservation; Pollution Control Policies.

**UNIT-IV**

Institutional Industrial Finance: IDBI, ICICI, SFC, SIDC and Commercial Banks

**Recommended Readings:**

1. Sutcliffe, R.B.: Industry and Under-development, Addison Wesley, London.
2. Kuchhal, S.C: The Industrial Economy of India chaitanya, Allahabad, 1969.
3. Gadgil, D.R.: The Industrial Evolution of India in recent time 1860-1939, Oxford University Press, Delhi, 1979.
4. Ahluwalia, I.J.: Industrial Growth in India Stagnation Since mid 1960's.
5. Goyal S.K.: Monopoly Capital Public Policy, Allied, New Delhi, 1979.
6. Chadha, V. and G.S. Bhalla: Indian Industrial Development: The Post Reform Scene.
7. Brahmananda, P.R. and V.R. Panchmukhi: The Development Process of the Indian Economy, Vikas Publications, New Delhi, 1979.
8. Datta, B.: Indian Planning at the Crossroads.
9. Savdesara, T.C.: Industrial Policy and Planning-1947-91: Tendencies, Interpretation and Issues.
10. Kelkar, V.C. and V.V. Bhanoji Rao: Indian Development Policy Imperatives.

**SEMESTER-V**  
**QUANTITATIVE TECHNIQUES**

**QUANTITATIVE TECHNIQUES-V**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT-I**

**Sampling Distributions:** Derivation of properties of Z, T, Chi Square and F distributions.

**UNIT-II**

**Statistical Inference:** Point & Interval Estimation; Properties of a Good Estimator, Maximum Likelihood Method of Estimation, its applications for Binomial, Poisson and Normal distributions. Basic Concepts of Null and Alternative Hypotheses, Types of Errors; One Tailed and Two Tailed Tests, Power of Test, Critical Region.

**UNIT-III**

Tests of significance based on normal deviate (Z), T, Chi square and F statistics.

**UNIT-IV**

**Analysis of Variance:** Introduction, Assumptions, Techniques of Analyzing Variance, Analysis of Variance of one-way and two-way classified data.

**Books Recommended:**

1. Sukhatne and Sampling Theory of Surveys with Sukhatme Applications (1970).
2. Goon, Gupta and An Outlines of Statistical Theory, DASS Gupta Vol. 1(1977).
3. Kapur and Gupta Fundamentals of Mathematical Statistics, Sultan Chand, New Delhi.
4. Murry, R. Spiegel Statistics: Theory & Practical (1972), McGraw Hill, New York.

**SEMESTER-V**  
**AGRICULTURAL ECONOMICS AND MARKETING**

**AGRICULTURAL ECONOMICS-III**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT-I**

Mobilisation and Determinants of Agricultural Surpluses; Terms of trade between Agriculture and Industry. Farmers terms of trade with special reference to Punjab and their implication for development.

**UNIT-II**

Income and Price Elasticities of Agricultural Commodities, Cobb-Webb Model. Price Expectations and Uncertainties, Market Risk, Price Stabilization Measures.

**UNIT-III**

Food System and Food Safety, Food and Nutritional Security, Food Security Nets, Foodgrain losses at different stages. Measures to contain foodgrain losses. Food Subsidies, Global Environmental Change and Food Security.

**UNIT-IV**

Marketable and Marketed Surplus, Supply Response of Marketed surplus to prices, size distribution of marketable surplus. Backward bending supply curve. Price expectations and uncertainties, market risk, price stabilization measures.

**Recommended Readings:**

1. Mamoria, C.B., Agricultural Problems of India, Kitab Mahal, 1985.
2. Kaur, Rajbans, Agricultural Pricing Policies in Developing Countries, Kalyani Publishers, 1984.
3. Chand, Mahesh and Srivastava, A.K., Economics Analysis and Management in Agriculture, Oriented Publishers, 1978.
4. Kainth, G.S., Foodgrain Marketing System in India, Associated Publishing House, 1982.

**SEMESTER-V**  
**RURAL DEVELOPMENT**

**RURAL DEVELOPMENT-V**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT-I**

Rural industries: Meaning and Importance; Problems and Difficulties, Measures for Development; Government Policy.

Agro-Industries: Meaning and features; Importance and Present status; Problems and Remedies.

**UNIT-II**

The nature of agricultural and industries production system and their relationships; Public and Private delivery system and their importance.

**UNIT-III**

Delivery system for supplies of inputs like seeds, fertilizers, insecticides etc. Agricultural supply chains, Public Distribution System.

**UNIT-IV**

Rural Poverty: Problems and Magnitude; Causes and Remedies; Government Policies.

Role of irrigation and power in rural development; Forests and Forestry Development; Major Problems; Lines of Development; Government Policy.

**Suggested Readings:**

1. Aggarwal, A.N. and Kundan Lal: Rural Economy of India.
2. Mukerjee, K.B.: Community Development in India.
3. Desai, A.R.: Rural Sociology in India.
4. Jammu, P.S. (ed) Pendu Punjab vich Samajak Parvartan (special issue of Samajik Vigyan Pattar) Punjabi University, Patiala.
5. Jammu, P.S. Hindustan Vich Samuda Vikas, Punjabi University, Patiala.
6. Bhattacharya, S.N.: Rural Industrialization in India.
7. Dhese, A.S. and Gurmail Singh: Rural Development in Punjab, A success story going astray, Routledge, New Delhi, 2008 (Edited book).

**SEMESTER-V**

**OFFICE MANAGEMENT AND SECRETARIAL PRACTICE  
(VOCATIONAL)**

**OFFICE PRACTICE  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 60  
Practical Marks: 40**

**Note: The candidates are allowed to use simple (Non-Scientific) calculators.**

**Section-A:** The examiner will set 8 short questions from the entire syllabus. The candidate will have to attempt 6 questions out of 8 questions. Each question carrying 2 marks

**(6x2=12 Marks)**

**Section-B:** The examiner will set 8 long questions in four parts, 2 questions from each unit. The candidate will have to attempt 4 questions selecting at least one from each unit. Each question carrying 12 marks.

**(4x12=48Marks)**

**UNIT-I**

**Office Stationery:** Types of papers and envelopes, control of consumption of papers, ink typewriting ribbons, carbon papers, pins, clips, erasers etc. issue thereof, stock and stock record.

**UNIT-II**

**Duplication Methods:**

Photocopying

**Meeting:** Notice, agenda, physical facilities, quorum, providing secretarial assistance.

**UNIT-III**

**Using Information:**

Using knowledge of making use of Information from different sources. Telephone Directory, Post Office Guide, Railway Time Table, Teleprinter, Telex, Fascimile Telegraphy.

**UNIT-IV**

**Making Travel Arrangement:** Preparing tour programme, railways and air reservation, booking hotel accommodation, filling of form for tour advance, preparing T.A. Bills.

**(PRACTICAL)**

**1. Practice on Operating the following machines:-**

- |                  |          |
|------------------|----------|
| - Duplicator     | 6 hours  |
| - Photocopier    | 6 hours  |
| - Wood Processor | 20 hours |
| - Scanner        | 8 hours  |

**2. Working in the Office:**

- Maintenance of Register
- Preparation of notice, agenda, resolutions

**3. Telephone Handling**

**SEMESTER-V  
TRAVEL & TOURISM**

**WORLD TRAVEL GEOGRAPHY**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

The Theory paper consists of two Parts A and B (short questions and long questions).

**Part-A:** The examiner will set 12 short questions, 3 questions from each section of 02 marks each.  
The candidate will have to attempt 10 questions out of 12 questions.

**(10x02=20 Marks)**

**Part-B:** The examiner will set 8 long questions, 2 questions from each section of 20 marks each.  
The candidate will have to attempt 4 questions out of 8 question.

**(04x20=80 Marks)**

**UNIT-I**

**Chapter 1. Fundamentals of Geography**

Importance of Geography in tourism,  
Climatic variations, climatic regions of world

**Chapter 2. Study of Maps**

Longitude & latitude,  
International Date Line,  
Time variations and time difference

**UNIT-II**

**Chapter 3. Popular Destinations-1**

United States of America and Europe  
African Wildlife

**Chapter 4. Popular Destinations-2**

Islamic Middle East  
South East Asia and Australia

**UNIT-III**

**Chapter 5. Seven Wonder of the World**

Great Pyramid of Giza, Hanging Gardens of Babylon,  
Statue of Zeus at Olympia, Temple of Artemis at  
Ephesus, Mausoleum of Maussollos at Halicarnassus,  
Colossus of Rhodes, Lighthouse of Alexandria.

**Chapter 6. Modern Wonders**

Great Wall of China, Petra (Jordan). Christ the  
Redeemer (Brazil), Machu Picchu (Peru), Chichen  
Itza (Mexico), Roman Colosseum (Italy), Taj Mahal (India).

#### UNIT-IV

##### **Chapter 7. Globalisation and Tourism**

Globalisation and Tourism in India,  
Incredible India campaign

##### **Chapter 8. Heritage and Challenges to Growth of Tourism**

What is Heritage and why should it be conserved  
World Heritage Monuments of India  
Reasons for slow growth rate of Tourism in India.

##### **Suggested Readings:**

1. Allchin, B. Allchin, F.R. et al. (1989) Conservation of Indian Heritage, Cosmo Publishers, New Delhi.
2. Ashworth, G.T. (2000), The Tourist Historic City. Retrospect and Prospect of Managing the Heritage City, Pergamon, Oxford.
3. Dixit, M. Tourism Products, Royal Publishers.
4. Hall, CM and Page, SJ. The Geography of Tourism and Recreation, Routledge.
5. New Inskip, Edward, Tourism Planning: An Integrated and Sustainable Development Approach (1991) VNR, New York.
6. Pearce, D.G. and Butler, R.W. Contemporary issues in tourism development, Routledge.
7. UNESCO-IUCN (1992) Eds. Masterworks of Man and Nature, Pantoga, Australia.

**SEMESTER-V****TOURISM AND HOTEL MANAGEMENT  
(THEORY)****Time: 3 Hours.****Max. Marks: 100****Theory Marks: 80****On the Job Training Marks: 20****Instructions for the Paper Setter:**

The following pattern of setting of question paper shall be observed. The question paper covering the entire course shall be divided into three sections as follows:

**Section-A:** This section will consist of 7 very short answer type questions with answers to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being **14 marks**.

**Section-B:** This section will consist of short answer type questions with answers to each question upto two pages. Nine questions will be set by the examiner and the candidates will be expected to attempt six questions. Each question will carry six marks; total weightage of the section being **36 marks**.

**Section-C:** This section will consist of essay type questions with answer to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 15 marks, total weightage of the section being **30 marks**.

**UNIT-I****Front Office**

- I. Front office as an operational department.
- II. Job description of front office assistant.
- III. Lobby:
  - Duties & responsibilities of lobby manager.
  - Organization of bell desk and functions.
  - Left luggage handling.
  - Guest errand cards.
  - Mail Message handling.
  - Wakeup call procedure.
- IV. Check in-Check out procedure, Guest folio, safety locker management.
- V. Processing housekeeping discrepancy.

## UNIT-II

### Housekeeping

- I. Housekeeping department-recruitment & selection.
- II. Floor linen room
  - Type of linen and use.
  - Par stock, safety stock, lead time quantity, Max. Qty, Min. Qty.
  - Inventory control.
  - Exchange of linen and uniforms.
- III. Interior Decoration, color, furniture, fixture and lighting in hotel.
- IV. Laundry Service.
- V. Housekeeping Practice.
  - Lost & found procedure.
  - Pest control.
  - Turn down service.
  - Key Control.

## UNIT-III

### Food and Beverage Production:

- I. Work Method in food preparation.
- II. Different type of soups.
- III. Curry powder used in Indian Cookery:
  - Gram masala, Pulao masala, Sambar masala, Rasam powder, Chaat masala, Meat masala.
- IV. Vegetables and salads.
- V. Meat (lamb, beef, pork) Poultry.
- VI. Basic Indian Gravies :
  - Yellow gravy.
  - White gravy.
  - Butter gravy.
  - Onion tomato masala.

## UNIT-IV

### Food and Beverage Service:

- I. Organization structure of F & B Service Deptt.
- II. Preparation for Service:
  - Mise-en-essance
  - Mise-en-place
  - Side board
- III. Type of Services:
  - English service.
  - French service.
  - Russian service.
  - American service.
  - Room service.
  - Geuridon service.
- IV. Briefing and check point for supervisor.

- V. Beverages (alcoholic, Non-alcoholic)
  - Procedure for serving table wine.
- VI. Cheese

**Students has to go for two months of specialized industrial training in a travel agency or in a hotel.**

**Specialized Industrial Training of 8 weeks**

The final year students are supposed to undertake practical training either in a hotel or a travel agency for at least two month. The project report will be submitted to college before examination and will be evaluated by external examiner.

The internal assessment shall be based on periodical tests, written assignment and behaviour in the class.

**Suggested Readings:**

- 1 Andrew Sudhir, *Food and Beverage Sersvice*, Tata McGrew Hill Publications, New Delhi, 38th Edition, 1991.
- 2 Andrew Sudhir, *Front Office Training Mannul*, Tata McGrew Hill Publications, New Delhi.
- 3 Koontz, H. Wandrich *Essentails of Management*, Tata McGraw Hill, Publishers, New Delhi, 1990.
- 4 Sudhir Andrew, *Hotal House Keeping*, Tata McGraw Hill Publishing Co. Ltd.
- 5 Negi Jagmohan *Hotels for Tourism Development*, Metropolitan, New Delhi, 2nd Edition, 1997.
- 6 Arora, Krishna, *Victory of Cookery*, Frank Bros. & Co. Publishers Ltd.

**SEMESTER-V**

**TAX PROCEDURES AND PRACTICE (VOCATIONAL)**

**GOODS AND SERVICES TAX (GST)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

The following pattern of setting of question paper shall be observed:

The question paper covering the entire course shall be divided into three sections as follows:-

**Section-A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being **16 marks**.

**Section-B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being **48 marks**.

**Section-C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions, will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being **36 marks**.

**Part-I**

**GST Act 2017:** Overview, Constitutional aspects, Implementation, Liability of Tax Payer, GST Council, Brief Introduction to IGST, CGST, SGST and UGST. Levy and collection.

**Exemption from GST:** Introduction, Composition Scheme and remission of Tax.

**Registration:** Introduction, Registration Procedure, Special Persons, Amendments / Cancellation.

**Supply:** Concept, including composite supply, mixed supply, interstate supply, intra-state supply, supply in territorial waters, place and time of supply.

**Part-II**

**Input Tax Credit:** Introduction, Tax Invoice Credit & Debit notes, e-way bill.

Computation of GST Liability and Payment including time, method of making payment, challan generation, CPIN, TDS &TCS. Reverse charge.

**Returns:** various returns to be filed by the assesses.

**GST Portal:** Introduction, GST Eco-system, GST Suvidha Provider (GSP), Uploading Invoices

**Suggested Readings:-**

1. Taxmann: Taxmann's GST Manual 2017. Taxman, Publications (P) Ltd.
2. Datey V.S., Taxmann's GST Ready Reckoner Taxman, Publications (P) Ltd.
3. Gupta S.S., GST-How to meet your obligations 2017. Taxman, Publications (P) Ltd.
4. www.cbec.gov.in

**SEMESTER-V****ADVERTISING, SALES PROMOTION AND SALES MANAGEMENT (VOCATIONAL)****MANAGEMENT OF THE SALES FORCE****Time: 3 Hours****Max. Marks: 100**

The following pattern of setting of question paper shall be observed.

**Instructions for the Paper Setters:**

**Section-A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

**Section-B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

**Section-C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

**UNIT-I**

Importance of the sales force and its management

Functions of Sales Manager

Recruitment and Selection

**UNIT-II**

Training and Direction

Motivation and Compensation

Appraisal of Performance

**UNIT-III**

Sales force size, organisation of the sales department: Geographic, Product Wise, Market based.

Sales Planning and Central: Market analysis and Sales for Casting. Methods of forecasting sales.

Sales Budget: Importance, Process of sales budget, uses of sales budget.

#### UNIT-IV

Sales territory: Considerations in allocation of sales territory.

Sales quota: Objectives, principles of selling sales quota administration of sales quota. Uses of Sales quota.

Sales and cost analysis: Uses and Methods.

#### **Suggested Readings:**

1. Johnston, Mark W. & Greg W. Marshall, Sales Force Management, McGraw Hill, 2008.  
(Richard D. Irwin).
2. Kotler, Philip, K.L. Keller, Abraham Koshy & Mithileshwar- Jha, Marketing Management PHI, 13th ed., 2007.

**SEMESTER-V****COMMERCE**

**ANY ONE OF THE FOLLOWING OPTIONS:-**

**OPT. (I) COMPUTER AIDED ACCOUNTING**

**OPT. (II) MATERIALS MANAGEMENT**

**OPT. (III) TYPING AND SHORTHAND**

**OPTION (I): COMPUTER AIDED ACCOUNTING**

**Time: 3 Hours**

**Max. Marks: 100**

**Note:** i) The candidates are allowed to use simple (Non-Scientific) Calculators.  
ii) Each question paper will consist of three sections as follows:-

**Section-A: It** will consist of 10 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry 2 marks; total weightage of the section being **20 marks**.

**Section-B: It** will consist of short answer questions with answer to each question upto two pages in length. Twelve questions will be set by the Examiner and eight will be attempted by the candidates. Each question will carry 6 marks. The total weightage of the section being **48 marks**.

**Section-C: It** will consist of essay type questions with answer to each question upto five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will be carry 16 marks; total weightage of the section being **32 marks**.

**UNIT-I**

Introduction to Computers: Early developments, Computer generations; information representation and storage; basic concepts of Boolean algebra; Binary arithmetic operations; hardware and software; Concepts of data and information; fields, records, files.

**UNIT-II**

Definition of data processing, types of data processing; data processing cycle; common data processing operations; data capture and validation; data validation techniques; introduction to data storage devices.

### **UNIT-III**

#### **Problem Solving basic Programming**

Problem solving on computers: Algorithms and flowcharts; programming languages and BASIC: Introduction to BASIC language; constants, variables and expressions; Communication with the computer.

### **UNIT-IV**

Program control, Commands; repetitive computations, arrays and subscripted variables; functions and subroutines; string data manipulation, graphics commands.

Software Lab: Accounting Problems based on the above syllabus. The students are required to develop programmes for various accounting problems.

#### **Suggested Readings:**

1. Martin and Seymour: Data Processing (Schaum Series, McGraw Hill, 1984).
2. Gotterfried: Programming with BASIC (Schaum Series, McGraw Hill, 1986).
3. Pradeep K. Sinha, Priti Sinha: Computer Fundamentals, BPB Publications, 2005.
4. Grover: Programming in BASIC (Allied Publishers, New Delhi, 1987).

**SEMESTER-V**

**COMMERCE**

**OPTION (II): MATERIALS MANAGEMENT**

**Time: 3 Hours**

**Marks: 100**

**Teaching Hours: 80**

**Period of 45 minutes each**

**Note:** i) The Candidates are allowed to use simple (Non-Scientific) Calculators.

ii) Each question paper will consist of three sections as follows:-

**Section-A:** It will consist of 10 very short-answer questions with answers to each question upto Five lines in length. All questions will be compulsory. Each question will carry two marks; Total weightage of the section being **20 marks**.

**Section-B:** It will consist of short answer questions with answer to each question upto two pages in length. Twelve questions will be set by the examiner and eight will be attempted by the candidates. Each question will carry 6 marks: total weightage of the section being **48 marks**.

**Section-C:** It will consist of essay type questions with answer to each question upto five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 16 marks; total weightage of the section being **32 marks**.

**UNIT-I**

Nature and scope of materials management, objectives and functions of materials management; organization of materials management, interdepartmental relationships

Purchasing Management Introduction, Objectives and functions organisation for purchasing, responsibilities of purchase department, determination of purchase, requirements. Purchase procedures inviting tenders and quotations selecting a source, placing an order and follow up; purchasing records and their maintenance; purchasing through approved sources and through D.G.S. and T.D.

**UNIT-II**

Stores Management : Identification of stores, classification and codification of materials on alphabetical, nemonic, numerical, alpha-numerical and column making systems, advantage of classification and codification; stores organisation; receiving section layout and location system, substores, material handling and storage equipment, store accounting.

### UNIT-III

Inventory Management: Definition scope and objectives of inventory control, ABC analysis, factors requirement of an item, lead time, carrying or holding costs, set up or ordering , costs, shortage or stock out costs re-order point, safety stock, economic order quantity (without shortages), EOQ for price discounts.

### UNIT-IV

Distribution Management: Definition of physical distribution, factors affecting distribution, elements of transport system, pros and cons of various modes of transportation, transportation and non transportation costs. Inter-state tariffs documentation, carrier and consigners liabilities, packing and package costs, packaging fragile, perishable and dangerous goods.

#### **Recommended/Suggested Books:**

1. Gopalkrishnan, "Handbook of Material Management", Prientice Hall of India, 2007.
2. Menon K.S. "Stores Management", Mac Millan of India Ltd., 2007.
3. Arnold and Ramkrishnan, "Introduction to Materials Management", Pearson Education, 2007.
4. Nair N.K., "Purchasing and Materials Management", Vikas Publications, 2007.
5. Goyal B.C., "Production Management", Pragati Prakashan, 2007.

## SEMESTER-V

### COMMERCE

#### OPTION (III): TYPING AND SHORTHAND

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 70**

**Practical Marks: 30**

**Note:** The question paper covering the entire course shall be divided into three sections as follows:-

**Section-A:** It will consist of 10 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry 1½ marks; Total weightage of the section being **15 marks**.

**Section-B:** It will consist of short answer questions with answer to each question upto two pages in length. Twelve questions will be set by the examiner and eight will be attempted by the candidates. Each question will carry 4 marks. The total weightage of the section being **32 marks**

**Section-C:** It will consist of essay type questions with answer to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will be carry 11½ marks; total weightage of the section being **23 marks**

#### Theory

#### Practical

#### UNIT-I

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Nature, Scope and importance of typewriting. Sitting posture, introduction of basic principles, knowledge of essential parts of a typewriter and their usage.</li> <li>2. Manipulation of fingers on key board—Introduction of basic lesson (all the four rows) including operation of side shift keys.</li> </ol> | <p>Satisfy the curiosity of the students by making him sit on the typewriter in a required manner by inserting and removing the paper and by observing the action of keys when pressed.</p> <p>Mastery of key-board, practice of basic lesson on all the four rows. Practice of “quick brown fox jumps straight over the lazy dog” lesson.</p> |
|--|--|

#### UNIT-II

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>3. Speed development importance of accuracy over speed.</li> <li>4. Care and upkeep of typewriter. Typewriting accessories, change of ribbon, use of punctuation signs and space to be left after punctuation marks carbon manifold.</li> </ol> | <p>Introduction and manipulation of side shift keys and their use.</p> <p>Practice from exercises, after completion of basic lessons to attain speed @ 15 w.p.m.</p> |
|--|--|

#### UNIT-III

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>5. Instructions for stencil cutting. Use of correcting fluid.</li> <li>6. Display of tabulation work and balance sheets.</li> </ol> | <p>Practice from book exercises @ 15 w.p.m. daily for atleast five minutes and practice in cutting stencils.</p> <p>Typing in printed forms, telegrams and tabulated statements etc.</p> |
|--|--|

### UNIT-IV

- |   |   |
|---|---|
| 7. How to type printed forms, telegrams, minutes notices and legal matters. | Development of speed @ 25 w.p.m. with daily practice. |
| 8. Revision of theory.  |   |

**Note:** There would be one paragraph of 125 words to be typed @ 25 w.p. m. for 5 minutes carrying 10 marks and their would be 5 marks for sessional work. (The candidate is required to maintain his file through out the year.)

#### **Books Recommended: (Typewriting Theory)**

1. Typewriting made easy.
2. General instructions regarding typewriting and stencil cutting.
3. A handbook of type writing.

#### **Typewriting Practical:**

1. Speed and accuracy.
2. Comprehensive course in touch typewriting.
3. Weekly test papers.
4. Any other book suitable to students.

#### **THEORY**

1. Nature, scope, importance of shorthand (this includes basic instructions and introduction).
2. Explanation of consonant and vowel sounds, their indication and their use in shorthand.
3. Gramalogues—explanation and thier usage in shorthand.
4. Explanation of diphthongs hooks (initial and final) halving and doubling principles.
5. Diphones, medial semicircles and compound words-general contractions.

#### **PRACTICAL**

Teacher would be required to teach students basic principles of shorthand and practice of constant and vowels (initial lessons.)

Practice from books and reading back at initial Speed it will be required for the whole of the year.

Dictation and reading back from further exercises,. Transcription from writen shorthand would start from this stage.

Practice from book exercise, reading back and Transcription. 5 minutes para dictation and transcription at nominal speed till last examination.

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- |   |   |
|---|---|
| 6. Intersections, advanced phraseography and special constructions including legal phraseography. | Dictation from seen and unseen passage (from shorthand book) reading back and transcriptions at normal speed. |
| 7. Quick revision of theory note making techniques—common errors in shorthand of English words.   | Dictation from any exercise of shorthand book. Reading of printed shorthand outlines from Shorthand book.     |
| – Introduction of new and advance shorthand outlines.   | The candidate would be required to attain speed @ 60 w.p.m. and transcribe the same @ 12 w.p.m.               |
| 8. Dictation from instructor exercises and preparation for examination.                           |   |

**Note:** There would be one paragraph of 5 minutes of 300 words to be dictated @ 60 w.p.m. and to be typed @ 12 w.p.m. carrying 15 marks.

‘Shorthand Instructor’ is required to give practical knowledge of all the exercises of the book to the learners. Questions for theory would be from the prescribed syllabus but practical (shorthand test) would be from the whole of the book.

## SEMESTER-V

### TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)

#### EMERGING CONCEPTS FOR EFFECTIVE TOURISM DEVELOPMENT

**Time: 3 Hours**

**Max. Marks: 100**

Internal assessment will be based on Periodical test, Presentations, Assignments, Group discussions, and Grooming skills

Instructions for the Paper Setters:

**Section-A:** It will consist of 15 questions from the entire syllabus of the paper with answer to each question should up to 50 words. Students will be required to attempt any 10 questions. Each question will carry 2 marks. This section will be of 20 marks

**Section-B:** It will consist of 8 essay type questions, 2 from each unit with answer to each question should up to 5pages. Students will be required to attempt any 4 questions. Each question will carry 20 marks. This section will be of 80 marks.

**Note:- The candidates are allowed to use simple (Non-Scientific) Calculators.**

#### Part-I

Relevant concepts and approaches for effective tourism development.

- National Development Council Report on Tourism Development.
- National Action Plan, 1992.
- New Policies on Tourism and Civil Aviation.
- Tourism traffic and its Improvisations
- Destination development.
- Sustainable development.

#### Part-II

- Man Power Development Needs.
- Management Strategies.
- Tourism Policy Analysis.
- Tourism Legislation a Necessity.

#### Suggested Readings:

1. National Development Council Report.
2. National Action Plan, 1992.
3. Reports of World Tourism Organisation.
4. Report Workshop on Tourism Legislation - August 10-11, 1987 IITTM, New Delhi.
5. Report Workshop on Tourism Legislation - February 23, IITTM, New Delhi.

**SEMESTER-V  
MATHEMATICS**

**PAPER-I: DYNAMICS**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section-A and Section-B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section-A**

Rectilinear motion in a straight line with uniform acceleration, Newton's laws of motion. Motion of two particles connected by a string. Motion along a smooth inclined plane. Variable acceleration. Simple Harmonic Motion.

**Section-B**

Curvilinear motion of particle in a plane, Definition of velocity and acceleration, projectiles. Oscillations: Free Vibrations, Simple Pendulum, Conical Pendulum. Work, Power and Energy: Kinetic and Potential energy, Conservative forces. Theorem of conservation of energy. Work done against gravity.

**Books Recommended:**

1. S.R.Gupta: A text book of Dynamics
2. F. Chorlton: Dynamics.
3. S.L. Loney: An Elementary Treatise on the Dynamics of a Particle and of Rigid Bodies, Cambridge University Press, 1956.

**SEMESTER-V  
MATHEMATICS**

**PAPER-II: NUMBER THEORY**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section-A and Section-B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section-A**

The division algorithm, The greatest common divisor, least common multiple, The Euclidean algorithm, The Diophantine equation  $ax + by = c$  Prime numbers and their distribution, The fundamental theorem of arithmetic, Basic properties of congruences, Linear congruences, Special divisibility tests.

**Section-B**

Chinese remainder theorem, The Fermat's theorem, Wilson's theorem,  $\dagger$  and  $\ddagger$  functions, Mobius Inversion formula, Greatest integer function, Euler's Phi function, Euler's theorem, some properties of the Phi Function.

**Books Recommended:**

1. D. Burton: Elementary Number Theory, Sixth Edition, McGraw-Hill.  
(Scope in Chapters 2-5, 7-12)., 2005
2. Niven and Zuckerman: An Introduction to Number Theory, Wiley 1972.

**SEMESTER-V****STATISTICS****PAPER-I: LINEAR MODELS AND DESIGN OF EXPERIMENTS****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:**

1. Question paper will consist of two sections, Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non-Programmable calculators.

**Section-A**

Linear models, the fixed effect models, the distribution of minimum error sum of squares and the conditional minimum error sum of squares, tests of general linear hypotheses.

Analysis of one way classified data under the fixed effect model. Analysis of two way classified data with one observation per cell under the fixed effect models, Analysis of two way classified data with multiple but equal observation in cell under the fixed effect models, expectations of various mean sum of squares in one way and two way classified data.

**Section-B**

Terminologies in experimental designs, basic principles of design of experiment: randomization, replication and local control, completely randomized design, randomized block design and the latin square design, balanced incomplete block design and their advantages, disadvantages and analysis. Factorial experiments, the concept of main effects and interactions in  $2^2$  and  $2^3$  factorial experiments and the sum of squares due to them. Yates method of computing the sum of squares due to the main effects and interactions in  $2^2$  and  $2^3$  factorial designs, statistical analysis of these experiments (excluding confounding).

**Books Recommended:**

1. Goon, A.M., Gupta, M.K. and Dasgupta, B. Fundamentals of Statistics, Vol. II, World Press, 2005.
2. Das, M.N. and Giri, N.C. Design and Analysis of Experiment, New Age International Publisher, 2003.

Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

**SEMESTER-V****STATISTICS****PAPER-II: THEORY OF SAMPLE SURVEYS****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:**

1. Question paper will consist of two sections, Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non-Programmable calculators.

**Section-A**

Introduction to design of sample surveys, census and sample surveys, basic principles of sample surveys, planning a sample survey, sampling and non sampling errors.

Simple random sampling (WR and WOR) and its results, estimation of mean: its mean and variance and its estimate, and estimation of proportion: its mean and variance, stratified random sample (WOR): estimation of mean: its mean and variance and its estimate (under WOR), proportional. Neyman and optimum allocations.

**Section-B**

Ratio, product and regression estimates of population mean: their approximated (under large sample) expected values and variances under SRSWOR, comparisons with mean per unit estimate (under SRSWOR)

**Books Recommended:**

1. Goon, A.M., Gupta, M.K. and Dasgupta, B. Fundamentals of Statistics, Vol. II, World Press, 2005.
2. Singh, D. and Chaudhary, F.S., Theory and Analysis of sample survey design, New Age International Publisher, 2002.
3. Mukhopadhyar, P., Theory and Methods of Survey Sampling, Prentice Hall, 2000.
4. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

**SEMESTER-V****STATISTICS****PAPER-III: - Practical based on PAPER-I: LINEAR MODELS AND DESIGN OF EXPERIMENTS****Time: 2 Hours****Marks: 30**

Teaching time for practical paper would be one hour per week.

**List of Practicals Exercises**

1. Exercises on analysis of variance for one way classified data and Completely Randomized design
2. Exercises on analysis of variance for two way classified data with one observation per cell and Randomized Complete Block design
3. Exercises on analysis of variance for two way classified data with multiple but equal observations per cell
4. Exercises on analysis of variance for Latin Square design
5. Exercises on analysis of variance for Balanced Incomplete Block design
6. Exercises on analysis of variance for  $2^2$  and  $2^3$  factorial experiments

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and other one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non-Programmable calculators. The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

**SEMESTER-V**

**CHEMISTRY (INORGANIC CHEMISTRY-A)  
(THEORY)**

**Time: 3 Hrs**

**Marks: 35**

**45 Hrs. (3 Hrs./week)**

**The question paper shall consist of two parts as detailed below:-**

**Part-A :- (Compulsory)**

It shall consist of 8 very short answer type questions (Q. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed 1/3<sup>rd</sup> the page. Each question will be carrying one mark.  
**8 x 1 = 8 Marks**

**Part-B :-**

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. Nos. 9 to 17) from the entire syllabus. Each question will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question will be carrying 4½ marks.

**6 x 4½ = 27 Marks**

**Section-I**

**1. Metal-ligand Bonding in Transition Metal Complexes (10 Hrs)**

Limitations of valence bond theory, an elementary idea of crystal-field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal-field parameters.

**2. Magnetic Properties of Transition Metal Complexes (5 Hrs)**

Types of magnetic behaviour, methods of determining magnetic susceptibility, spin-only formula. L-S coupling, correlation of  $\mu_s$  and  $\mu_{eff}$  values, orbital contribution to magnetic moments, application of magnetic moment data for characterization of 3d-metal complexes.

**Section-II**

**3. Thermodynamic and Kinetic Aspects of Metal Complexes (5 Hrs.)**

A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes.

**4. Electronic Spectra of Transition Metal Complexes (10 Hrs)**

Term Symbols for  $p^2$  &  $d^2$  systems, spectroscopic ground states for  $d^1$ - $d^{10}$  electronic configurations. Types of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, Orgel diagram for  $d^1$ - $d^5$ .

**Section-III**

**5. Organometallic Compounds: (15 Hrs)**

Definition, nomenclature and classification of organometallic compounds. EAN rule, Preparation, properties, and applications of alkyls aryls of lithium and aluminium, Bonding in metal-ethylene complexes, Mechanism of homogeneous hydrogenation reactions.

**Books Suggested:-**

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDaniel, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Porterfield, W.W., Wesley, A., Inorganic Chemistry; Pubs: Addison-Wesley Publishing Company, 1984.
6. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

**SEMESTER-V**  
**CHEMISTRY (PHYSICAL CHEMISTRY-B)**  
**(THEORY)**

**Time: 3 Hrs**

**Marks: 35**

**45 Hrs. (3 Hrs./week)**

**The question paper shall consist of two parts as detailed below:-**

**Part-A :- (Compulsory)**

It shall consist of 8 very short answer type questions (Q. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed  $1/3^{\text{rd}}$  the page. Each question will be carrying one mark.

**8 X 1 = 8 marks**

**Part-B :-**

It shall consist of three sections (Section 1, II & III). It shall consist of 9 questions (Q. Nos. 9 to 17) from the entire syllabus. Each question will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question will be carrying  $4\frac{1}{2}$  marks.

**6 X  $4\frac{1}{2}$  = 27 Marks**

**Section – I**

**1. Electrochemistry-I (7 hrs.)**

Electrical transport-conduction in metals and in electrolyte solutions, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of equivalent and specific conductance with dilution. Migration of ions and Kohlrausch law, Arrhenius theory of electrolyte dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law, its uses and limitations. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only). Transport number, definition and determination by Hittorf method and moving boundary method. Applications of conductivity measurements: determination of degree of dissociation, determination of  $K_a$  of acids, determination of solubility product of a sparingly soluble salt, conductometric titrations.

**2. Electrochemistry – II (8 hrs.)**

Types of reversible electrodes-gas metal ion, metal ion, metal insoluble salt-anion and redox electrodes. Electrode reactions. Nernst equation, derivation of cell E.M.F. and Single electrode potential, standard hydrogen electrode, reference electrodes, standard electrode potential, sign conventions, electrochemical series and its significance. Electrolytic and Galvanic cells-reversible and irreversible cells, conventional representation of electrochemi cells.

EMF of a cell and its measurements. Computation of cell. EMF, Calculation of thermodynamic quantities of cell reactions ( $\Delta G$ ,  $\Delta H$  and  $K$ ), polarization, over potential and hydrogen overvoltage. Concentration cells with and without transport, liquid junction potential, application of concentration cells, valency of ions, solubility product and activity coefficient, potentiometric titrations.

Definition of pH and pKa, determination of pH using hydrogen, quinhydrone and glass electrodes, by potentiometric methods. Buffers-mechanism of buffer action, Henderson-Hassel equation, Hydrolysis of salts. Corrosion-types, theories and methods of combating it.

### Section-II

#### 3. Nuclear Chemistry (15 Hrs.)

Introduction: Radioactivity, Nuclear Structure, Size of Nucleus, Mass Defects and Binding Energy, Nuclear Stability, Nuclear Forces, Nuclear Spin and Moments of Nuclei, Nuclear Models, Nuclear Decay Processes, The Laws of Radioactive Decay, Soddy-Fajans Group Displacement Law, Rate of Nuclear Decay and Half Life Time (Kinetics of Radioactive Decay), Induced Nuclear Reactions, Types of Nuclear Processes, High Energy Nuclear Reactions, Nuclear Reaction Cross-Section, Artificial radioactivity, Detection and Measurement of Radioactivity, Nuclear Fission, Nuclear Fusion, Applications of Radioactivity.

### Section-III

#### 4. Spectroscopy (15 Hrs.)

Introduction: Electromagnetic radiation, regions of the spectrum, basic features of different spectrometers, statement of the Born-Oppenheimer approximation, degrees of freedom.

#### 5. Rotational Spectrum

Diatomic molecules. Energy levels of a rigid rotor (semiclassical principles), selection rules, spectral intensity, distribution using population distribution (Maxwell-Boltzmann distribution) determination of bond length, qualitative description of non-rigid rotor, isotope effect.

#### 6. Vibrational Spectrum

Infrared spectrum: Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, intensity, determination of force constant and qualitative relation of force constant and bond energies, effect of anharmonic motion and isotope on the spectrum, idea of vibrational frequencies of different functional groups.

Raman Spectrum: Concept of polarizability, pure rotational and pure vibrational Raman spectra of diatomic molecules, selection rules.

#### 7. Electronic Spectrum

Concept of potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules and Franck-Condon principle.

Qualitative description of s, p, and n M.O., their energy levels and the respective transitions.

**Books Suggested:-**

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Companies Inc, 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan of India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
7. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd, 2002.
8. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
9. Metz, C.R., Theory and problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book Company, 1989.

**SEMESTER-V  
CHEMISTRY  
(PRACTICAL)**

**Duration: 3½ Hrs.**

**Marks: 30**

**6 Period/week**

**(I) Synthesis and Analysis**

- (a) Preparation of Sodium trioxalatoferrate (III)
- (b) Preparation of Ni-DMG Complex
- (c) Preparation of Copper tetrammine complex
- (d) Preparation of cis-bisoxalatodiaquachromate (III) ion

**(II) Physical Chemistry**

**(a) Conductometric Titrations**

(i) Determine the end point of the following titrations by the conductometric methods.

Strong acid-Strong base

Strong acid-Weak base

Weak acid-Strong base

Weak acid-Weak base

(ii) Determine the composition of a mixture of acetic acid and the hydrochloric acid by conductometric titration.

**(b) (i) Molecular Weight Determination of acetanilide, naphthalene, using camphor as solvent (Rast's methods).**

(ii) To determine the molecular weight of a polymer by viscosity measurements.

**(c) Adsorption** (i) To study the adsorption of acetic acid oxalic/acid from aqueous solutions by charcoal.

**(d) Phase Equilibria** to determine the distribution coefficient of iodine between CCl<sub>4</sub> and water.

**(e) Refractometry**

(i) Determination of refractive index of a liquid by Abbe refractometer, and hence the specific and molar refraction.

(ii) To determine the composition of unknown mixture of two liquids by refractive index measurements.

**Practical Examination**

- |                        |    |
|------------------------|----|
| 1) Inorganic Synthesis | 10 |
| 2) Physical experiment | 13 |
| 3) Viva- Voce          | 04 |
| 4) Note Book           | 03 |

**Books Suggested:-**

1. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
2. Handbook of preparative Inorganic Chemistry, Vol. I & II, Brauer, Academic Press.
3. Inorganic Synthesis, McGraw Hill.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
5. Experiments in Physical Chemistry, R.C. Das and B. Behra, Tata McGraw Hill.
6. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.
7. Advanced Experimental Chemistry, Vol. I, Physical, J.N. Guru and R. Kapoor, S. Chand & Co.
8. Selected Experiments in Physical Chemistry, N.G. Mukherjee, J.N. Ghosh & Sons.
9. Experiments Physical Chemistry, J.C. Ghosh, Bharati Bhavan.

**SEMESTER-V  
PHYSICS**

**PAPER-A  
CONDENSED MATTER PHYSICS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT-I**

Crystal structure, Symmetry operations for a two and three dimensional crystal, Two dimensional Bravais lattices, Three dimensional Bravais lattices, Basic primitive cells, Crystal planes and Miller indices, Diamond and NaCl structure.

**UNIT-II**

Crystal Diffraction: Bragg's law, Experimental methods for crystal structure studies, Laue equations, Reciprocal lattices of SC, BCC and FCC, Bragg's law in reciprocal lattice, Brillouin zones and its construction in two and three dimensions, Structure factor and atomic form factor.

**UNIT-III**

Lattice vibrations, Concepts of phonons, Scattering of photons by phonons, Vibration and mono-atomic, linear chains, Density of modes, Einstein and Debye models of specific heat.

**UNIT-IV**

Free electron model of metals, Free electron, Fermi gas and Fermi energy, Band Theory: Kronig-Penney model, Metals and insulators, Qualitative discussion of the following: Conductivity and its variation with temperature in semiconductors, Fermi levels in intrinsic and extrinsic semiconductors, band gap in semiconductors.

**Books Suggested:**

1. Introduction to Solid State Physics by C. Kittel (Wiley Eastern)
2. Elements of Modern Physics by S.H. Patil (TMGH, 1985).
3. Solid State Physics by Puri and Babbar.

**SEMESTER-V  
PHYSICS**

**PAPER-B  
ELECTRONICS  
(THEORY)**

**Time: 3 Hours**  
**Total Teaching Hrs: 45(3h/week)**  
**Pass Marks: 35%**

**Marks: 35**

**Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT-I**

Concepts of current and voltage sources, p-n junction, Biasing of diode, V-I characteristics, Rectification: half wave, full wave rectifiers and bridge rectifiers, Efficiency, Ripple factor, Qualitative ideas of filter circuits (LC and filters), Zener diode and voltage regulation, Introduction to Photonic devices (solar cell, photodiode and LED).

**UNIT-II**

Junction transistor : Structure and working relation between different currents in transistors, Sign conventions, Amplifying action, Different configurations of a transistor and their comparison, CB and CE characteristics, Structure and characteristics of JEFT, Transistor biasing and stabilization of operating point, Voltage divider biasing circuit.

**UNIT-III**

Working of CE amplifier, Amplifier analysis using h-parameters, Equivalent circuits, Determination of current gain, Power gain, Input impedance, FET amplifier and its voltage gain, Feed back in amplifiers, Different types, Voltage gain, Advantage of negative feed back, Emitter follower as negative feed back circuit.

**UNIT-IV**

Barkausen criterion of sustained oscillations, LC oscillator (tuned collector, tuned base Hartley), RC oscillators, phase shift and Wein bridge.

**Books Suggested:**

1. Basic Electronics and Linear Circuits by N.N. Bhargave, D.C. Kulshreshtha and S.C. Gupta.
2. Foundations of Electronics by D. Chatopadhyay, P.C. Rakshit, B. Saha and N.N. Purkit.
3. Basic Electronics by D.C. Tayal (Himalaya Pub.)

**SEMESTER-V  
PHYSICS**

**(PRACTICAL)**

**Marks: 30**

**General Guidelines for Practical Examination: (4.5h/week)**

- I. The distribution of marks is as follows :
 

(i) One experiment	<b>15 Marks</b>
(ii) Brief Theory	<b>5 Marks</b>
(iii) Viva-Voce	<b>5 Marks</b>
(iv) Record (Practical file)	<b>5 Marks</b>
- II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
- III. Number of candidates in a group for practical examination should not exceed 12.
- IV. In a single group no experiment be allotted to more than three examinee in any group.
  1. Measurement of reverse saturation current in p-n-junction diode at various temperatures and to find the approximate value of energy gap.
  2. To draw forward and reverse bias characteristics of a p-n junction diode and draw a load line.
  3. Study of a diode as a clipping element.
  4. To measure the efficiency and ripple factors for (a) halfwave (b) full wave and (c) bridge rectifier circuits.
  5. To draw the characteristics of a Zener diode.
  6. To study characteristics of Common Base transistor and determine h-parameters of a given transistor.
  7. To study characteristics of Common Emitter transistor.
  8. To study the gain of an amplifier at different frequencies and to find Band width
  9. To study the reduction in the ripple in the rectified output with RC, LC and filters.

**SEMESTER-V**

**HOME SCIENCE**

**FOODS AND NUTRITION & CHILD DEVELOPMENT - I  
(THEORY)**

**Time: 3 Hrs.**

**Teaching Periods: 6/week**

**Max. Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Instructions for the Paper Setters:**

The question paper will consist of five sections A, B, C, D & E. Section A, B, C, D will have two Questions from the respective sections of the syllabus and will be of 12 marks each. Section E will consist of short type questions covering the entire syllabus uniformly and will be of 12 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from section A, B, C, D and section E is compulsory

**Section-A**

1. Importance and functions of food:
  - a) Physiological
  - b) Psychological
  - c) Social
2. Essential food Constituents: Carbohydrates, Proteins and Fats; functions, sources, requirements and Deficiency and excess.
3. Methods of cooking: Boiling, steaming, frying, baking, roasting and micro-wave cooking.

**Section-B**

4. Food nutrients: Functions, recommended allowances, deficiency and sources of:
  - a) Vitamins- B-1, B-2, Niacin, A, C, D
  - b) Minerals-Calcium, Iron, Iodine
5. Food Preservation: Definition, Importance & Principles. Causes of food spoilage. Household methods of preservation. Sun drying, use of salt, oil, spices, sugar & chemical preservatives.

**Section-C**

1. Definition and importance of Child Development.
2. a) Differences between growth and development.  
b) Principles of development.
3. Physical development of the child from infancy to late childhood and factors affecting the same.

**Section-D**

4. Motor Development from infancy to late childhood.
  - a) Pattern of motor development.
  - b) Factors affecting motor development.
5. Emotional Development
  - a) Characteristics of children emotions.
  - b) Common childhood emotions fear, anger, jealousy, love and affection, anxiety and curiosity.
6. Language Development
  - a) Stages of language development.
  - b) Factors affecting language development

**SEMESTER-V**

**HOME SCIENCE**

**FOODS AND NUTRITION  
(PRACTICAL)**

**Time: 3 Hours**

**Marks: 40**

**Teaching: 6 Periods/week**

1. Preparation of minimum of three dishes by using various methods of cooking (e.g. boiling, steaming, baking), frying (deep & shallow) and roasting with different food groups e.g. cereal, pulses & vegetables groups and their combinations.
2. Food preservation-Pickle, chutneys, jams, squashes, sherbets, sauce (at least two each).

**SEMESTER-V****COSMETOLOGY (VOCATIONAL)****(THEORY)**

**Time: 3 hrs.**  
**Periods/Week: 4**

**Max. Marks: 100**  
**Theory Marks: 35**  
**Practical Marks: 50**  
**College Lab Training Marks: 15**

**Instructions for the Paper Setters:**

**Note: There will be 2 sections.**

**Section-A:** It will consist of 5 short type questions, and candidate will be required to attempt 3 of them. Each question carry 5 marks each.

**Section-B:** It will consist of 4 essay type questions, and candidate will be required to attempt 2 of them. Each question carries 10 marks each.

**1. Bacteriology**

- a) What is Bacteria?
- b) How Bacteria grows and reproduce?
- c) Types of Bacteria
- d) Infections and Disease

**2. Sterilization & Sanitations**

- a) Methods of Sterilization & Sanitations
- b) Commonly used disinfectants
- c) Knowledge of common antiseptics
- d) General suggestions for sanitations

**3. Chemical Treatment of Hair**

- a) Rebonding
- b) Smoothing

**SEMESTER-V**

**COSMETOLOGY (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hrs.**  
**Periods/Week: 6**

**Marks: 50**

**Note:** Lab training should be taken in college cosmetology lab. And report with picture profile should be submitted by each student with the remarks of lab instructor.

**1. Make-up**

- a) Cosmetics used in make-up, how to choose the correct colour, selecting base shades, how to determine facial balance.
- b) Bridal Makeup - day & night
- c) Corrective make-up

**2. Hair Styling:** Formal and casual

**3. Draping of Formals & Casuals:** Saree and Lehngas

**SEMESTER-V****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****THERAPEUTIC NUTRITION  
(THEORY)**

**Time: 3 Hrs.**  
**Pds – 6 pds/week**

**Max. Marks: 100**  
**Theory: 60**  
**Practical: 40**

**Instruction for the Paper Setter.**

1. Theory paper will be of 3 hrs duration.
2. Question paper should cover all the topics of the syllabus.
3. There will be 8 questions in all. The students are to attempt any 5 questions (12 marks for each question).
4. Question 1 is compulsory, which contains short answer type questions.

**Objectives:-**

- 1) To gain knowledge about different diseases.
- 2) To learn therapeutic adaptation of the normal diet.

**Content :-****Unit-I**

- 1) Basic concept of Therapeutic diet - meaning, importance, objectives, Therapeutic adaptations of the normal diet.
- 2) Types of routine hospital diets - normal diet, Soft diet, liquid diet, Special feeding methods Enteral nutrition and Parenteral Nutrition.
- 3) Role of Dietitian in feeding of patients. Effect of illness on food acceptance and utilization.

**Unit-II**

- 4) Nutrient and drug interaction. Effect of drug therapy on intake, absorption and utilization of nutrients.
- 5) Nutrition during infection and fevers—classification, etiology, symptoms and dietary management in – Typhoid, Tuberculosis and Dengue.

**Unit-III**

- 6) Nutrition in Gastro - intestinal disorders, etiology, symptoms and dietary management in Diarrhoea, constipation, Gastritis, Irritable bowel syndrome peptic ulcer.
- 7) Nutrition in disturbances of small and large intestine etiology, symptoms and dietary management in Celiac disease, Lactose intolerance, ulcerative colitis.

#### **Unit-IV**

- 8) Nutrition in disease of the liver, gall bladder and pancreas, etiology, symptoms and dietary management in - Jaundice, Hepatitis, cirrhosis of liver, Cholecystitis and Pancreatitis.

#### **Unit-V**

- 9) Nutrition in Diabetes Mellitus - Types etiology, symptoms metabolic changes, life style modification, Dietary management, Hypoglycemic agents, Medication, Insuline therapy, Acute Complication of diabetes.

#### **Unit-VI**

- 10) Nutrition in Renal disease, etiology, symptoms dialysis - Its type and dietary management in Glumerulonephritis, Nephrosis, Acute Renal failure.

#### **Unit-VII**

- 11) Nutrition in Cardiovascular diseases, etiology, symptoms, life style modification, brief knowledge of Dash Diet and dietary management in Atherosclerosis, Hypertension, Dislipidemia and Acute cardiovascular disease/Heart attack.

#### **Unit-VIII**

- 12) Nutrition in Cancer, types etiology, stages, symptoms diagnosis, factors inhibiting carcinogenesis, factors enhancing carcinogenesis and dietary management and Chemo & Radiation therapy (Brief Introduction).

#### **Unit-IX**

- 13) Nutrition in obesity - assessment of obesity, Hazards of obesity, etiology, nutritional management and other approaches.  
14) Gout - etiology, symptoms & dietary management.  
15) Food Allergy - Causes, symptoms & dietary management.

**SEMESTER-V**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**THERAPEUTIC NUTRITION  
(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 40**

**Periods: 6**

**Note:- Paper will be set on the spot by the examiner instructions for the Paper Setter.**

1. Prepare following therapeutic recipes and calculate their nutritive value.
  - a. Prepare 5 recipes of liquid and soft diet.
  - b. Prepare 5 high protein and high energy recipes.
  - c. Prepare 5 high carbohydrate, moderate protein & low fat recipes.
  - d. Prepare 5 high fiber and low glycemic index recipes.
  - e. Prepare 5 low sodium, low fat and high fiber diet.
2. Plan and calculate nutritive value of diet for the following diseases. Typhoid, Diarrhoea, Constipation, Jaundice, peptic ulcer, Diabetes, Hypertension, atherosclerosis, renal disease and obesity.
3. Students are required to run Diet Clinics in the college

**Note: Students are required to undergo 10 days hospital training in winter break and submit report**

**Reference Books:**

1. Food and Nutrition - by Dr. M. Swamination
2. Text book of Nutrition & Dietetics - by Kumeed Khanna & others.

**SEMESTER-V**

**FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)**

**HISTORIC COSTUMES OF INDIA AND WORLD-I  
(THEORY)**

**Time: 3 Hrs.**  
**Periods/week: 4**

**Max. Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**1. Historic costumes of India and World:**

- a) Egypt.
- b) Greece

**2. Traditional Costumes of the Following States of India**

- a) Punjab.
- b) Himachal.
- c) Jammu & Kashmir.
- d) Maharashtra.
- e) Rajasthan.

**3. Traditional Textiles of India:**

- a) Jamdhani & Baluchari of Bengal.
- b) Tanchoi & Patola of Gujarat.
- c) Chanderi & Maheshwari of M.P.

**General Instructions to the paper Setter:**

The question paper consists of eight questions, out of which student will attempt five.  
All questions carry equal marks.

**SEMESTER-V**

**FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)**

**ADVANCE DESIGNING, CONSTRUCTION & DRAPING-I  
(PRACTICAL)**

**Time: 4 Hrs.**  
**Periods/week: 2x6**

**Marks: 60**

**Part-I**

**Sample making of following**

1. Pockets – Cross, Welt, Bound.
2. Zippers – Concealed, Zipper with fly opening.

**Design Draft and Construct following:**

1. Night Wear.
2. Trouser / Culottes / Hipsters.

**Part-II**

1. Draping of Basic Bodice Block Front.
2. Draping of Basic Bodice Block Back
3. Draping of Bodice with princess line

**General Instructions for the Paper Setters:**

1. Design any one garment from syllabus on paper bag–Front & Back, Adaptation to be made from sloper, Cutting & Placement, Construction and finishing of garment.
2. Draping of any Block.

**Note: Please send the material list along with.**

**SEMESTER-V**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**

**Lectures/week: 6 Theory**

**Max. Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Instructions for the Paper Setters:**

Ten questions will be set; students are required to attempt any 6, carrying 10 marks each.

**Course Contents:**

**Integration in Early Childhood Care and Education**

- Handicapped children
- Types of handicaps
- Identification of children with special needs
- Integration with normal children
- Basic needs of handicapped children

**Roles and Responsibilities of Staff**

- Administration and supervision
- Qualities of a good teacher and supervisory staff
- Capacity building in staff
- Pre-school personnel's and their training

**Substitute Child Care**

- Substitute child care
- Needs of infant and children
- Kinds of substitute child care
- Role of Nursery school/balwadi's

**Integrated Child Development Scheme**

- Packages of services
- Objectives of ICDS

**SEMESTER-V**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 40**

**Lectures/week: 4 Practical**

**Instructions for the Paper Setters:**

Paper will be set on the spot by the examiner.

**Distribution of marks for practical examination**

Written Practical:

**10 Marks**

Class Performance:

**10 Marks**

Practical File:

**5 Marks**

Oral Examination:

**5 Marks**

Preparation of Activity Material:

**10 Marks**

**Course Contents:**

- \* Use of appropriate psychological tools to identify developmental needs of children with special needs.
- \* Organizing a Parent Education Programme.
- \* Preparation of interactive material for children with special needs
- \* Preparation of activities/ material for enhancing physical and mental abilities of pre-school children

**SEMESTER-V**  
**FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)**

**FSQC-9: FOOD ANALYSIS (THEORY)**

**Time: 3 Hours**

**Max. Marks: 75**

Instructions for the Paper Setters: Question paper will cover both the main topics and divided into three parts. Each part will contain at least two questions and students will be asked to attempt five questions in all with at least one from each part and not more than two from any part.

**PART-I**

1. Food Composition and factors effecting food composition.
2. Sampling techniques and preparation of sample.
3. General physical methods of analysis of foods.
  - a. Electronic determination.
  - b. Refractometry.
  - c. Polarimetry and polarography

**PART-II**

- d. Food rheology.
- e. Viscosity.
- f. Surface tension.
- g. Freezing point
- f. Specific gravity
4. General Chemical Methods of analysis of food
  - a. Proximate composition. Ash and its types.

**PART-III**

- (b) Total protein, Non protein and specific protein in foods, total fat and different types of lipids.
- (c) Macro nutrients i) Sodium, K.P. Ca, Mg, Fe, Zn. ii) Vitamins iii) Trace Elements

**Reference Books:**

1. Manuals of Food Quality Control additions contaminants techniques, 1980.
2. The Chemical Analysis of Foods and Food Products. By Morris B Jacob, 3rd Ed., Roberte, Krieger.

**SEMESTER-V**

**FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)**

**FSQC-10: FOOD ANALYSIS (PRACTICAL)**

**Max. Marks: 25**

**List of Practicals:**

1. a Lactometric determination
- b. Refractrometry
- c. Polarimetry and polarography
- d. Food Rheology
- e. Viscosity
- f. Surface tension
- g. Freezing point.
2. Proximate composition of food using various techniques.
3. Estimation of different minerals in food using various methods.
4. Estimation of vitamins in food using analytical and microbiological techniques.
5. Estimation of crude, dietary and other fibre components.

**SEMESTER-V**  
**FINE ARTS**  
**(DRAWING & PAINTING)**

**PAPER: A-THEORY**

**Time: 3 Hrs.**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 25 + 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**Note:**

- (a) 50 Marks for the theory paper and 25 marks for each practical.
- (b) The question paper will cover the entire syllabus.
- (c) Questions should be based on world famous paintings whose slides are easily available.
- (d) Question paper should cover the syllabus uniformly.
- (e) The paper setter should set the paper in two sections section A and B.
- (f) The division of the marks will be as under:

**Section-A:** 25 marks for 25 short answer questions. Each question carries 1 mark.

**Section-B:** 25 marks for 5 questions. The examiner will set 8 questions. The candidate will attempt 5 questions of 5 marks each. Compartment candidates in the subject of Fine Arts will appear only in theory paper during supplementary exam. Previous marks of practical paper will be considered for the aggregate.

**History of Modern Movement in Europe:**

1. **Impressionism:** Monet- Impression Sunrise, Rouen Cathedral. (ADDED)  
Renoir – The Umbrellas, Lunch on the boat. (ADDED)
2. **Post Impressionism:**
  - (i) Cezanne- Card players, Still life with apples
  - (ii) Vangogh- Starry night, Sunflowers
3. **Expressionism:**
  - (i) Munch- Cry, Dance of life
  - (ii) Kandinsky- Blue mountain, Improvisation 30
4. **Cubism:**
  - (i) Picasso- Les Demoiselles D' Avignon, Guernica
  - (ii) Braque- Still life, The Portuguese
5. **Surrealism:**
  - (i) Salvador Dali- Persistence of Memory, Burning Giraffe
  - (ii) Max Ernst- Celebes, Europe after rain

**SEMESTER-V**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER: B- LANDSCAPE (ON THE SPOT)  
(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Arrangement of shape based on subjects like human forms and animal forms.

In landscape setting emphasis should be given on perspective, Colour and its application in harmony.

**Medium:** Any medium

**Size:** ½ Imperial

**SEMESTER-V**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER: C-FULL LIFE DRAWING  
(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Rendering of full life study should be done in any medium. Emphasis should be given to structure, volume, proportion, tones and texture in monochromatic Colour.

**Medium:** Any medium

**Size:** ½ Imperial

Candidates will submit:-

- (i) 5 sheets of each paper
- (ii) Sketch book containing 50 sketches.

**SEMESTER-V**

**HISTORY OF ART  
PAPER-A**

**Time: 3 Hours**

**Max. Marks: 50**

**Outlines of Test, Syllabi, and Courses of Reading**

- Note:** (a) The question paper should cover entire syllabus. It may contain very specific short answer questions.
- (b) The paper-setter should set 15 questions in all. Students will attempt 10 questions of 5 marks each.

History of Indian Painting from C.1850 to the present times-

Company painting

Raja Ravi Verma.

Bengal school with reference to Rabindranath Tagore, Nand Lal Bose, Gagendernath Tagore.

Post Independence Artists-

Amrita Shergil, Gemini Roy, D.P.R. Chowdhary, Shobha Singh, M.F. Hussain, Satish Gujral,  
Subodh Gupta.

**SEMESTER-V**

**HISTORY OF ART  
PAPER-B**

**Time: 3 Hours**

**Max. Marks: 50**

**Outlines of Test, Syllabi, and Courses of Reading:**

- Note:** (a) The question paper should cover entire syllabus. It may contain very specific short answer questions.
- (b) The paper-setter should set 15 questions in all. Students will attempt 10 questions of 5 marks each.

History of India Sculptures- from C.600 A.D. to C.1300 A.D.

Pal and Sena School of Bengal, Bihar and Orrisa

Pratihara sculptures of Central and western India

Chola sculptures –Stone and Bronze.

**SEMESTER-V****GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(THEORY)****Time: 3 Hrs****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Section-A:** 2 marks for 10 short answer questions. All the questions are compulsory.**02x10=20****Section-B:** The examiner will set 5 questions and the candidate will attempt 3 questions.**03x10=30**

1. Casting
2. Polishing
3. Electroplating
4. Electroforming
5. Chemical Finishing

**SEMESTER-V****GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(PRACTICAL)****Marks: 50****Manufacturing:**

1. Domestic Jewellery - Creation of 3 final designs in relation to Indian Jewellery.  
Kundan, Meena work, stone setting (Through .J.Cad)
2. Export Jewellery - Creation of 3 final designs in relation to export market like U.K, USA,  
China etc.
3. Manufacturing of Fashion and Costume Jewellery with metals.  
Exercise on: Jali Work, Riveting, Silver Ring, Pendent Making, Development of Pendent,  
Earrings Broches

## SEMESTER-V

### STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL) (THEORY)

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

#### **Instructions for the Paper Setters:**

Total no. of questions to be set: 20

Total no. of questions to be attempted: 12

Question paper is divided in two parts.

**Section-A:** It will consist of 16 questions. Student will attempt 10 questions. Each question will carry 3 (three) marks. **(Total: 30 Marks)**

**Section-B:** It will consist of 4 questions. Student will attempt any 2 question. Answer will carry 10 (ten) marks. **(Total: 20 Marks)**

#### **Course Contents:**

1. Pre-script Stage: Background
2. Communication Objectives-Identify and presentise
3. Target Audience-Identify and presentise
4. Creative Treatment
5. Microphones-Different types.
6. Mikes-Special types and accessories, wireless, lappet, reflector type, short again.

#### **Introductory lectures on:**

- Overhead Projector.
- Hand held picture/chart slide presentation
- Multi Projector single screen with dissolves
- Multi Projector Multiscreen

#### **Emphasis on:**

- Multi Projector
- Script
- Visualisation
- Photography
- Graphics

#### **Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Effects and Experiments in Photography	Pet old- Focal
2.	Basic Photography	John Hedgecoe

**SEMESTER-V**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

**ADVANCE PHOTO TECHNIQUES  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. The paper will be set by the external examiner on the spot considering the syllabus.
2. Creative work on the part of the students is to be emphasized.  
Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. as desired by the examiner.

**Instructions for Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by Internal Examiner as per requirement.

**Course Contents:**

1. Use a medium format cameras and appreciate the difference.
2. Expose Raw stocks of different kinds, Find out their Characteristics.
3. Use lenses of different kind to see its various uses.
4. Measuring light by using a exposer meter.
5. Black and White processing and printing (only demonstrations)
6. Indoor lighting arrangement for Poliant and Table Tops.
7. In-camera Special Effects.
8. Post exposure SFX Special Effects.

**Suggested Readings:**

Sr. No.	Book Name	Author
1.	Color Prints	Coote-Focal
2.	Guide to the Dark Room	Gaunt- Focal

**SEMESTER-V****SEMESTER-V****APPLIED ARTS****ART APPRECIATION AND ADVERTISING  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Instructions for the Paper Setters:**

1. No. of questions to be set: 15
2. No. of questions to be attempted: 10
3. The questions are to be equitably distributed among all the topics of the Syllabus.
4. Each question will carry 5 marks.

**Course Contents:**

- a. Development of Printing Press in India (Ancient, Medieval, Post-Independence)
- b. Aesthetic of Commercial Art
- c. Letter Press for printing
- d. Trade Mark
- e. Brand Name
- f. Preparing Product Packaging
- g. Block Making

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Introduction to Printing	Herbert Simon
2.	Design	Peter Bridgewater, Brain Lewis, Brett Beckon

**SEMESTER-V**  
**APPLIED ARTS**

**INDOOR CAMPAIGN: FOLDER AND LAYOUT**  
**(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Instructions for the Paper Setters:-**

1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Limited references while preparing layout and folder can be taken. Logo and writing style of the existing company can be taken from any available source.
4. Any one of the above (Folder and Layout) is to be made by the students for the examination.

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be Obligatory for all students.
2. Size: As required.

**Course Contents:**

Folder: Prepare 2 fold or 3 fold folders as asked by the teacher.

Topics: Commercial and Educational

Layout: Prepare Layout for Magazine

Topics: Commercial and Educational

During examination, use of stencil, Transfer letters, Screens are allowed. Limited references while preparing layout and folder can be taken.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Advertising Procedure	Otto kleppner
2.	Design	Peter Bridgewater, Brain Lewis, Brett Beckon

**SEMESTER-V**

**SCULPTURE  
(THEORY)**

**Time: 3 Hrs.**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Note:**

- (i) The question paper should cover the entire syllabus. It may contain very specific content related question.
- (ii) The paper setter should set fifteen (15) questions in all and students shall attempt 10 ten questions.
- (iii) The questions can be repeated from previous question paper.

**Chapter-I**

**Gupta Sculptures**

- Mathura Centre ( standing Vishnu, Standing Buddha, Vishnu Anant Shayian from Dasavatar temple, Deogarh, Vishnu of Vaikuntha from Mathura)
- Sarnath Centre ( Life of Buddha Panel, Seated Buddha preaching the Sermon of Law and Copper Buddha from Sultan Ganj)

**Chapter-II**

Pallava's Sculpture including Rath temples.

**Chapter-III**

Art of Sun temple of Konark (Odisha)

**Chapter- IV**

Sculptures of Kailashnath Temple, Ellora.

**Chapter-V**

Chola Bronzes sculptures including techniques, Shiv Natraj and Parvati Sulptures.

**Chapter-VI**

Sculptures of Elephanta Caves (Marriage of Shiva and parvati, Shiv Maheshamurti, including main features of the Sculptures.

**SEMESTER–V**

**SCULPTURE  
(PRACTICAL)**

**Time: 6 Hrs**

**Marks: 50**

- 1) Low Relief Sculptures in Geometrical pattern, Cast in Plaster of paris (POP) / Cement / Metal based on birds, Flora and Fauna. (Minimum Size 10 X 10 inches), Total no. of work–1
- 2) Composition in round sculpture based on human figures. Work should be produced in PoP / cement / Metal. Total no. of work–1
- 3) Creative Head in Clay Modeling, work should be produced in PoP / Cement / Terracotta.

**Books Recommended:**

- |  |                                |
|--|--------------------------------|
| 1. History of Fine Arts in India and West            | By Edith Tomory                |
| 2. Indian Art ( A concise History)                   | By Roy C Craven                |
| 3. A Survey of Indian Sculptures                     | By S. K Sarawati               |
| 4. Indian Sculpture                                  | By Stella Kramisch             |
| 5. Murti Kala Ka Itihaas                             | By Aggar Ali kadavi            |
| 6. The Pelican History of Art                        | By Benjamin Rowland            |
| 7. Indian Images—Part I, II                          | By D.C. Bhattacharya           |
| 8. Mathura ki Murtikala                              | By Neel Kanth Purshottam Joshi |
| 9. An Interesting Survey<br>(Sculptures from konark) | By T.N Ramachandran            |
| 10. South Indian Bronzes                             | By O.C Gangoli                 |

**SEMESTER-V**

**MUSIC (VOCAL)  
(THEORY)**

**Theory: 3 Hours**

**Theory: 3 Periods per week**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Note: There should not be more than fifteen students in one group of Practical class.**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. The paper setter will set **Eight** questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt **Five** questions in all.
5. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
6. Candidate can take Tabla subject along with Music Vocal or Music Inst.

**COURSE CONTENTS:**

1. Importance of Globalization in Indian music in Modern Period.
2. Development of Indian Notation System and its merits and demerits.
3. Short notes on the following :
  - a. Thumri
  - b. Tappa
  - c. Chaturang
4. Detailed knowledge of folk music of Punjab.
5. Detailed description of the following Ragas:
  - a. Darbari
  - b. Tilang
  - c. Kedar
6. Detailed study of the following Talas:
  - a. Deepchandi
  - b. Tilwara
7. Essay writing on the following topics:
  - a. Kanth Sadhna (Voice Culture)
  - b. Manch Pradarshan (Stage Performance)
8. Life and Contribution of the following Musicians:
  - a. Dalip Chandra Bedi
  - b. Acharaya Brehaspati
  - c. Surinder Kaur
9. Inter-relationship between Music and Yoga.
10. Classical Gayan Shailies used in Gurmat Sangeet.
11. Non-Detail Ragas: Jog, Adana, Kamod.

**SEMESTER–V**

**MUSIC (VOCAL)  
(PRACTICAL)**

**Time: 20 minutes for each student**  
**Periods/week: 9**

**Marks: 50**

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Darbari, Kedar, Tilang.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. Brief Knowledge of Non Detailed Ragas: Adana, Kamod and Jog.
4. One Ghazal.
5. One Chaturang or Trivat in any Raga of Your Choice.
6. Ability to recite Deepchandi and Tilwara showing Khali Tali with hand motion in Ekgun, Dugun Layakaris.
7. Ability to play theka of Jhap Taal on Tabla.
8. Ability to play five alankars on the Harmonium based on the Asawari Thata.

**Books Recommended:**

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I, II, III, IV, V.
9. Tantri Nada Pt. Lalmani Mishra.

**SEMESTER-V**

**MUSIC (INSTRUMENTAL)  
(THEORY)**

**Theory: 3 Hrs.**

**Theory: 3 periods per week.**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions given to the examiners are as under:–**

1. There should not be more than fifteen students in a batch for practical examination.
2. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
3. The paper setter will set eight questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions in all.
4. The External Examiner will set question paper for practical on the spot.
5. Candidate can take both subjects .i.e Instrumental music and Vocal music as elective subjects.
6. Candidate can take Tabla subject along with instrumental music or vocal music.

**Course Contents:**

1. Development of Music during modern period.
2. Comparative study of Avirbhava & Tirobhava with illustrations.
3. Relevance of time theory in Music.
4. Life & Contribution of the following Musicians.
  - a. Pt. Ravi Shankar (Sitar)
  - b. Ustad Bismillah Khan (Shehnai)
5. Study of Musical Electronic Instruments.
6. Inter relation between folk & classical music.
7. Detailed description of the prescribed Ragas Darbari Kanrha, Todi, Puria Dhanashri. (with Notations).
8. Knowledge of the following Ragas:–
  - a. Multani
  - b. Adana
  - c. Puriya Kalyan
9. Detailed knowledge of following Talas :–
  - a. Deepchandi
  - b. Tilwara
10. Study of Kirtan Chowkies in Gurmat Sangeet.

**SEMESTER-V**

**MUSIC (INSTRUMENTAL)  
(PRACTICAL)**

**Time: 20 minutes for each student**  
**Periods/week: 9**

**Marks: 50**

1. Ability to play 10 Alankars in Sitaar in the Swaras of Asawari That.
2. One Maseetkhani gat in any Raga prescribed in you course Darbari, Todi and Puriya Dhanashri.
3. One Rajakhani Gat in each Raga prescribed in your course.
4. Brief Knowledge of Non-detailed Raagas: Puriya Kalyan, Adana and Multani.
5. Ability to recite on hand Deepchandi & Tilwara Tal with single & Double Layakarries.
6. Ability to play theka of Jhap Tal on Tabla.
7. Ability to play One gat in Ektal in any Raga prescribed in your Course.
8. Ability to sing national anthem with any instrument.

**Books Recommended:**

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by PunjabiUniversity, Patiala.
4. Sangeet Vishard Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan Shanti Govardhan.
6. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
7. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh
8. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
9. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

**SEMESTER-V**

**INDIAN CLASSICAL DANCE  
(THEORY)**

**Time: 3 Hours**  
**Periods/week: 3**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions given to the Paper Setters are as under:-**

1. The paper setter will set eight questions. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions.

**Course Contents:**

1. Detailed knowledge of Bharat Natyam with its historical background, style, costume and music etc.
2. Knowledge of Bhav, Sthai Bhav, Vibhav, Anubhav and Sanchari Bhav.
3. Origin of Taal and its ten Prans.
4. Gati Bhedas and Sthanak Bhedas according to Abhinaya Darpan.
5. Importance of background music in Dance.
6. Knowledge of Folk Dances of Himachal Pradesh.
7. Kathak and Natwari Nritya.
8. **Notation of:**

**(i) BASANT TAAL -- 9 Matras**

- a) Tatkar in Ekgun, Dugun and Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Tora-2
- f) Paran-1
- g) Chakardar Paran – 1
- h) Kaviti-1
- i) Pramelu – 1

**(ii) ADA – CHAUTAAL -- 14 Matras**

- a) Tatkar in Thah, Dugun and Chougun Layakaries.
- b) Thaat- 1
- c) Amad-1
- d) Damdar and Bedam Tehai – 1 - 1
- e) Tora-2
- f) Paran-1
- g) Chakardar Paran – 1
- h) Kaviti-1

9. Notation of nagma in Basant Taal and Ada – Choutaal.
10. Definition and Notation of the following Talas in Ekgun, Dugun, Tigun and Chougun Layakaries:
  - a) Basant Taal
  - b) Ada - Choutaal

**SEMESTER-V**

**INDIAN CLASSICAL DANCE  
(PRACTICAL)**

**Time: 20 Minutes**  
**Periods/week: 9**

**Marks: 50**

**Instructions given to the examiners are as under:-**

1. There should not more than fifteen students in a batch for practical examination.
2. Harmonium will be allowed as accompaniment to perform Nagma.
3. Separate practical paper should be as a base set for each class from practical of prescribed syllabus on the spot.

**Instructions for the Examiner: The Examiner will set practical paper on the spot.**

**1. BASANT TAAL (MATRAS - 9)**

- a)Tatkar in Ekgun, Dugun & Chougun Layakaries.
- b) Thaat - 2
- c) Tehai - 1
- d) Amad -1
- e) Tora - 2
- g) Paran -1
- h) Chakardar Paran - 1
- i) Kavita - 1
- j) Pramelu - 1

**2. ADA – CHOUTAAL (MATRAS - 14)**

- a)Tatkar in Ekgun, Dugun & Chougun Layakaries.
  - b) Thaat - 1
  - c) Amad - 1
  - d) Damdar and Bedam Tehai – 1- 1
  - e) Tora - 2
  - f) Paran - 1
  - g) Chakardar Paran - 1
  - h) Kavita - 1
3. Padhant of all the Practical material in given Taals.
  4. Padhant of all thekas in Dugun & Chougun Layakaries.
  5. Gat – Bhav in Radha – Krishan leela.
  6. Nagma in Basant Taal.
  7. Ability to play the theka of Ekeharva Taal on Tabla.
  8. Ability to sing a Stuti with Harmonium.

**Books Recommended:**

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.
2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers,New Delhi, 2006.
3. Atihasik Pripekesh Mein Kathak Naritya, Maya Taak, Knishka Publishers, New Delhi, 2005.
4. Nibandh Sangeet, Laxmi Naryan Garg, Sangeet Karyalaya, Hathras, 2004.
5. Kathak Nritya Shiksha Part-I & Part II, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP).

## SEMESTER–V

### TABLA (THEORY)

**Theory: 3 Hours**  
**Theory: 3 periods per week.**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

#### Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examinations.
2. Harmonium will be allowed as accompaniment to perform the Nagma.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for practical paper should also be sent.
4. The paper–setter will set eight questions. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate will be asked to attempt five questions.
5. Candidate can take Tabla subject with Vocal or Instrumental Music (Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai, Rabab, Saranda, Taus, Santoor and any other Swar Vadhya to the played on the basis of Indian Classical Music).

#### COURSE CONTENTS:

1. Historical development of Avanaad Vadhaya.
2. Detailed knowledge of Dakshini Tala System.
3. The role of Farukha-baad Gharana in promoting female artists.
4. Notation & description of :
  - a. Pancham Swari Taal-One Peshkar, Two Kayada, Five paltas with Tihaai, Two Tukdas, Rella, One Chakradar Paran,
  - b. Tivra Taal with proper vadan shally of Pakhawaj -Two Tukdas, Two Rella, Two Tihais.
5. Life & Contribution towards music of the following:
  - a. Qadar Baksh
  - b. Karamatullah Khan
  - c. Ayodhya Prasad
6. Explanation of the following Terms.
  - a. Taal Kachaihri
  - b. Partal
  - c. Tabla tarang
  - d. Prastaar
7. Write an essay on the following topic:  
Importance of electronic musical instruments in teaching.
8. The Place of tabla in Shaan (in the context of Gurmat Sangeet)
9. Place of Tabla in Fusion Music.

#### Books Recommended:

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Mishra Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Muni Mishra, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vishesh Sangeet Karyalaya Hathras, 1994.
6. Tal Parichaie Part I-IV Garish Chandar Srivastav Sangeet Karyalaya Hathras.
7. Tal Parkash Bhagwat Sharan Sharma Sangeet Karyalaya Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita Chitragupta Radha Publication New Delhi 1992.

**SEMESTER–V**

**TABLA  
(PRACTICAL)**

**Time: 20 minutes for each student  
9 periods/week.**

**Marks: 50**

1. Taal Prescribed Pancham Swari, Tivra
2. Pancham Swari Taal-One Peshkar, Two Kayada, Five paltas with Tihaai, Two Tukdas, Rella, One Chakradar Paran
3. Tivra Taal with proper vadan shally of Pakhawaj -Two Tukdas, Two Rella, Two Tihais.
4. Ability to play Nagma on Harmonium in Pancham Swari and Tivra taal.
5. Ability to play Theka of Sooltal and Mat tal.
6. Practice of playing the above Taals with Vocal and Instrumental performance.
7. Tuning of Tabla.
8. Ability to play Western patterns of Taal – Keharva and Dadra on tabla

Books Recommended:

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Misher Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Muni Misher, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vishesht Sangeet Karyalaya Hathras, 1994.
6. Tal Parichaie Part I-IV Garish Chandar Srivastav Sangeet Karyalaya Hathras.
7. Tal Parkash Bhagwat Sharan Sharma Sangeet Karyalaya Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita Chitragupta Radha Publication New Delhi 1992.

## SEMESTER-V

### COMPUTER SCIENCE DATA BASE MANAGEMENT SYSTEM & ORACLE (THEORY)

**Time: 3 Hours**  
**4 Hours per week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

#### Instructions for the Paper Setters:-

- Note:** (i) In theory eight questions are to be set giving the weightage to all the portions. The candidates are required to attempt any five. All questions are to be of equal marks.
- (ii) The maximum marks for the paper will be 75.
- (iii) As far as possible except in the Computer language papers no programme may be asked in theory papers. Emphasis should be on algorithm development.
- (iv) The students can use only Non Programmable and Non Programmable storage type calculator in the subjects/papers pertaining to computer.

#### UNIT-I

##### DBMS

Introduction to database management system, components of DBMS, ER. Diagrams, Data Description Language, Data Manipulation Language, SQL.  
Data Models, Hierarchical Model, Network Model and Relational Model, Relational Databases. Relational Algebra and Calculus Normalisation.  
Database Security, Protection, Integrity, Recovery, Concurrency, Control, Decomposition.  
Distributed Databases, Knowledge Base/Expert Systems and Object Oriented Databases.

#### UNIT-II

##### Oracle 10g

##### SQL \* PLUS

Introduction to Oracle 10 SQL – DDL, DML, DCL.  
Join methods & Sub query, Union, Intersection  
Built in Functions, View Security amongst users, Sequences, indexing object Features of Oracle 10.

#### UNIT-III

##### PL/SQL

Introduction to PL/SQL.  
Cursors – Implicit & Explicit.  
Procedures, Functions & Packages.  
Database Triggers.

#### References:

- 1 Desai B.C.: An Introduction to Database Systems, Galgotia Publishers.
- 2 Date C.J. An Introduction to Database Systems, Vol. I, Narosa Publishers.

**SEMESTER-V**

**COMPUTER SCIENCE  
DATA BASE MANAGEMENT SYSTEM & ORACLE  
(PRACTICAL)**

**Marks: 25**

**Practical:** Based on Database Management System and Oracle

**Note:** Practical marks will include the appropriate weightage for proper maintainance of Lab.

**SEMESTER-V****INFORMATION TECHNOLOGY (VOCATIONAL)  
OPERATING SYSTEM  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Note for Paper Setters:**

- (i) Eight questions are required to be set giving the weightage to all the portions. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) The maximum marks for the paper will be 75.
- (iii) As far as possible except in the computer language papers no programme may be asked in the Theory papers. Emphasis should be on algorithm development.

**UNIT-I**

Operating System Definition, Evolution of OS, Components of OS, Single User Operating System, Multi User Operating Systems (UNIX), Types of Processing (Batch Processing, Multiprocessing, Time Sharing, Real Time Processing (Hard Real Time Processing, Soft Real Time Processing), Multiprogrammed Batch Processing, Parallel Systems, Distributed Systems and Real Time Systems,

**UNIT-II**

Process Concept, Process Scheduling, Context Switching, CPU Scheduling: Basic Concepts, Scheduling algorithms.

Deadlocks: Deadlocks Characterization, Memory Management: Logical versus physical address space, paging, segmentation, Virtual memory, Demand Paging Technique.

**UNIT-III**

File Management, File System Structure, Allocation Methods: Contiguous Allocation, Linked Allocation, Indexed Allocation, Free Space Management: Bit Vector, Linked List, Directory Implementation, Linear, List, Hash table, Device Management: Disk Structure, Disk Scheduling, FCFS, SSTF, SCAN, C-SCAN, LOOK

Windows NT Study as an Example of Operating System,

**Reference:**

Galvin and Sillberchatz, "Operating Systems" 7th Edition.

**SEMESTER–V**

**INFORMATION TECHNOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**Marks: 25**

Practical on the basis of Operating System

**SEMESTER-V****COMPUTER MAINTENANCE (VOCATIONAL)  
(THEORY)****NETWORKING OPERATING SYSTEMS****Time: 3 Hours****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

1. Eight questions are required to be set giving the weightage to all the portions. The candidate will be required to attempt any five questions. All questions will carry equal marks.
2. The maximum marks for the paper will be 75.
3. As far as possible except in the computer language papers no programme may be asked in the Theory Paper, emphasis should be on algorithm development.

**UNIT – I**

Introduction of various Network Operating Systems (Windows 9x/XP/2000/NT)

Introduction to Windows 2003 server, Windows 2003 features, Hardware requirements, planning the network, Windows 2003 network security model special purpose servers, licensing.

**UNIT – II**

Planning storage strategies, options, working with disk administrator and backup. Networking and Network protocols Configuration of Windows 2003.

Windows 2003 services Architecture and security Architecture, planning and managing group and user accounts File services, distributed file system, remote administration, remote access services, Internet & Intranet. Printing and supporting network clients, performance tuning.

**UNIT – III**

Introduction to Windows NT, features, Hardware requirements. Windows NT services Architecture and security Architecture, planning and managing group and user accounts File services. Installation of Windows NT.

Concept of distributed Networks, E-mail & Internet Technology.

**Text & Reference Books:**

Windows NT 4: The Complete Reference by Sybex Publisher, BPB 1999.

Inside Windows Server 2003: William Boswell Publisher, Pearson, 2003.

**Network Operating Systems Lab**

Installation of Windows NT.

Implementing LAN using workgroup model and windows 2003.

Implementing LAN using Windows 2003 Domain model.

Using user manager for Domains in Administration.

Assigning user rights and permission on different objects.

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B.A./B.Sc. (Semester System) (*12+3 System of Education*) (*Semester–V*) (*Session 2018-19*)  
(*Faculty of Engineering & Technology*)

**SEMESTER–V**

**COMPUTER MAINTENANCE (VOCATIONAL)  
(PRACTICAL)**

**NETWORKING OPERATING SYSTEMS**

**Marks: 25**

Practical on the basis of Operating System

**SEMESTER-V****COMPUTER APPLICATION (VOCATIONAL)  
(THEORY)****INTERNET AND WEB DESIGNING****Time: 3 Hrs****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

- Note:** (i) Eight questions are required to be set giving the weightage to all the portions. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) The maximum marks for the paper will be 75.
- (iii) As per as possible except in the Computer language papers no programme may be asked in theory papers. Emphasis should be on algorithm development.

**UNIT – I**

1. BBS
2. Intro to Internet

**UNIT – II**

3. E-Mail, Browsers
4. HTTP, WWW, Shell, TCP/IP-(PPP, SLIP)

**UNIT – III**

5. FTP
6. HTML, Web Designing

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B.A./B.Sc. (Semester System) (*12+3 System of Education*) (*Semester–V*) (*Session 2018-19*)  
(*Faculty of Engineering & Technology*)

**SEMESTER–V**

**COMPUTER APPLICATION (VOCATIONAL)  
(PRACTICAL)**

**INTERNET AND WEB DESIGNING**

**Marks: 25**

Practical Based on Internet and Web Designing

**SEMESTER-V****INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)****Programming using C Language****Time: 3 Hrs.****Max. Marks: 75****Note:**

**(i) The paper setter is required to set eight questions in all and the candidates will be required to attempt any five questions out of these eight questions. All questions will carry equal marks.**

**(ii) The student can use only Non-programmable & Non-storage type calculator.**

**C language preliminaries:** Introduction to C, Identifiers and Key Words, Data types, Constants, Variables, Expressions, Statements,.

**Operators and I/O functions:** Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, getchar, putchar, printf, gets, puts

**Control Statements:** While, Do-while and for statements, Nested loops, If-else, Switch, Break - Continue statements.

**Functions:** Brief overview, types, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion.

**Arrays and Pointers** Defining, processing an array, passing arrays to a function, multi-dimensional arrays, Introduction to pointers, Operations on pointers, Pointers and array.

**Structure and Union: :** A simple structure, specifying the structure, defining a structure variable Accessing Structure member, Structure within structure, union, difference between structure and union.

**References:**

1. Let us C, Yashwant Kanetkar
2. C – programming E. Balagurusamy Tata McGraw Hill
3. Complete reference with C Tata McGraw Hill

**SEMESTER-V**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**Lab – I: Programming in C Language**

**Time: 3 Hrs.**

**Max. Marks: 25**

Practical based on Programming in C language

**SEMESTER-V****AUTOMOBILE MAINTENANCE (VOCATIONAL)  
(THEORY)****Time: 3 hours****Max. Marks: 60****Periods per week Theory: 6****Instructions for the Paper Setters:**

**Section-A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks i.e. (2 marks); total weightage of the section being 10 marks.

**Section-B:** It will consist of short answer questions with answer to each question upto 2 pages in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 4 marks; total weightage of the section being 20 marks.

**Section-C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry 15 marks; total weightage of the section being 30 marks.

**Unit-I**

**Objective of transmission:** Resistance, Variation of tractive efforts and total resistance with speed, Sliding mesh gearbox, Sliding mechanism, Constant mesh gearbox, Synchromesh gearbox, Simple epicyclic gear, Automobile epicyclic gearbox, General deduction, Mechanism of epicyclic gearbox, Pre-Selector Gearbox, Torque convertor, Free Wheel Unit overdriver, Gearbox troubleshooting, Transmission trouble diagnosis, Four wheel drive and transfer case operation and service, Drive lines and universal joints, Differential and drive axle

**Unit-II**

**Springs and Suspension Systems:** Introduction, Objects of suspension, Rate and frequency, Basic requirements, Classification of suspension springs, Adjustable and self adjusting suspensions, Interconnected suspension systems, Independent front suspension, Independent rear suspension, Shock absorbers, Suspension systems troubleshooting

**Unit-III**

**Fluid Fly Wheel:** Introduction, Advantages & Disadvantages of Fluid Fly wheel.

**SEMESTER-V****AUTOMOBILE MAINTENANCE (VOCATIONAL)****(PRACTICAL) LAB-I****Time: 3 Hours****Total Marks: 40****Periods per week: Practical: 4**

1. To study the Gear box dismentling and Assembling/Serviceing.
2. To study the Drive shoft and universal/Joint opening.
3. To study the Steering wheel/Droparm, Tie rod opening.

**References:**

1. Basic Automobile Engineering (Punjabi Edition) Written by C.P. Nakra, Published by Dhanpat Rai and Sons, Jalandhar, (Delhi).
2. Royal Basic Automobile Engineering Written by R.K.Kalia. (Punjabi Edition).
3. Automobile Mechanics (English Edition) Written by William H. Crousa, Donald L. Anglin.

**SEMESTER-V****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER-I (THEORY)****Time: 3 Hours****Marks: 30****Instructions for the Paper Setters:**

**Section-A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section-B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section-C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT-I**

**Steam Jet Refrigeration:** Introduction, steam jet Refrigeration, Analysis of Steam Jet Refrigeration system, Components of Steam Jet Refrigeration Plant, Advantages and Limitation of steam jet Refrigeration System, Performance of the system.

**UNIT-II**

**Non Conventional Refrigeration System:** Thermoelectric Refrigeration, Vortex Tube Thermoelectric effects, Applications of Vortex Tube, Advantages of Vortex Tube, Refrigerant Mixture and its properties, Cooling by Adiabatic demagnetization, plus Tube Refrigeration.

**UNIT-III**

**Methods of defrosting:** Necessity of Defrosting, Manual Defrosting, Automatic Periodic Defrosting, Water Defrosting, Defrosting by Reversing Cycle, Automatic Hot Gas Defrosting thermo bank Defrosting.

**SEMESTER-V****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER-J (THEORY)****Time: 3 Hours****Marks: 30****Instructions for the Paper Setters:**

**Section-A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section-B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section-C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT-I**

**Electric Defrosting:** Electric Control Defrosting, Electric Air Switch Defrosting System, Two outdoor units system, Multiple evaporator defrosting.

**UNIT-II**

**Electric Controls:** Introduction, Water Level Control, High Pressure control, Low pressure control, Superheat control, Superheat and pressure limit control, over Protection control, Temperature Differential and Temperature Range control Capacity control Devices.

**UNIT-III**

**Solar Heating and Cooling:** Introduction Solar Collectors Solar Refrigeration, Solar Air conditioning, Solar Dehumidification, Solar Heat Pump System, Economics and future of Solar Energy.

**SEMESTER-V****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)****PRACTICAL: LAB-III****Time: 2 Hours****Period Per week Practical: 4****Total Marks: 40****List of Experiments:**

1. To Study the various Gas charging in a Refrigerating system and testing for leakages
2. To study the Gas charging in a Air conditioning system and testing for leakages
3. To test and adjust low pressure out. (L.P.).
4. To test and adjust high pressure out. (H.P.)
5. To test and adjust thermostat.

**List of Books Recommended:**

<b>Name of Book</b>	<b>Author</b>	<b>Publisher</b>
Refrigeration & Air Conditioning	S.C.Arora	Dhanpat Rai
Refrigeration & Air Conditioning	Dowkundwar Khurmi	Katson Publication
Refrigeration & Air Conditioning	Sarao, Gaabi Singh	Satya Prakashan.

**SEMESTER-V**

**RELIGIOS STUDIES (ਧਰਮ ਅਧਿਐਨ)**  
**(ਸਿੱਖ ਦਰਸ਼ਨ)**

ਸਮਾਂ 3 ਘੰਟੇ  
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100  
ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ:**

ਪੇਪਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ: ਓ, ਅ, ਏ, ਸ, ਅਤੇ ਹ। ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ 2-2 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੋਵੇਗਾ ਅਤੇ ਹਰ ਇਕ ਪ੍ਰਸ਼ਨ ਦੇ 15 ਅੰਕ ਹੋਣਗੇ। ਭਾਗ ਹ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 4-4 ਅੰਕ ਹੋਣਗੇ।

**ਪ੍ਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ:**

ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ ਕੇਵਲ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੈ ਅਤੇ ਭਾਗ ਹ ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ ਹਨ।

**ਭਾਗ (ਓ) : ਸਿੱਖ ਸੰਕਲਪ-ਭਾਗ ਪਹਿਲਾ**

1. ਅਕਾਲ ਪੁਰਖ
2. ਸ੍ਰਿਸ਼ਟੀ ਰਚਨਾ
3. ਜੀਵਾਤਮਾ

**ਭਾਗ (ਅ) : ਸਿੱਖ ਸੰਕਲਪ-ਭਾਗ ਦੂਜਾ**

1. ਹੁਕਮ
2. ਸਿਮਰਨ
3. ਸੇਵਾ

**ਭਾਗ (ਏ) : ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ**

1. ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ : ਜਾਣ ਪਛਾਣ
2. ਬਾਣੀ ਦਾ ਸੰਕਲਨ
3. ਬਾਣੀ ਦਾ ਸੰਪਾਦਨ

**ਭਾਗ (ਸ) : ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦੀਆਂ ਪ੍ਰਮੁੱਖ ਬਾਣੀਆਂ**

1. ਜਪੁ ਜੀ ਸਾਹਿਬ
2. ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ ਦੇ ਸਲੋਕ
3. ਬਾਰਹਮਾਹ ਮਾਝ

**ਭਾਗ (ਹ) : ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ**

### ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:

#### English:

1. Jodh Singh, *Outline of Sikh Philosophy*, Sikh Heritage, Patiala, 2000.
2. Kohli, Surinder Singh, *Sikh Philosophy*, Singh Brothers, Amritsar, 1992.
3. Puri, Shamsheer Singh, *Handbook of Sikh Theology*, Nation Book, Delhi, 1999.
4. Sahib Singh, *About Compilation of Sri Guru Granth Sahib*, Tr. By Dalip Singh, Lok Sahit Parkashan, Amritsar, 1996.
5. Sher Singh, *Philosophy of Sikhism*, Sterling, Delhi, 1966.
6. Talib, G.S., *Introduction to Guru Granth Sahib*, Punjabi University, Patiala, 1991.
7. Taran Singh, *Guru Granth Ratnavali*, Punjabi University, Patiala, 2001.

#### Punjabi:

1. ਆਹਲੂਵਾਲੀਆ, ਜਸਬੀਰ ਸਿੰਘ, *ਸਿੱਖ ਫ਼ਲਸਫ਼ੇ ਦੀ ਭੂਮਿਕਾ*, ਰਘੁਬੀਰ ਰਚਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ, 1976.
2. ਸ਼ੇਰ ਸਿੰਘ, *ਗੁਰਮਤਿ ਦਰਸ਼ਨ*, ਸ਼੍ਰੋਮਣੀ ਗੁਰਦੁਆਰਾ ਪ੍ਰਬੰਧਕ ਕਮੇਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1982
3. ਸਾਹਿਬ ਸਿੰਘ, *ਸਲੋਕ ਗੁਰੂ ਅੰਗਦ ਸਾਹਿਬ ਸਟੀਕ*, ਸਿੰਘ ਬ੍ਰਦਰਜ਼, ਅੰਮ੍ਰਿਤਸਰ, 2011.
4. ਕਵੀਸ਼ਰ, ਸਰਦੂਲ ਸਿੰਘ, *ਸਿੱਖ ਧਰਮ ਦਰਸ਼ਨ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1969.
5. ਗਿੱਲ, ਮਹਿੰਦਰ ਕੌਰ, *ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦੀ ਸੰਪਾਦਨ ਕਲਾ*, ਰੂਹੀ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ, 1974.
6. ਗੁਰਮੁਖ ਸਿੰਘ, *ਬਾਰਹਮਾਹ ਦਰਸ਼ਨ (ਮਾਝ ਤੇ ਤੁਖਾਰੀ): ਪਾਠ, ਪ੍ਰਵਚਨ ਤੇ ਅਰਥ ਬੋਧ*, ਰੂਹੀ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 2008.
7. ਤਾਰਨ ਸਿੰਘ, *ਬਾਰਹਮਾਹ ਦਰਪਣ*, ਨਿਊ ਬੁੱਕ ਕੰਪਨੀ, ਜਲੰਧਰ, 2002.
8. ਪਦਮ, ਪਿਆਰਾ ਸਿੰਘ, *ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਪ੍ਰਕਾਸ਼*, ਕਲਮ ਮੰਦਿਰ, ਲੋਅਰ ਮਾਲ, ਪਟਿਆਲਾ, 1977.

**SEMESTER-V**  
**PHILOSOPHY**  
**WESTERN METAPHYSICS AND EPISTEMOLOGY**

**Time allowed: 3 hours**

**Max. Marks: 100**

**Lectures to be delivered: 6 per week**

**Pass Marks: 35**

**Note: Instructions for the Paper-Setter**

The question paper will consist of five sections: A, B, C, D & E. Sections A, B, C, & D will have two questions from each respective section of the syllabus and each question will carry 15 marks each. Section E, will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40 marks in all, each short answer type question carrying 4 marks.

**Instructions for the Candidates**

Candidates are required to attempt one question from each section A, B, C, and D of the question paper and the entire Section E.

**Section-A**

1. Introduction to Western Philosophy: Nature, Scope and Utility
2. Idealism: Subjective (Berkeley) and Objective (Plato).
3. Materialism: Mechanical and Dialectical.

**Section-B**

4. Monism (Spinoza)
5. Dualism (Descartes)
6. Pluralism (Leibnitz)

**Section-C**

7. Rationalism: Definition, Meaning and Characteristics
8. Empiricism: Definition, Meaning and Characteristics
9. Intuitionism: Definition, Scope and Characteristics

### Section-D

10. Existentialism: Scope and Characteristics
11. Logical Positivism: Scope and Characteristics
12. Pragmatism: Scope and Characteristics

### Section-E

Ten short answer type questions

#### Recommended Readings:

##### English Books

1. Ayer, A.J., *20th Century Philosophy*, Orion Books, London, 1992.
2. Bahm, A.J., *Philosophy An Introduction*, New Delhi, Asia publisher house, 1964.
3. Grossman Reinhardt, *Phenomenology and Existentialism: An Introduction*, London; Boston: Routledge & K. Paul, 1984.
4. James William, *Pragmatism and Four Essays from the Meaning of Truth*, New Delhi, Eurasia, 1975.
5. Stephen, Conner, *Fundamental Questions in Philosophy*, Harmondsworth, Middlesex, Penguin Books, 1971.
6. Stumpf, Samuel Enoch, *Socrates to Sartre: A History of Philosophy*, McGraw-Hill, New York, 1966.
7. Titus, H., *Living Issues in Philosophy*, Eurasia, New Delhi, 1968.

##### Punjabi Books

1. ਸੰਧੂ, ਜੀ.ਐਸ., *ਤੱਤ ਮੀਮਾਂਸਾ ਅਤੇ ਗਿਆਨ ਮੀਮਾਂਸਾ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

##### Hindi Books

1. ਪ੍ਰਸਾਦ, ਰਾਜਿੰਦਰ, *ਦਰਸ਼ਨ ਸ਼ਾਸਤਰ ਕੀ ਰੂਪਰੇਖਾ*, ਮੋਤੀਲਾਲ ਬਨਾਰਸੀਦਾਸ, ਦਿੱਲੀ, 2011.

**SEMESTER –V****ZOOLOGY**

<b>Paper</b>	<b>Maximum Marks</b>		<b>Hours of Teaching</b>	
	<b>Theory Marks</b>	<b>Practical Marks</b>	<b>Theory</b>	<b>Practical</b>
<b>SEMESTER-V</b>			<b>Credit Hrs.</b>	<b>per Week</b>
			<b>(60 min. each)</b>	
ZOO-VA (Developmental Biology)	35	—	3 Hrs	—
ZOO-VB (Genetics)	35	—	3 Hrs	—
PRACTICAL-V (RELATED TO ZOO-VA and ZOO-VB)	—	30	—	4½ Hrs

**SEMESTER-V**  
**ZOOLOGY**  
**ZOO-VA: Developmental Biology**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I**

Gametogenesis with particular reference to differentiation of spermatozoa, vitellogenesis; role of follicle/subtesticular cells in gametogenesis  
Egg maturation; egg membranes; polarity of egg  
Parthenogenesis

**UNIT-II**

Fertilization  
Cleavage and its patterns  
Gastrulation  
Determination and differentiation  
Tissue interactions, basic concepts of organizers and inductors and their role

**UNIT-III**

Development upto three germinal layers and their fate in frog, chick and rabbit  
Fate maps of chick and frog embryos  
Metamorphosis in Frog

**UNIT-IV**

Foetal membranes, their formation and role  
Mammalian placenta—its formation, types and functions  
Regeneration, Ageing and Death

**Suggested Readings:**

1. Balinsky, B.I. (2007), An Introduction to Embryology, Saunders, Philadelphia.
2. Bellairs, R. (1971), Development Processes in Higher Vertebrates, University of Miami Press, Miami.
3. Berrill, N.J. (1971), Developmental Biology. McGraw Hill, New Delhi.
4. Ebert, J.D. & Sussex, IM. (1970), Interacting Systems in Development, Holt, Rinehart and Winston, New York.

5. Gilbert, F. (2017), *Developmental Biology*, Sinaur.
6. Goel, S.C. (1984), *Principles and Animal Developmental Biology*, Himalaya, Bombay.
7. Grant, P. (1978), *Biology of Developing System*.
8. Karp. G. & Berrill, M.J. (1981), *Development*. McGraw Hill, New Delhi.
9. Oppenheimer, J.M. and Willer, B.H. (1964), *Foundation of Experimental Embryology*, Prentice-Hall, New Delhi.
10. Pritchard, D.J. (1986), *Foundation of Development Genetics*, Taylor and Francis, London.
11. Saunders, J.W. (1982), *Developmental Biology, Patterns, Principles, Problems*, MacMillan, New York.
12. Spratt, N.T. Jn. (1971), *Developmental Biology*, Wordsworth, Belmont, Co.
13. Waddigton CH. (1966), *Principles of Development and Differentiation*, MacMillan, New York.
14. Loomis, W.F. (1986), *Developmental Biology* Macmillan, New York.
15. Miller, W.A. (1997), *Developmental Biology* Springer Verlag, New York.

**SEMESTER-V****ZOOLOGY****ZOO-V B: Genetics****(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I**

**Modification of Mendelian Ratios:** Non-allelic gene interaction, Modified F<sub>2</sub> ratios. (9:7;9:3:4;12:3:1;13:3;15:1;9:6:1), Gene modifications due to incomplete dominance; lethal factors(2:1); Pleiotropic genes.

**Multiple Alleles:** Blood group inheritance, eye colour in *Drosophila*, pseudoallelism.

**Multiple Factors:** Qualitative and quantitative characters, inheritance of quantitative traits (skin colour in man).

**Linkage:** Linkage, sex-linked characters

**Crossing Over and Recombination:** crossing over, frequency of crossing over, cytological basis of crossing over, synaptonemal complex. Recombination in Fungi (Tetrad analysis).

**UNIT-II**

**Gene and Genetic Code:** Structure of nucleic acids (DNA & RNA).

**Replication & transcription of DNA**

**Expression of gene** (Protein synthesis in Prokaryotes and Eukaryotes).

**Genetic code:** Properties of genetic code, codon assignment, wobble hypothesis, split and overlapping genes,

**UNIT-III**

**Mutations:** Spontaneous and induced mutations, physical and chemical mutagen. Detection of mutations in Maize and *Drosophila*. Inborn errors of metabolism in man (Phenylketonuria, Alcaptonuria, Albinism). Somatic mutations and carcinogenesis.

**Regulation of gene expressions** in prokaryotes (Operon model) in eukaryotes.

**Extranuclear inheritance:** Chloroplast with special reference to *Mirabilis jalapa* and kappa particles in *Paramecium*.

#### UNIT-IV

**Population genetics:** Equilibrium of gene frequencies and Hardy-Weinberg law.

**Genetic recombination** in bacteria (conjugation, transduction and transformation) and in plasmids.

**Applied Genetics:** Recombination DNA, Genetic cloning and its applications in medicine and agriculture, DNA finger printing.

#### Suggested Readings:-

1. Ayala, F.J. & Kiger, Jr. J.A. (1980), Modern Genetics. The Benjamin Cummings Publishing Co. Inc.
2. Brown T.A. (1992), Genetics- A Molecular Approach, (2<sup>nd</sup> ed), Van Nostrand Rainhold (international).
3. Gardener, E.J., Simmons, M.T.J. & Sunstad, D.P. (1999), Principles of Genetics, (8<sup>th</sup> ed), John Wiley & Sons, New York.
4. Miglani, G.S. (2000), Basic Genetics, Narosa Publishing House, New Delhi.
5. Winter, P.C., Hickey, G.I. and Fletcher, H.L. (1999), Instant notes in Genetics, New Delhi.
6. Satson, J.D. et. al. (1987), Molecular Biology of Gene (4<sup>th</sup> ed. vol. I & II), The Benjamin /Cummings Publishing Co., Inc.
7. Weaver, R.F. and Hedrick, P.W. (1992), Genetics, Wm. C. Brown Publishers Dubuque.
8. Zubay. U.G. (1987), Genetics, The Cummings Publishing Co., Inc.

**SEMESTER-V**

**ZOOLOGY**

**Practical-V (Related to ZOO-V A and ZOO-V B)**

**Time: 3hrs.**

**Marks: 30**

**Important Note for Practical:**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines the dissections may please be avoided. In no case an animal falling under the categories of wildlife protection act 1972 should be caught or dissected. The rules of the Prevention of cruelty to Animals act 1960 should be familiar to all who are teaching the zoology courses. The guidelines on this issue are also available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)
1. Demonstrate the Law of segregation and independent assortment (use of coloured beads capsules etc.) Numericals for segregation, independent assortment and Epistasis.
2. Demonstration of segregation in preserved material (Maize).
3. Demostation of cytoplasmic inheritance in snails.
4. Inheritance of human characteriscts.
5. Comparison of variance in respect of pod length and number of seeds/pods.
6. Calculation of gene frequencies and random mating (coloured beads, capsules).
7. Pedigree analysis
8. Dermatoglyphics: Palm print and finger tip patterns.
9. Study of the following permanent slides :
  - Polytene Chromosomes of *Chironomus*.
  - Stages of gametogenesis, structure of egg and sperm of a mammal.
  - Larva of *Herdmania*.
  - Developmental stages of freshwater snail (*Limnaea*), frog-upto tadpole, chick-upto 96 hr.
10. Preparation of charts showing developmental stages of any vertebrate.

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of Practical Examination:**

- |   |    |
|---|----|
| 1. Two Numericals based on Mendel/Hardy Weinberg Law.                     | 10 |
| 2. Perform the experiment for Dermatoglyphics/ Random mating/ Pod Length. | 4  |
| 3. Identification of given spots/slides.                                  | 6  |
| 4. Make a pedigree chart from the given data.                             | 3  |
| 5. Chart/Assignment.  | 2  |
| 6. Viva-voce and practical file.  | 5  |

**SEMESTER-V**  
**BOTANY**  
**PAPER-VA: PLANT PHYSIOLOGY**

**Time: 3 Hrs.**  
**Theory Lectures: 3 Hours/Week**  
**Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer-type (3-4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit-I**

**Plant-Water Relation:** Importance of water to plant life, physical properties of water, (imbibition) diffusion and osmosis, absorption, transport of water and transpiration, physiology of stomata.

**Unit-II**

**Mineral Nutrition:** Essential macro-and micro-elements and their role, mineral uptake, deficiency and toxicity symptoms (hydroponics).

**Transport of Organic Substances:** Mechanism of phloem transport, source-sink relationship, factors affecting translocation.

**Unit-III**

**Photosynthesis:** Significance, historical aspects, photosynthetic pigments, action and absorption spectra and enhancement effects, concept of two photosystems, z-scheme, photophosphorylation, Calvin cycle, C4 pathway, CAM plants, photorespiration.

**Unit-IV**

**Growth and Development:** Definitions, phases of growth and development, kinetics of growth, seed dormancy, seed germination and factors of their regulation, plant movements, the concept of photoperiodism, physiology of flowering, florigen concept, biological clocks, physiology of senescence, fruit ripening, plant hormones - auxins, gibberellins, cytokinins, abscisic acid and ethylene, history of their discovery, biosynthesis and mechanism of action, general account of salicylic acid, jasmonates and brassinosteroids, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.

**Suggested Readings:-**

1. Dennis, D.T., Turpin, D.H. Lefebvre, D.D. and Layzell (eds.) 1997. Plant Metabolism (2<sup>nd</sup> Edition). Longman, Essex, England.
2. Galston, A.W. 1989. Life Processes in Plants. Scientific American Library, Springer-Verlag, New York, USA.
3. Hopkins, W.G. and Huner, A. (2008). Introduction to Plant Physiology (4th Edition). John Wiley and Sons. U.S.A.
4. Mandavia, C., Patel, S. V., Mandavia, M. K., Golakiya, B. A. and Chovatia, V. P. (2009). Glimpses in Plant Physiology. International Book Distributing Co., Lucknow, India.
5. Mohr, H. and Schopfer, P. 1995. Plant Physiology. Springer-Verlag, Berlin, Germany.
6. Salisbury, F.B. and Ross, C.W. 1992. Plant Physiology (4th Edition). Wadsworth Publishing Co., California, USA.
7. Taiz, L. and Zeiger, E. (2010). Plant Physiology (5th Edition). Sinauer Associates Inc. USA.
8. Buchanan, B.B., Gruissem, W. and Jones, R.L. (2002). Biochemistry and Molecular Biology of Plants, American Society of Plant Physiologists, Maryland.

**SEMESTER-V**  
**BOTANY**  
**PAPER-VB: BIOCHEMISTRY AND BIOTECHNOLOGY**

**Time: 3 Hrs.**  
**Theory Lectures: 3 Hours/Week**  
**Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer-type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit-I**

**Basics of Enzymology:** Discovery and nomenclature, characteristics of enzymes, concept of holoenzyme, apoenzyme, coenzymes and cofactors regulation of enzyme activity, mechanism of action.

**Unit-II**

**Respiration:** ATP-the biological energy currency, aerobic and anaerobic respiration, Krebs' cycle, electron transport mechanism (chemi-osmotic theory), redox potential, oxidative phosphorylation, pentose phosphate pathway.

**Unit-III**

**Nitrogen and Lipid Metabolism:** Biology of nitrogen fixation, importance of nitrate reductase and its regulation, ammonium assimilation, structure and function of lipids, fatty acid biosynthesis, -oxidation, saturated and unsaturated fatty acids, storage and mobilization of fatty acids.

**Unit-IV**

**Genetic Engineering:** Tools and techniques of recombinant DNA technology, cloning vectors, genomic and cDNA library, transposable elements, techniques of gene mapping.

**Biotechnology:** Functional definition, basic aspects of plant tissue culture, cellular totipotency, differentiation and morphogenesis, biology of *Agrobacterium*, vectors for gene delivery and marker genes, salient achievements in crop biotechnology.

**Suggested Readings:-**

1. Bhojwani, S.S. (1990). Plant Tissue Culture: Applications and Limitations. Elsevier Science Publishers, New York, USA.
2. Dennis, D.T., Turpin, D.H. Lefebvre, D.D. and Layzell (eds.) (1997). Plant Metabolism (2<sup>nd</sup> Edition). Longman, Essex, England.
3. Galston, A.W. (1989). Life Processes in Plants. Scientific American Library, Springer-Verlag, New York, USA.
4. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.
5. Lea, P.J. and Leegood, R.C. (1999). Plant Biochemistry and Molecular Biology. John Wiley Sons, Chelichester, England.
6. Old, R.W. and Primrose, S.B. (1989). Principles of Gene Manipulation, Blackwell Scientific Publishers, Oxford, UK.
7. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics (5th Edition). John Wiley and Sons Inc., U.S.A.
8. Stewart, C.N. Jr. (2008). Plant Biotechnology & Genetics: Principles, Techniques and Applications. John Wiley & Sons Inc. U.S.A.
9. Vasil, I.K. and Thorpe, T.A. (1994). Plant Cell and Tissue Culture. Kluwer Academic Publishers, The Netherlands

**SEMESTER-V**  
**BOTANY**

**Botany Practicals – V (Based on Papers- VA and VB)**

**Practical Hours: 4½ Hours/week Practical Marks: 30**  
**Suggested Laboratory Exercises:**

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effects of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
4. To study the enzyme activity of catalase and peroxidase as influenced by pH and temperature.
5. Separation of chloroplast pigments by solvent method.
6. Determining the osmotic potential of vacuolar sap by plasmolytic method.
7. Determining the water potential of any tuber.
8. Separation of amino acids in a mixture by paper chromatography and their identification by
9. comparison with standards.
10. Bioassay of auxin, cytokinin, GA, ABA and ethylene using appropriate plant material.
11. Demonstration of the technique of micropropagation by using different explants, e.g. axillary buds, shoot meristems.
12. Demonstration of the technique of another pollen culture.
13. Demonstrate the ascent of sap using a dye.
14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.
15. Demonstrate the transpiration pull by mercury method.
16. Demonstration of osmosis by potato osmoscope.
17. Comparison of loss of water from two surfaces of leaf by  $\text{CoCl}_2$  method/four leaf method.
18. Demonstration of imbibition by plaster of paris method.
19. Demonstration that  $\text{O}_2$  is evolved during photosynthesis.
20. Separation of pigments by paper chromatography/TLC method.
21. Demonstration of phototropism movements.
22. Demonstration the measurements of growth by arc auxanometer.
23. Preparation of nutrient medium.
24. Sterilization of glassware and plant material.
25. Preparation of explant for aseptic manipulation.
26. Requirements for setting up the tissue culture laboratory.

### **Suggested Readings (For Laboratory Exercises)**

1. Bajracharya D. (1999). Experiments in Plant Physiology-A Laboratory Manual. Narosa Publishing House, New Delhi.
2. Devi, P. 2000. Principles and Methods of Plant Molecular Biology, Biochemistry and Genetics. Agrobios, Jodhpur, India.
3. Dixon, R.A. (Ed.) 1987. Plant Cell Culture: A Practical Approach, IRL Press, Oxford.
4. Kochhar, S. L. and Gujral, S. K. (2012). Comprehensive Practical Plant Physiology. Macmillan Publishers India Ltd., Delhi.
5. Moore, T.C. 1974. Research Experiences in Plant Physiology: A Laboratory annual. Springer-Verlag. Berlin.
6. Plummer, D.T. (1996). An Introduction to Practical Biochemistry (3rd Edition). Tata McGraw-Hill Publishing Co. Ltd. New Delhi.
7. Roberts, J. and Tuckar, G.A. (Eds.) 2000. Plant Hormone Protocols. Human Press, New Jersey, USA.
8. Scott, R.P.W. 1995. Techniques and Practices of Chromatography. Marcel Dekker, Inc., New York.
9. Smith, R.H. 2000. Plant Tissue Culture: Techniques and Experiments. Academic Press, New York.
10. Wilson, K. and Goulding, K.H. (Eds.) 1986. A Biologists Guide to Principles and Techniques of Practical Biochemistry. Edward Arnold, London, UK.

**SEMESTER-V****MICROBIOLOGY  
APPLIED MICROBIOLOGY-I  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setter:**

There will be a total of nine questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include two questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT-I**

Microorganisms in Industry: Historical development definition and scope of industrial microbiology; contribution of Louis Pasteur in fermentation; sources of industrial microorganisms and their essential characteristics, natural habitats, cultural collections and preservation of stock cultures.

**UNIT-II**

Screening of Microorganisms: Isolation of industrially important microorganisms, primary and secondary screening methods for isolating useful Yeast, bacteria and fungi. Fermentation media: Composition of production media, characteristics of an ideal production medium, raw materials.

**UNIT-III**

Fermentation and Fermentation Processes: Fermentation as biological activity, Types of industrial fermentation's (submerged, solid state and continuous fermentation). Design of fermentor (body construction, aeration and agitation and control of septic conditions), Basics of batch culture, fedbatch culture and continuous culture.

**UNIT-IV**

Recovery and purification of fermentation products: General principles of separation of fermentation products, solid particles, foam separation, separation by filtration, centrifugation, cell disruption, liquid-liquid chromatography, ion-exchange chromatography. Fermentation economics; plant fermentation designing, process designing, market potential and recovery costs for the industrial set-up.

**Books Recommended:**

1. Casida, L.E. 1991. *Industrial Microbiology*. Wiley Eastern Ltd., New Delhi.
2. Stanbury, P.F. Whittaker, A. and Hall S.J. 1995. *Principles of Fermentation Technology*. Elsevier Science Ltd., U.K.
3. Patel, A.H. 1984. *Industrial Microbiology*, Macmillan India Ltd., Delhi.
4. Trevan M.D., Saffey, S., Goulding, K.H. and Stanberry, P. 1988. *Biotechnology: The Biological Principles*, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
5. Freifelder, D. 2006. *Microbial Genetics*. Jones and Bartlett Publishers Inc., Boston.

**SEMESTER-V  
MICROBIOLOGY**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

1. Isolation of various types of microorganisms from (a) soil (b) fruits.
2. Screening of some industrially important microorganisms
  - a. amylase producers.
  - b. protease producers.
3. Protein estimation by Lowry method.
4. Preservation of industrially important microorganisms by various methods (a) storage in 10 % glycerol (b) storage in mineral oil.
5. Determination of % viability of Yeast cells by haemocytometer.

**SEMESTER-V**  
**INDUSTRIAL MICROBIOLOGY**  
**(VOCATIONAL)**

**ENVIRONMENT AND AGRICULTURAL MICROBIOLOGY**  
**(THEORY)**

**Time: 3 Hrs.**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setter:**

There will be a total of nine questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include two questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT-I**

Physico chemical characteristics of soil, water and air in relation to microorganisms. Microbiology of air, soil and water. Genetic & Physiological adaptations to environmental condition.

**UNIT-II**

Biogeochemical cycling of carbon, hydrogen, oxygen, sulphur, phosphorus-Interactions among microbial population: Neutralism, Commensalism, Mutualism, Competition, Amensalism, Parasitism, Predation, Mycorrhizal, association.

**UNIT-III**

Agricultural Microbiology. Soil fertility and management of agricultural soil. Influence of available nitrogen on soil fertility, Crop rotation, soil management practices, Mushroom cultivation and their use.

**UNIT-IV**

Biological Control: General consideration, viral pesticides, Bacterial pesticides & fungal pesticides, concept of biomagnification. Biodegradation of pollutants: Solid waste management, sanitary land fills, composting, Treatment of waste, primary treatment, secondary treatments, tertiary treatment, Disinfection.

**Books Recommended:**

1. ATLAS, R.M. and Bartha, M. 1981. *Microbiology Ecology*, Fundamentals and Applications.
2. Brock, T.D. 1966. *Principles of Microbial Ecology*, Prentice Hall, USA.
3. Campbell, R. 1977. *Microbial Ecology*, Blackwell Scientific, London.
4. Lynch, J.M. and Poole, M.J. 1979. *Microbial Ecology: A Conceptual Approach*, Blackwell Scientific, London.

**SEMESTER-V****INDUSTRIAL MICROBIOLOGY (VOCATIONAL)****(PRACTICAL)****Time: 4 Hrs.****Marks: 25**

1. Study of symbiotic/asymbiotic nitrogen fixing bacteria.
2. Study the process of ammonification.
3. To study nitrification in soil.
4. Isolation of *Aspergillus niger* from soil.
5. IMVIC test for water analysis.

**SEMESTER-V**  
**MICROBIAL & FOOD TECHNOLOGY**

**APPLIED MICROBIOLOGY**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Mark: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setter:**

There will be a total of nine questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include two questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT-I**

Microorganisms in industry: Historical development definition and scope of industrial microbiology; contribution of Pasterns in fermentation; sources of industrial microorganisms, essential characteristics, natural habitats, cultural collections and preservation of stock cultures.

**UNIT-II**

Screening of microorganisms: Isolation of industrially important microorganisms, Screening of useful yeast, Bacteria and Fungi. Fermentation Media: Composition of Production Media, characteristics of an Ideal Production Medium, Raw Materials.

**UNIT-III**

Fermentation and fermentation processes: Fermentation as biological activities types of industrial fermentation's (sub-merged, solid state and continuous fermentation). Design of Fermentor (Body Construction, Aeration and Agitational and Control of Septic Conditions), Basics of Batch Culture, Fed-Batch Culture and Continuous Culture.

#### UNIT–IV

Recovery and purification of fermentation products: General principles of separation of fermentation products, solid particles, foam separation, separation by filtration, centrifugation, cell disruption, solvent extraction, ion-exchange chromatography.

#### **Books Recommended:**

1. Casida, L.E. 1991. *Industrial Microbiology*. Wiley Eastern Ltd., New Delhi.
2. Stanbury, P.F. Whitakker, A. and Hall S.J. 1995. *Principles of Fermentation Technology*. Elsevier Science Ltd., U.K.
3. Patel, A.H. 1984. *Industrial Microbiology*, Macmillan India Ltd., Delhi.
4. Trevan M.D., Daffey, S., Goulding, K. H. and Stanberry, P. 1988. *Biotechnology: The Biological Principles*, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
5. Rose A.H. 1961, *Industrial Microbiology*, Butterworths, Washington.

**SEMESTER-V**  
**MICROBIAL & FOOD TECHNOLOGY**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

1. Determination of % gluten content & SDS value of wheat flour.
2. Isolation of bacteria, fungi from soil.
3. Isolation of amylase producing microorganisms from soil.
4. Isolation of yeast from fruits and flowers.
5. To study the growth curve of yeast.
6. Production of alcohol, lactic acid and yogurt.

**SEMESTER-V**  
**BIOINFORMATICS (VOCATIONAL)**

**COMPUTATIONAL METHODS FOR SEQUENCE ANALYSIS**  
**(THEORY)**

**Time: 3 Hrs.**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions.
2. Question 1 will be compulsory and will be of 10 short answer type. **(1½ X10=15)**
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks. **(15x4=60)**

**UNIT-I**

Sequence Alignment: Scoring matrices (PAM and BLOSUM), Local and Global alignment concepts, dynamic programming methodology (Needleman and Wunsch algorithm, Smith Waterman algorithm), Statistics of alignment score, Multiple Sequence alignment (Progressive alignment), Database searches for homologous sequences (Fasta and Blast versions).

**UNIT-II**

Fragment assembly: Genome sequence assembly, Gene finding methods: concept and signal methods, Background of transform techniques, Fourier Transform and Gene Prediction, Pattern and Motif searching, Analysis and prediction of regulatory regions.

**UNIT-III**

Neural Network concepts and secondary structure prediction. Probabilistic models: Markov chain (random walk), Hidden Markov models, Gene identification and other applications.

**UNIT-IV**

Evolutionary analysis: Basics of evolution: Rooted and unrooted trees, molecular clock theory, molecular markers used in studying evolution. Distances based methods and Clustering Methods of evolution, Bootstrapping strategies.

**List of Books:**

1. Waterman M.S. (Eds). *Introduction to Computational Biology: Maps, sequence and genome*. Chapman and Hill. London, (1995).
2. Yop T.K., Frieder O, Martino R.L., *Hogh Performance computation methods for biological sequence analysis*. Kluver Academic Publishers, Dordrecht. (1996).
3. Suhai (Eds). *Theoretical and computation methods in genome research*. Plenum Press, New York (1997).
4. Durbin R, Eddy S.R., Krogh A, Mitchison G, *Biological sequence analysis. Probablistic models of proteins and nucleic acid*. Cambridge University Press (1998).
5. Schulze K.S., *Molecular Bioinformatics: counselling and application*. Walterde Gruyter Berlin New York (1995).
6. Setubal J, Meidanis J, *Introduction to Computational Molecular Biology*. PWS Publishing Company. Boston (1996).
7. Gusfield D. *Algorithms on strings, stress, trees and sequence*. Computer Science and Biology. Cambridge Uiversity Press, Cambridge (1997).
8. Bishop M.J., Rawling C.J. (Eds). *DNA and Protein Sequence analysis. A Practical Apporach*. IRL Press. Oxford (1997).

**SEMESTER-V****BIOINFORMATICS (VOCATIONAL)****LAB IN COMPUTATIONAL METHODS FOR SEQUENCE ANALYSIS  
(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Credit Hours: 4½**

- Tools to study local and global alignments.
- To study multiple sequence alignment using Clustal-W and T-COFFEE.
- To study gene prediction in Eukaryotes and Prokaryotes using GENSCAN, GLIMMER, GeneMark, ORF FINDER.
- Evolutionary analysis using Phylip.

**SEMESTER-V  
BIOTECHNOLOGY (VOCATIONAL)**

**rDNA TECHNOLOGY AND ANIMAL BIOTECHNOLOGY  
(THEORY)**

**Time: 3 Hrs.  
Teaching Hours: 6**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions
2. Question 1 will be compulsory and will be of 10 short answer type. **(1½x10=15)**
3. The remaining 8 questions shall include 2 questions from each unit.  
Candidates shall be required to attempt 1 question from each unit.  
All questions shall have equal marks. **(15x4=60)**

**rDNA Technology**

**UNIT-I**

DNA Modifying enzymes: Ligases for blunt & sticky end ligation), DNA Polymerases, Klenow fragment, Alkaline phosphatase, Polynucleotide kinase, Terminal deoxynucleotidyl transferase, Restriction enzymes, reverse transcriptase.

**UNIT-II**

Cloning Vectors for E.coli: features of plasmids and development of plasmids as vector ( -complementation) bacteriophages as vector, Genetic selection (HfL, SPi), Cosmids.

**UNIT-III**

Southern Hybridization, Methods of Transformation: CaCl<sub>2</sub>, electroporation, transfection, micro projectile bombardment, Labelling of DNA and RNA- Radioactive labeling (Nick Translation, Random Priming, End Labelling), Non-Radioactive labelling (Direct & Indirect non isotopic labeling ), cDNA cloning: Linker, Adaptation, Different strategies for cDNA cloning- self priming, adaptor linker method, Introduction , principles & applications of PCR.

### **Animal Biotechnology**

#### **UNIT-IV**

General metabolism (Glucose and Glutamine), inhibition of metabolism, Bioreactors for large scale culture of cells Growth factors promoting proliferation of animal cells (EGF, FGF, PDGF, IL-1, IL-2, NGF, erythropoietin etc.), The need to express proteins in animal cells. Transfection – vectors (P element vector, SV 40 vectors, BPV vector, reteroviral vectors), selectable markers, Transfection methods (Calcium Phosphate precipitation, DEAE Dextran, microinjection, electroporation, protoplast fusion, somatic cell nuclear transfer, lipofection)

#### **UNIT-V**

Expressing cloned proteins in animal cells -Insulin, Growth hormone, Interferon, t-plasminogen activator, factor VIII., Overproduction and processing of chosen protein. Production of vaccines in animal cells, Production of monoclonal antibodies, Stem cells-sources of stem cells & their applications.

#### **Books Recommended:**

1. Butler, M. (1987). *Animal Cell Technology–Principles and Practices*, Oxford University Press.
2. Goeddel, D.V. (1990). *Methods in Enzymology*, Vol. 185 *Gene Expression Technology*, Academic Press Inc. San Diego.
3. Mickloss, D.A. and Freyer, G.A. (1990). *DNA Science: A First Course in Recombinant Technology*, Cold Spring Harbor Laboratory Press, New York.
4. Butler, M. (1991). *Mammalian Cell Biotechnology–A Practical Approach*, IRL, Oxford University Press.
5. Spier, R.R. and Griffiths, J.B. (1994). *Animal Cell Biotechnology*, Academic Press, London.
6. Freshney, RT. (1994). *Culture of Animal Cells*, John Wiley and Sons, New York.
7. Primrose, S.B. (1994). *Molecular Biotechnology*, 2nd edition, Blackwell Scientific Publishers, Oxford.
8. Glover, D.M. and Hames, B.D. (1995). *DNA Cloning: A Practical Approach*, IRL Press, Oxford.
9. Rasko, L, and Downes, C.S. (1995). *Genes in Medicine*, Champan & Hall.
10. Berger, S.L. and Kimmel, A.R. (1996). *Methods in Enzymology*, Guide to Molecular Cloning Techniques, Vol. 152, Academic Press Inc., San Diego.
11. Butler, M. (1996). *The Animal Cell Culture and Technology*, IRL, Oxford University Press.
12. Maulik S. and Patel, S.D. (1997). *Molecular Biotechnology Therapeutic Application and Strategic*, John Wiley & Sons.
13. Sambrook, J., Fritsch, E.F. and Maniatis, T. (2000). *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratory Press, New York.

**SEMESTER-V****BIOTECHNOLOGY (VOCATIONAL)****rDNA TECHNOLOGY AND ANIMAL BIOTECHNOLOGY  
(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Teaching Hours: 4½**

Isolation of chromosomal and plasmid DNA from bacteria

Isolation of genomic DNA from blood

Agarose gel electrophoresis

Spectrophotometer analysis of DNA.

Restriction digestion of DNA

Making competent E. coli

Transformation and selection of competent E Coli.

**SEMESTER-V  
EDUCATION**

**DEVELOPMENT OF EDUCATION IN INDIA**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Note:** (i) The question paper will consist of five Units: I, II, III, IV & V. Units I, II, III & IV will have two questions each carrying 20 marks. The students are to attempt one question from each unit approximately in 1000 words. Unit -V consists of 10 short answer type questions to be set from their entire syllabus and will carry 20 marks in all. Each short answer type question carries 2 marks, to be attempted in 8 to 10 lines.

**UNIT-I**

1. Concept of Education in Vedic-Era with special reference to aims, curriculum & role of teacher
2. Education in Buddhist period with special reference to aims, curriculum & role of teacher

**UNIT-II**

1. Salient features of Indian Education during Medieval period
2. Recommendations of Major Commissions & Committee set up during British Period with special reference to Charter Act (1813), Maculay's Minute (1835) and Wood's Despatch (1854).

**UNIT-III**

1. Concept & features of Basic Education
2. Constitutional Provisions of Education

**UNIT-IV**

1. Major recommendations of Secondary Education Commission (1952-53) and Indian Education commission (1964-66)
2. Salient features of NPE (1986)

**UNIT-V**

This Unit (V) will consist of 10 short type questions to be set from the entire syllabus of first four Units (I, II, III, IV)

**Books Recommended:**

1. Aggarwal, J.C. Landmarks in the History of Modern Indian Education, Vikas Publishing House Pvt. Ltd., New Delhi, 2004.
2. Aggarwal, J.C.: Modern Indian Education: History Development and Problems, New Delhi, Shiplra Publication House (2006).
3. Govt. of India, Ministry of Education, Report of Education Commission (1964-66), New Delhi, 1986
4. Govt. of India, Ministry of Human Resources Development, National Policy of Education, New Delhi, 1986.
5. Govt. of India, Challenge of education, A Policy Perspective, New Delhi, 1986.
6. Govt. of India, Ministry of Human Resources Development, National Policy of Education, New Delhi, 1986 (with Modifications undertaken in 1992), New Delhi, 1992.
7. Saxena Swaroop, N.R., Education in Emerging India Chaturvedi Sikha Society, R.Lall, Book Depot, Meerut, 2005.

**SEMESTER-V****HUMAN RIGHTS****PAPER – INTERNATIONAL HUMAN RIGHTS****Time: 3 hours****Max. Marks: 100****Instructions for the Paper Setters:**

The question paper will consist of five sections A, B, C, D and E. Section A, B, C and D will have two questions from the respective portion of the syllabus and will carry 20 marks each. Section E will consist of 10 short answer type questions to be set from the entire syllabus i.e. sections A,B,C & D and will carry 20 marks in all ,such short answer type questions carry 2 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each, from sections A, B, C and D of the question paper and the entire section E. The candidates are required to answer the short questions in not less than 50 words.

**UNIT-I**

Organizations related to Human rights; Instruments of Human rights and covenants; role of UNO, UN Commission of Human Rights, UN children's fund (UNICEF), UN commission on the status of Women, ILO, UNESCO.

**UNIT-II**

International humanitarian issues, laws and assistance.

**UNIT-III**

International Human rights provisions: Torture, custodial violence, disappearance, prisoners, and under trials.

**UNIT-IV**

Role of NGOs, role of Amnesty, Red Cross and NHRC

**Recommended Books:**

1. Khare, Subhash Chandra, Human Rights and United Nations Metropolitan Co. New Delhi.
2. Iyer, V.R. Krishna, Hman Rights and the Law, Vapul law, Indore.
3. Kashyap, subhash, Human Rights and Parliament, Metropolitan Book co. Delhi.
4. Sinha, P.C. Global sourcebookon Human Rights Part I, Kanishka Publishers, New Delhi.
5. Sinha, P.C., Global source book on Human rights part II, Kanishka Publishers, New Delhi.

## SEMESTER-V

### DAIRY FARMING (VOCATIONAL) (THEORY)

**Time: 3 Hours**  
**Periods per week: 6**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

#### Instructions for the Paper Setters:

1. Question paper should be set strictly according to the syllabus and in Punjabi language.
2. The language of questions should be straight and simple.
3. Theory paper shall consist of three parts :-
  - a) Five short compulsory questions of two marks each requiring short replies up to five lines each. **(Total marks: 05x2=10).**
  - b) Five questions of six marks each requiring short replies shall be asked. The candidate has the choice to attempt four questions. **(Total Marks: 4x6=24).**
  - c) Two questions of descriptive type requiring five pages for each answer shall be asked. The candidate has the choice to attempt one question. **(Total Marks: 16x1=16).**
4. The question paper should cover the whole syllabus.

#### 1. Fodder Production

Importance of green fodder in milk production, recommendations for cultivation of different fodder crops, nutritional value and yield of different fodder crops.

Legume and non-legume fodders. Enhancing nutritional value and yield of fodder crops. Fodder crop rotations and mixtures. Conservation of surplus green fodder. Feeding of green fodder, hay and silage. Fodder trees, bushes and grasses. Availability of fodders in different seasons for animals. Plan for Green fodder production throughout the year for Dairy Animals. Crop residues and byproducts. Enrichment of roughages.

#### 2. Diseases of Cows and Buffaloes

Diseases of Nutritional Deficiency. Infectious and noninfectious diseases. Symptoms of different diseases. External and internal parasitic diseases and their control. Prevention of different diseases. Preventive vaccination schedule in a dairy farm. Control of reproductive disease. Use of sanitation and disinfection in disease control in a dairy farm. Diseases transmitted through milk. Veterinary First-Aid Zoonotic-diseases through from animals to man and viceversa. Segregation and quarantine.

#### 3. Economics of Dairy Farming

Economic parameters in a dairy farm. Income and expenditure details for upkeep of ten cows/buffaloes rural dairy unit.

Factors affecting profitability of a dairy unit. Advantages of mixed farming.

**SEMESTER-V**

**DAIRY FARMING (VOCATIONAL)**

**(PRACTICAL)**

**Time: 3 Hours**

**Total Marks: 50**

**Distribution of Marks:**

<b>Assignment</b>	<b>10 Marks</b>
<b>Practical Note book</b>	<b>10 Marks</b>
<b>Four Visits to Dairy Farms</b>	<b>10 Marks</b>
<b>Oral Examination</b>	<b>10 Marks</b>
<b>Written Test</b>	<b>10 Marks</b>

**Note:** Preparation of Practical Note book and Dairy Farm Assignment is compulsory

1. Formulation and costing of Dairy Rations.
3. Expenditure and Income Calculations.
4. Recognition of Disease Symptoms.
5. Recognition of Heat Symptoms.
6. Visit to NDRI Karnal.
7. Two visits to PAU Ludhiana.
8. Filling of Dairy Record Performs.
9. Recognition of External and Internal Parasites.

**Text Books:**

1. A Text book of Animal Husbandry by G.C. Banerjee.
2. A Text book of Livestock Production and Management in Tropics by D.N. Verma.
3. Livestock Production and Management by NSR Sastry and C.K. Thomas.
4. Livestock and Poultry Production by H. Singh and E.N. Moore.
5. Handbook of Animal Husbandry Published by ICAR New Delhi.
6. Thronton's Meat Hygiene by Thronton.
7. Dairy Farming: Extension booklet No. PAU/1992/F/29/P published by Communication Centre, PAU, Ludhiana (Punjab).
8. "Dudharaun Layee Dharay" (Punjabi) Extension booklet No. PAU/1993/F/560 Published by PAU, Ludhiana.
9. Dairy Farm Record Keeping, PAU, Ludhiana (Punjabi) Booklet.
10. Feeding Dairy Cattle Extension booklet published by NDRI, Karnal. (English).



**SEMESTER-V****RSL-301:****RUSSIAN****PAPER-II (ORAL)****Max. Marks: 20**

Dictation

**Marks: 05**

Simple Conversation

**Marks: 05**

Retelling of a text

**Marks: 05**

Reading of a text

**Marks: 05****Prescribed Text-Book:**

“RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 41 to 52)

**Recommended Books:**

1. Langenscheidt Pocket Russian Dictionary.
2. Russian for Indians by Hem Chandra Pande.
3. “RUSSIAN” – by Ovsienko Y.G. & Skopina (Part-I & II)

**SEMESTER-V**

**FRL-301:**

**FRENCH**

**PAPER-I (WRITTEN) (COMPOSITION, GRAMMAR & COMPREHENSION)**

**Time: 3 Hrs.**

**Max. Marks: 80**

**A. Composition**

i) A composition of around 200 words from the given topics. (One out of four) **Marks: 10**

**B. Grammar**

i). Questions on applied grammar. (Exercises from the textbook) **Marks: 20**

**C. Comprehension**

i) An unseen comprehension passage **Marks: 10**

**COMPOSITION TOPICS:**

- La vie en ville /au village, La France, Mon pays, La cuisine, Un pique nique au bord de la mer, Mon acteur/actrice/ écrivain favori, Mes rêves, Un voyage, La vie au xxi siècle, L'influence de la télévision/radio/presse écrite sur les jeunes, Le mariage – est-ce que c'est une institution, essentielle?, L'amour ou l'argent, Si J'étais....., je....., Les souvenirs de mon enfance, Les vacances en Inde.

**TRANSLATION:**

1. Translation from French into English. (Passage) **Marks: 10**

2. Translation from English into French. (Short sentences) **Marks: 10**

**Note: Glossary of difficult words may be given for translation purpose in the question paper.**

**TEXT:**

1. Questions of general comprehension pertaining to the vocabulary covered in the text book (e.g. Comment aimez – vous passer les vacances?) **Marks: 10**

2. Objective type questions pertaining to the various aspects of French civilization covered in the textbook. (10 questions out of 15 in the form of fill in the blanks or multiple choices to be attempted). **Marks: 10**

**SEMESTER-V****FRL-301:****FRENCH****PAPER-II: (ORAL)****Max. Marks: 20**

- |   |                    |                  |
|---|--------------------|------------------|
| - | Reading of a text  | <b>Marks: 05</b> |
| - | Dictation          | <b>Marks: 05</b> |
| - | Conversation       | <b>Marks: 05</b> |
| - | Oral Comprehension | <b>Marks: 05</b> |

**Prescribed Textbook:**

“CONNEXIONS-III” (Units 1-6) by Regine Merieux & Yves Loiseau, Published by Didier

**Recommended Book:**

**Nouveau Sans Frontières III** by Philippe Dominique & Jacky Girardet

**SEMESTER-V****URDU**

**URL-301: (MODERN URDU PROSE AND POETRY)**

**Time: 3 Hours**

**Max. Marks: 100**

**PROSE:**

Study of Urdu Prose with special reference to modern fiction:

General information which leads to vital changes in literary attitudes and different forms of prose which came up in Urdu in Munshi Prem Chand and Post Prem Chand period; Introductory information about latest forms of prose: Afsana, Novel, Inshaiya, Khutoot-nigari, Reportaz

Question on modern trends of prose writing like Tajreed Afsana, Inshaiya Nigari, Social Satire.

**SEMESTER-V****URDU****Poetry**

Study of Urdu poetry with special reference to the modern period

General information about the Modern period; the circumstances which lead to the vital changes in literary attitudes & different shades of Urdu poetry which came up in Urdu after Mirza Daagh Dehlvi; Questions on trends like Quami Shairi, Taraqqi Pasand Shairi & Jadeed Shairi

Introductory information about latest forms of poetry Ghazal, Aazad Ghazal, Paaband Nazm and Doha.

**Books Prescribed:**

Shaoor-e-Adab, published by Maktaba Jamia Ltd, New Delhi

**SEMESTER-V****PERSIAN****PRL-301:****PROSE AND POETRY****Time: 3 Hours****Max. Marks: 100****PROSE:**

Selections from Intkhab Adabiyat-e-Farsi by Syed Hasan, Arun Kumar Beni Madho, 2, Katra Road,  
Allabhabad – 211002

1. Akhlaq-e-Mohsini : Adab, Ulve Himmat, Sakhavat-o-Ahsan (Pages from 34 to 41)
2. Tarikh-e-Firoz Shahi (Pages from 17 to 23)

Selections from Nisab-e-Jadid-e-Farsi, Published by Jyed Press, Balli Maran, Delhi

1. Zindagi-e-Man (Bab Kodaki (Pages from 5 to 19)
2. Sarzameen-e-Hind Zaban-e-Farsi Dar Hind (Pages from 33 to 48)

**POETRY:**

Selections from Intkhab Adabiyat-e-Farsi: Published by Jyed Press, Balli Maran, Delhi.

1. Rubaiyat-e-Sarmad (Pages from 144 to 146)
2. Sho'orai Asar-e- Hazir

**SEMESTER-V**

**PERSIAN**

- A. Ai Ranj bar by Khanum Parveen Aitsami ( Page-164 )
- B. Jamhuri by Arif Qazwini ( Page-169)
- C. Libas-e-Watni by Sarmad Tehrani ( Page-170)
- D. Parda-e-Beenash by Rasheed Yasmee ( Page-175)

**Books Prescribed:**

1. Intkhab Adabiyat-e-Farsi by Syed Hasan and published by Ram Narain Lal Arun Kumar, 2-Katra Road, Allahabad- 211002
2. Nisab-e-Jadeed-e-Farsi, published by Jyed Press, Balli Maran, Delhi.

**SEMESTER-V**

**SANSKRIT (ELECTIVE)**

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2x7½ = 15
- III nl fol xZ l fu/k ea l s i k p ds l fu/k@l fu/k fopNn i Ns tk, a &  
2x5 = 10
- IV nl f.ktUr , oal Uur iR; ; ndj i k p ds : i i Ns tk, a &  
2x5 = 10
- V ofnd l kfgR; ea l snks iz u ndj , d dk l kekl; i fjp; i Nk tk, &  
1x10 = 10
- VI I kekl; Kku ea l s pkj fclnq ndj nks dks Li "V djus dks dgk tk; s &  
2x5 = 10
- VII 0; kogkfj d 'kCnkoyh ea l s 20 fglnh@væsth 'kCn ndj 10 dks l ðdr ea fy[kus dks dgk tk; s &  
10x1 = 10

**SEMESTER-V**

**FUNCTIONAL SANSKRIT (VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

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iZu i = fuekZk funZk

भाग क में 5 प्रश्न देकर 3 का उत्तर देने के लिए कहा जाये।

3X20 = 60

भाग ख में 7 प्रश्न देकर 4 का उत्तर देने के लिए कहा जाये।

4X10 = 40

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**SEMESTER-V**  
**ENGLISH COMPULSORY**

**Time: 3 Hours**

**Max. Marks: 50**

**Texts Prescribed:**

1. *All My Sons* by Arthur Miller
2. *Poems of Nature and Culture*, Guru Nanak Dev University, Amritsar

**Course Contents:**

1. The study of the whole text of the play, *All My Sons*
2. The study of the following poems from the prescribed book.

*Poems of Nature and Culture*

William Wordsworth:	“The World is Too Much with Us”
Gordon Lord Byron:	“She Walks in Beauty”
P.B. Shelly:	“Ozymandias”
Alfred Lord Tennyson:	“In Memoriam”
Robert Browning:	“Meeting at Night”
Mathew Arnold:	“Dover Beach”
W.B. Yeats:	“Words”
Wilfred Owen:	“Strange Meeting”
Robert Graves:	“The Portrait”
W.H. Auden:	“The Unknown Citizen”
Dylan Thomas:	“Do not Go Gentle into That Good Night”
Ted Hughes:	“The Thought-Fox”
Sylvia Plath:	“Mirror”
Seamus Heaney:	“Honeymoon Flight”
Rabindranath Tagore:	“False Religion”
Nissim Ezekiel:	“Night of Scorpion”

3. Formal letter and application writing, Resume Writing, Business Writing and Report writing

**Instructions for the Paper Setter and Distribution of Marks:**

**The question paper will consist of three sections and the distribution of marks will be as under:**

**Section A: 10 Marks**

**Section B: 24 Marks**

**Section C: 16 Marks**

**Section-A:**

- I. Six questions (three questions from the play *All My Sons* and three questions from *Poems of Nature and Culture*) requiring very short answers based on the reading of *All My Sons* and the prescribed poems shall be set. The examinees will be expected to answer any FIVE.  
(2x5=10 Marks)

**Section-B:**

- II. THREE questions requiring brief descriptive answers based on character, tone, plot and theme(s) in the play *All My Sons* will be set and examinees will be expected to attempt any TWO.  
(6x2= 12 Marks)
- III. THREE questions on the central idea, theme, tone or style etc. of the prescribed poems from the textbook, *Poems of Nature and Culture* will be set for the students to attempt any TWO of these questions.  
(6x2= 12 Marks)

**Section-C:**

- IV. ONE question requiring students to explain a stanza, with reference to context, will be set. The stanza for explanation will be taken from the poems prescribed in the syllabus.  
ONE essay-type question from the play *All My Sons* will be set.

**The students will be required to answer any of these two questions.**

**(1x8=8 Marks)**

- V. TWO questions with internal choice will be set on (a) formal letter/application writing (5 Marks) and (b) Resume Writing/Business Writing and Report Writing (3 Marks)

**(5+3=8 Marks)**

**SEMESTER-V**  
**ENGLISH (ELECTIVE)**  
**MODERN ENGLISH DRAMA**

**Time: 3 Hours**

**Max. Marks: 100**

**Texts Prescribed:**

1. *Merchant of Venice* by William Shakespeare
2. *Arms and the Man* by G.B. Shaw
3. *Background to the Study of English Literature* by B. Prasad, Macmillan India Limited  
(Chapters I and II from Section-I; Chapters I, II and III from Section-II; Chapters I, II and III from Section-III)

**Instructions for the Paper Setter and Distribution of Marks:**

The question paper will consist of three sections and distribution of marks will be as under:

Section A: 20 Marks

Section B: 48 Marks

Section C: 32 Marks

**Section-A**

**Note:** The examinees will be required to answer all the **ten** questions set as per the following scheme:

1. Three very short-answer questions (approximately 5 lines each) from *Merchant of Venice*
2. Three very short-answer questions (approximately 5 lines each) from *Arms and the Man*
3. Four very short-answer questions (approximately 5 lines each) from *Background to the Study of English Literature* by B. Prasad. (Chapters I and II from Section-I; Chapters I, II and III from Section-II; Chapters I, II and III from Section-III) The questions shall deal with simple definitions and examples of literary terms introduced in the book. (10 x 2=20 Marks)

### Section-B

**Note:** The examinees will be required to answer **EIGHT** questions set as per the following scheme:

1. The examinees will be required to answer **THREE** short-answer questions out of the **FOUR** questions set from the play, *Merchant of Venice*. Each answer should be written in about 10-15 sentences.
2. The examinees will be required to answer **THREE** short-answer questions out of the **FOUR** questions set from the play, *Arms and the Man*. Each answer should be written in about 10-15 sentences.
3. The examinees will be required to answer **TWO** short-answer questions out of the **FOUR** questions set from the prescribed book, *Background to the Study of English Literature*. (Chapters I and II from Section-I; Chapters I, II and III from Section-II; Chapters I, II and III from Section-III) Each answer should be written in about 10-15 sentences.

**Note:** Questions of both theoretical and practical nature requiring understanding of literary concepts and developments may be asked. At least two questions may be set on the analysis of passages/poems that clearly exhibit the use of literary devices discussed in the book.  
(8x6=48 Marks)

### Section-C

The examinees will be required to answer any **TWO** questions (each of 16 marks) out of the **THREE** questions set as per the following scheme:

1. One essay type question (3 to 4 pages) from *Merchant of Venice*
2. One essay type question (3 to 4 pages) from *Arms and the Man*
3. One essay type question (3 to 4 pages) on the structure/ development of a genre as discussed in the book, *Background to the Study of English Literature*. (Chapters I and II from Section-I; Chapters I, II and III from Section-II; Chapters I, II and III from Section-III) (2x16=32 Marks)

**SEMESTER-V**

**FUNCTIONAL ENGLISH (VOCATIONAL)  
PAPER-PRINT JOURNALISM  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setter and Distribution of Marks:**

**Theory:** 75 Marks

The question paper will consist of three sections and distribution of marks will be as under:

**Section-A:** 16 Marks

**Section-B:** 35 Marks

**Section-C:** 24 Marks

**Practical:** 25 Marks

**Section-A:** It will require students to write **EIGHT** (8) short notes of **2** marks each. The question will test student's awareness about various aspects of journalistic terms.

**(2x8=16 Marks)**

**Section-B:** It will have **SEVEN** (7) questions out of which students will attempt any **FIVE** (5). The questions will relate to specific issues given in Unit-I to VII. There will be at least three questions of practical nature. Each question will carry 7 marks.

**(7x5=35 Marks)**

**Section-C:** It will have **TWO** questions with internal choice, each of 12 marks. The questions will require students to demonstrate practical knowledge in writing various features for the print media.

**(2X12=24 Marks)**

**Objectives:**

To generate awareness among learners of issues deserving reporting in print and to simulate them to respond to their environment in print. To enable learners to write news stories from the stage of news gathering to editing to their final presentation. To enable learners to acquire the art and skills of feature writing.

**Course Contents:**

**UNIT-I: Introduction to Print Media**

- Print Media and Communication
- Definition of Communication
- Scope of Communication: Its purpose and forms

**UNIT-II: Reporting**

- Sources of Information
- Distinguishing Factual News Reporting from Interpretative and
- Analytical Reporting

**UNIT-III: Investigate Journalism**

- Writing the Questions
- Reporting from Interviews - Format, Style and Content

**UNIT-IV: Writing News Stories**

- Essentials of News Writing—the Headlines—the Leads—the Body and Conclusion—the Art and Skills of Writing for Different Purposes.

**UNIT-V: Areas in News Reporting**

- Reporting Obituaries, Weather, Sports, Science, Business, Art and Culture, Education, Agriculture, Fashion, Community Service etc.

**UNIT-VI: The Reader**

- Understanding the Reader

**UNIT-VII: Feature Writing**

- Defining a Feature ( a lyric in Prose)—the Crafts of Feature Writing—Distinguishing a Feature from other Forms of Newspaper/Magazine, Writing—Researching before Writing—Titles and Leads—Packaging a Feature with interest, Humour, Pictures and other Ingredients—Areas for Feature Writing (middles, reviews)—Freelancing and Feature Writing.

**SEMESTER-V**

**FUNCTIONAL ENGLISH (VOCATIONAL)  
PAPER-PRINT JOURNALISM**

**(PRACTICAL)**

There will be practical examination of 25 marks. An external examiner will conduct the examination by giving on the spot news/report writing test.

**Bibliography:**

- Ahuja, E.N. & S.S. Chhabra *Reporting*, Surjeet Publications, New Delhi, 1990.
- Drewry, John E *Book Reviews*, The Writer, Inc. Bosten, 1945
- Nicholis, Brian *Features with Flair*, Press Institute of India, New Delhi, 1972.
- Patterson, Helen M. *Writing and Selling Feature*, Articles, Prentice Hall, New York, 1950.
- Steigheiman, M. *Writing the Feature Article*, Macmillan, New York, 1950.
- Copestake, T. *Editing Super 8*, Focal Press Ltd., London, 1980.
- Critchfield, Richard P. *The Indian Reporters Guide*, Allied Pacific, Bombay, 1962.
- George, TJS *News Editing*, Indian Institute of Mass Communication, New Delhi, 1989.
- Tayler, Howard B and Jacob Scher *Copy Reading and News Editing*, Prentice Hall, New York, 1955.
- Warren, Carl H. *Modern News Reporting*, Harper, New York, 1973.

**SEMESTER-V**

**PUNJABI (COMPULSORY)**  
**ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

1. **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਹਾਣੀ (ਚੋਣਵੀਆਂ ਕਹਾਣੀਆਂ)**

ਲੇਖਕ	ਕਹਾਣੀ	ਕਹਾਣੀ-ਸੰਗ੍ਰਹਿ
ਅਜੀਤ ਕੌਰ	ਨਿਊ ਯੀਅਰ	ਮੌਤ ਅਲੀ ਬਾਬੇ ਦੀ
ਗੁਰਬਚਨ ਭੁੱਲਰ	ਥਕੇਵਾਂ	ਓਪਰਾ ਮਰਦ
ਮਨਮੋਹਨ ਬਾਵਾ	ਏਕਲਵਯ	ਨਰ ਬਲੀ
ਜਿੰਦਰ	ਸੌਰੀ	ਜਖਮ
ਸੁਖਜੀਤ	ਹਜ਼ਾਰ ਕਹਾਣੀਆਂ ਦਾ ਬਾਪ	ਮੈਂ ਇੰਜੁਆਏ ਕਰਦੀ ਹਾਂ
ਜਤਿੰਦਰ ਹਾਂਸ	ਰਾਹੂ ਕੇਤੂ	ਈਸ਼ਵਰ ਦਾ ਜਨਮ
ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼	ਅਰਜਨ ਛੇੜ ਗਡੀਰਨਾ	ਕੁਝ ਅਣਕਿਹਾ ਵੀ
ਚੰਦਨ ਨੇਗੀ	ਹਰਖ ਸੋਗ	ਹਰਖ ਸੋਗ
ਜਸਵਿੰਦਰ ਸਿੰਘ	ਖੂਹ ਖਾਤੇ	ਖੂਹ ਖਾਤੇ
ਗੁਰਦੇਵ ਸਿੰਘ ਰੁਪਾਣਾ	ਸ਼ੀਸ਼ਾ	ਸ਼ੀਸ਼ਾ ਅਤੇ ਹੋਰ ਕਹਾਣੀਆਂ

2. **ਨਾਵਲ: ਪੀਤੂ (ਡਾ. ਪਰਮਜੀਤ ਸਿੰਘ ਜਜ, ਚਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ)**

3. **ਲਗਪਗ 200 ਸ਼ਬਦਾਂ ਵਿਚ ਪੈਰਾ ਰਚਨਾ**

4. **ਸਰਲ ਅੰਗਰੇਜ਼ੀ ਪੈਰੇ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ**

5. **ਵਿਆਕਰਣ:**

(ੳ) ਧੁਨੀ ਵਿਉਂਤ

(ਅ) ਨਾਉ ਵਾਕੰਸ਼ : ਪਰਿਭਾਸ਼ਾ, ਬਣਤਰ ਤੇ ਪ੍ਰਕਾਰ

(ੲ) ਵਾਕਾਤਮਕ ਜੁਗਤਾਂ : ਮੇਲ ਤੇ ਅਧਿਕਾਰ

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

- |   |        |
|---|--------|
| 1. ਵਿਸ਼ਾ-ਵਸਤੂ /ਸਾਰ/ਪਾਤਰ ਚਿਤਰਨ/ਕਹਾਣੀ ਕਲਾ (ਦੋ ਵਿਚੋਂ ਇਕ)   | 10 ਅੰਕ |
| 2. ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ /ਪਾਤਰ ਚਿਤਰਨ (ਦੋ ਵਿਚੋਂ ਇਕ)   | 10 ਅੰਕ |
| 3. ਪੈਰਾ : ਤਿੰਨਾਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ ਉੱਤੇ   | 05 ਅੰਕ |
| 4. ਸਰਲ ਅੰਗਰੇਜ਼ੀ ਪੈਰੇ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ   | 05 ਅੰਕ |
| 5. ਨੰਬਰ 5 ਉੱਤੇ ਨਿਰਧਾਰਿਤ ਵਿਆਕਰਣ ਵਿਚੋਂ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ  | 10 ਅੰਕ |
| 6. ਉਪਰੋਕਤ ਲੜੀ ਨੰਬਰ 1 ਅਤੇ 2 ਦੀਆਂ ਪੁਸਤਕਾਂ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 5 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਦਾ ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ 5X2=10 ਅੰਕ |        |

**SEMESTER-V**

**PUNJABI (ELECTIVE)**  
**ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ: ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ: 100

1. ਪੰਜਾਬੀ ਕਾਵਿ ਸੰਗ੍ਰਹਿ (1700 ਈ. ਤੱਕ )  
(ਸੰਪਾ. ਡਾ. ਗੁਰਸ਼ਰਨ ਕੌਰ ਜੱਗੀ ਤੇ ਡਾ. ਮਾਨ ਸਿੰਘ ਢੀਡਸਾ),  
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਾਇਲਾ, 2007  
ਹਰੇਕ ਕਵੀ ਦੇ ਪਹਿਲੇ ਪੰਜ-ਪੰਜ ਸ਼ਬਦ/ਬੰਦ/ਸ਼ਲੋਕ/ਪਦੇ/ਕਾਫ਼ੀਆ 40 ਅੰਕ
2. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ  
ਜ਼ਿੰਦਗੀ ਦੀ ਰਾਸ਼, ਗੁਰਬਖਸ਼ ਸਿੰਘ ਪ੍ਰੀਤਲੜੀ  
(ਪਹਿਲੇ ਦਸ ਨਿਬੰਧ) 30 ਅੰਕ
3. ਪੰਜਾਬੀ ਨਾਟਕ:  
ਚੰਦਨ ਦੇ ਓਹਲੇ (ਪਾਲੀ ਭੁਪਿੰਦਰ) 30 ਅੰਕ

**ਯੂਨਿਟ ਅਤੇ ਥੀਮ**

1. ਪੰਜਾਬੀ ਕਾਵਿ ਸੰਗ੍ਰਹਿ (1700 ਈ. ਤੱਕ)  
(ੳ) ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ (ਚਾਰ ਵਿੱਚੋਂ ਦੋ) 20 ਅੰਕ  
(ਅ) ਕਿਸੇ ਇੱਕ ਕਵਿਤਾ ਦਾ ਵਿਸ਼ੈ ਵਸਤੂ / ਕਵੀ ਬਾਰੇ ਜਾਣਕਾਰੀ ਅਤੇ ਕਵੀ ਦਾ ਯੋਗਦਾਨ  
(ਦੋ ਵਿੱਚੋਂ ਇੱਕ) 10 ਅੰਕ  
(ੲ) ਮਲਟੀਪਲ ਚੋਣ ਪ੍ਰਸ਼ਨ (ਸੱਤ ਵਿੱਚੋਂ ਪੰਜ) 5x2=10 ਅੰਕ
2. ਕਿਸੇ ਇੱਕ ਨਿਬੰਧ ਸਾਰ, ਵਿਸ਼ਾ ਵਸਤੂ/ ਕਲਾਤਮਕ ਗੁਣ  
(ਦੋ ਵਿੱਚੋਂ ਇੱਕ) 20 ਅੰਕ
3. ਪੰਜਾਬੀ ਨਾਟਕ : ਚੰਦਨ ਦੇ ਓਹਲੇ (ਪਾਲੀ ਭੁਪਿੰਦਰ)  
ਨਾਟਕ ਦਾ ਵਿਸ਼ੈ ਵਸਤੂ/ਕਥਾਨਕ/ਪਾਤਰ/ਮੰਚ ਯੋਗਤਾ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) 20 ਅੰਕ
4. ਜ਼ਿੰਦਗੀ ਦੀ ਰਾਸ਼ ਅਤੇ ਚੰਦਨ ਦੇ ਓਹਲੇ ਵਿੱਚੋਂ ਪਾਠ ਆਧਾਰਿਤ  
ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ (ਛੇ ਵਿੱਚੋਂ ਚਾਰ) 4x5=20 ਅੰਕ

**SEMESTER-V**

**FUNCTIONAL PUNJABI**  
**ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ (ਫੰਕਸ਼ਨਲ)**

ਪ੍ਰਯੋਜਨ : ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਚ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ ਨਾਲ ਜਾਣ ਪਛਾਣ ਅਤੇ ਪੰਜਾਬੀ ਵਿਚ ਇਸ ਦੀ ਵਰਤੋਂ ।

ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ

ਕੁਲ ਅੰਕ : 100

(ਬਿਉਰੀ)

ਸਮਾਂ : 2 ਘੰਟੇ

ਅੰਕ : 50

- (ੳ) ਪੰਜਾਬੀ ਉਚਾਰਨ ਅਤੇ ਗੁਰਮੁਖੀ ਔਰਥੋਗ੍ਰਾਫੀ : ਪੰਜਾਬੀ ਧੁਨੀਆਂ ਅਤੇ ਗੁਰਮੁਖੀ ਦਾ ਸੰਬੰਧ (ਆਈ.ਪੀ.ਏ. ਦੀ ਮਦਦ ਨਾਲ) ਅੰਕ : 20
- (ਅ) ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ : ਪਰਿਭਾਸ਼ਾ, ਮਹੱਤਵ, ਭਾਸ਼ਾ ਅਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ, ਸਾਹਿਤ ਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ । ਅੰਕ : 15
- (ੲ) ਕੰਪਿਊਟਰ ਸੌਫਟਵੇਅਰ : ਕੰਪਿਊਟਰ ਓਪਰੇਟਰ ਸਿਸਟਮ - ਐਮ.ਐਸ.ਆਫਿਸ (4.3,6.0,7.0) ਪੇਜ ਮੇਕਰ ਆਦਿ । ਅੰਕ : 15

**SEMESTER-V**

**FUNCTIONAL PUNJABI**  
**ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ (ਫੰਕਸ਼ਨਲ)**

(ਪ੍ਰੈਕਟੀਕਲ)

**ਭਾਸ਼ਾ ਪ੍ਰਯੋਗਸ਼ਾਲਾ ਵਿਚ ਅਭਿਆਸ ਕਰਨਾ**

**ਸਮਾਂ : 2 ਘੰਟੇ**

**ਅੰਕ : 50**

- (ੳ) ਪੰਜਾਬੀ ਉਚਾਰਨ ਸੁਣ ਕੇ ਗੁਰਮੁਖੀ ਅੱਖਰਾਂ ਅਤੇ ਅੰਤਰ-ਰਾਸ਼ਟਰੀ ਧੁਨੀ ਲਿਪੀ ਵਿਚ ਲਿਖਣਾ (ਪੰਜ-ਪੰਜ ਮਿੰਟਾਂ ਦੇ ਚਾਲੀ ਅਭਿਆਸ)
- (ਅ) ਵਿਆਕਰਣਕ ਵਰਗਾਂ ਦੇ ਆਧਾਰ 'ਤੇ ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਦੇ ਰੂਪਾਂ ਦੀ ਪਹਿਚਾਣ ਕਰਨਾ ਅਤੇ ਰੂਪ ਸਿਰਜਣੇ (ਪੰਜ-ਪੰਜ ਮਿੰਟਾਂ ਦੇ ਚਾਲੀ ਅਭਿਆਸ)
- (ੲ) ਥਿਊਰੀ ਵਿਚ ਦਿੱਤੇ ਗਏ ਵਿਸ਼ਿਆਂ ਉੱਤੇ ਘਟੋ-ਘਟ 35 ਵਾਕਾਂ ਵਾਲੇ ਭਾਸ਼ਣ ਦੇਣ ਦਾ ਅਭਿਆਸ (ਚਾਲੀ ਅਭਿਆਸ)

**SEMESTER-V**

**ਮੁਢਲੀ ਪੰਜਾਬੀ**  
**(ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ ਤੇ ਸੱਭਿਆਚਾਰ)**  
**(In Lieu of Punjabi Compulsory)**

**Time: 3 Hrs.**

**Marks: 50**

**ਅੰਕਾਂ ਦੀ ਵੰਡ:-**

**ਭਾਗ ਓ:-** ਇਸ ਭਾਗ ਵਿੱਚ 15 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਵਲੋਂ ਕਿਸੇ 10 ਦੇ ਉੱਤਰ 30-40 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 2 ਅੰਕ ਹੋਣਗੇ।

**ਭਾਗ ਅ:-** ਇਸ ਭਾਗ ਵਿੱਚ 6 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਵਲੋਂ ਕਿਸੇ 3 ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ 400-500 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 10 ਅੰਕ ਹਨ।

1. **ਸਿੱਖ ਪੰਥ ਵਿੱਚ ਪਰਿਵਰਤਨ:-** ਗੁਰੂ ਹਰਗੋਬਿੰਦ ਸਾਹਿਬ ਤੋਂ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਸਾਹਿਬ ਤੱਕ (1606-1675) ਮੀਰੀ-ਪੀਰੀ, ਇਸ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਤੇ ਪ੍ਰਭਾਵ, ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਜੀ ਦਾ ਜੀਵਨ ਅਤੇ ਯੋਗਦਾਨ, ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਸਾਹਿਬ ਦੀ ਸ਼ਹਾਦਤ।
2. **ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਤੇ ਖਾਲਸਾ ਪੰਥ ਦਾ ਨਿਰਮਾਣ:-** ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ (1675-1708), ਆਰੰਭਿਕ ਜੀਵਨ, ਖਾਲਸਾ ਪੰਥ ਦੀ ਸਾਜਨਾ (1699), ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ ਦੀ ਸ਼ਖਸੀਅਤ।
3. **ਪੰਜਾਬ ਦਾ ਸਮਾਜਿਕ ਤੇ ਸੱਭਿਆਚਾਰਕ ਜੀਵਨ:-** ਮੇਲੇ ਅਤੇ ਤਿਉਹਾਰ, ਲੋਕ ਗੀਤ, ਲੋਕ ਨਾਚ, ਪੰਜਾਬ ਦੇ ਪ੍ਰਸਿੱਧ ਲੋਕ ਕਿੱਸੇ: ਪੂਰਨ ਭਗਤ, ਹੀਰ ਰਾਂਝਾ, ਸੋਹਣੀ ਮਹੀਵਾਲ

**ਸਬੰਧਿਤ ਪੁਸਤਕਾਂ:-**

1. ‘ਪੰਜਾਬ ਦਾ ਲੋਕ ਵਿਰਸਾ’, ਕਰਨੈਲ ਸਿਮਘ ਬਿੰਦ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਉਰੋ ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ।
2. ‘ਪੰਜਾਬ ਦਾ ਵਿਰਸਾ’, ਪ੍ਰਿਥੀਪਾਲ ਸਿੰਘ ਕਪੂਰ, ਨਿਉ ਬੁੱਕ ਕੰਪਨੀ ਜਲੰਧਰ।
3. ‘ਪੰਜਾਬ’ (ਇਤਿਹਾਸ; ਕਲਾ ਸਾਹਿਤ ਤੇ ਸੱਭਿਆਚਾਰ ਆਦਿ) ਮੁੱਖ ਸੰਪਾਦਕ ਮਹਿੰਦਰ ਸਿੰਘ ਰੰਧਾਵਾ, ਭਾਸ਼ਾ ਵਿਭਾਗ ਪੰਜਾਬ ਪਟਿਆਲਾ।
4. ‘ਸ਼ਿਰੋਮਣੀ ਸਿੱਖ ਇਤਿਹਾਸ’ 1469-1708 ਡਾ. ਸੁਖਦਿਆਲ ਸਿੰਘ, ਸੰਗਮ ਪਬਲੀਕੇਸ਼ਨ, ਸਮਾਣਾ।
5. ‘ਸੰਖੇਪ ਜੀਵਨ ਦਸ ਗੁਰੂ ਸਾਹਿਬਾਨ’, ਗਿਆਨੀ ਜਗਤਾਰ ਸਿੰਘ ਰਾਏ ਮੋਰਾਵਾਲੀ, ਆਜਾਦ ਬੁੱਕ ਡੀਪੂ, ਹਾਲ ਬਜਾਰ, ਅੰਮ੍ਰਿਤਸਰ।
6. ‘ਸਿੱਖ ਇਤਿਹਾਸ’ (1469-1765), ਪ੍ਰਿੰਸੀਪਲ ਤੇਜਾ ਸਿੰਘ, ਡਾ. ਗੰਡਾ ਸਿੰਘ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਉਰੋ ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ।
7. ‘ਸਿੱਖ ਇਤਿਹਾਸ’ ਭਾਗ ਪਹਿਲਾ, ਖੁਸ਼ਵੰਤ ਸਿੰਘ ਅਨੁਵਾਦਕ ਡਾ. ਗੁਰਦਰਸ਼ਨ ਸਿੰਘ ਔਲਖ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ ਲੁਧਿਆਣਾ।
8. ‘ਪੰਜਾਬ ਦਾ ਵਿਰਸਾ’ (ਪੰਜਾਬ ਦੇ ਸਭਿਆਚਾਰ ਦਾ ਵਿਕਾਸ) ਪ੍ਰਿਥੀਪਾਲ ਸਿੰਘ ਕਪੂਰ, ਨਿਉ ਬੁੱਕ ਕੰਪਨੀ ਜਲੰਧਰ।
9. ‘ਸਿੱਖ ਹਿਸਟਰੀ’ 1469-1988 ਖੁਸ਼ਵੰਤ ਸਿੰਘ, ਨਵਯੁੱਗ ਪਬਲਿਸ਼ਰਜ ਨਵੀਂ ਦਿੱਲੀ।
10. ‘ਸਾਡਾ ਇਤਿਹਾਸਭਾਗ ਪਹਿਲਾ’ (1469-1708) ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ: ਸਤਿਬੀਰ ਸਿੰਘ, ਨਿਉ ਬੁੱਕ ਕੰਪਨੀ ਜਲੰਧਰ।
11. ‘ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ’ (1469-1799) ਸ਼ਿਵ ਗਜਰਾਨੀ, ਮਦਨ ਪਬਲਿਸ਼ਰਜ ਪਟਿਆਲਾ।

**SEMESTER-V**

**HINDI (ELECTIVE)**

fof'k"V dfo ,oa dk0; fl ) kr] dkedkth fglnh rFkk jhfrdky

I e; &3 ?k.Vs

i w kkzd% 100

ukV% ; g i z u&i = rhu Hkkxka ea foHkDr gksxA

[k.M&, d

इस भाग में बीस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 20 हैं।

[k.M&nks

इस भाग में 12 प्रश्न पूछे जाएंगे जिन में से 8 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 48 हैं।

[k.M&rhu

इस भाग में 4 प्रश्न पूछे जाएंगे। जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। इन प्रश्नों का उत्तर 5 पृष्ठों का होगा। कुल अंक 32 हैं।

fu/kkfr i kB; Øe

fu/kkfr i rd% jf' ejFkh %jke/kkjh fl g fnudj½

1. dk0; fl ) kr% काव्य की परिभाषा, तत्त्व, प्रकार
2. nI NUn% वसंततिलका, भुजंगप्रयात, वंशरथ, मालिनी, इन्द्रवज्रा, दोहा, चौपाई, कवित्त, सोरठा, गीतिका।
3. कामकाजी हिन्दी के प्रमुख कार्य: प्रारूपण, संक्षेपण, टिप्पण: परिभाषा एवं विधि विशेष पदनाम शब्दावली (संलग्न) तथा प्रचलित समास (केवल व्यावहारिक पक्ष)
4. jhfrdky% नामकरण, परिस्थितियां, विशेषताएं एवं काव्यधाराओं का केवल संक्षिप्त परिचय।

fo"k; kupny vad foHkktu

1. प्रथम खंड में छंद, पदनाम शब्दावली तथा समास से प्रश्न होंगे।
2. दूसरे खण्ड में चार प्रश्न सप्रसंग व्याख्याओं के होंगे जिनमें से दो करनी अनिवार्य हैं और दो प्रश्न पाठ्यक्रम में निर्धारित पुस्तक, दो काव्य सिद्धांत, दो छन्द और दो कामकाजी हिन्दी से होंगे। प्रत्येक में से एक-एक प्रश्न का उत्तर अनिवार्य है। कुल आठ प्रश्न करने हैं।
3. तीसरे खण्ड में दो प्रश्न पाठ्यपुस्तक से और दो प्रश्न रीतिकाल से पूछे जाएंगे। जिनमें से एक-एक प्रश्न का उत्तर देना अनिवार्य होगा।

वर्तमान में निम्नलिखित पदों पर रिक्तियाँ हैं

1. Auditor	लेखा परीक्षक
2. Acting Principal	कार्यवाहक प्राचार्य
3. Administrator	प्रशासक
4. Associate Professor	सह आचार्य
5. Air Hostess	विमान परिचारिका
6. Attendant	परिचर
7. Administrator General	महाप्रशासक
8. Attorney General	महान्यायवादी
9. Advocate General	महाधिवक्ता
10. Auditor General	महालेखापरीक्षक
11. Assistant Commissioner of Police	सहायक पुलिस आयुक्त
12. Chairman	अध्यक्ष
13. Chancellor	कुलाधिपति
14. Vice – Chancellor	कुलपति
15. Commissioner	आयुक्त
16. Controller	नियन्त्रक
17. Commissioner of Police	पुलिस आयुक्त
18. Deputy Commissioner	उपायुक्त
19. Director	निदेशक
20. Education Officer	शिक्षा अधिकारी
21. Evaluation Officer	मूल्यांकन अधिकारी
22. Executive Engineer	कार्यकारी अभियन्ता
23. Editor in Chief	प्रमुख संपादक
24. Forest Officer	वन अधिकारी
25. General Manager	महाप्रबंधक
26. Honorary Adviser	मानद सलाहकार
27. Inspector General	महानिरीक्षक
28. Secretary	सचिव
29. Joint Secretary	संयुक्त सचिव
30. Lecturer	प्राध्यापक
31. Public Relation Officer	जन संपर्क अधिकारी
32. Proctor	कुलानुशासक
33. Professor	आचार्य
34. President's Estate Officer	राष्ट्रपति संपदा अधिकारी
35. Principal Secretary	प्रधान सचिव
36. Registrar	कुलसचिव
37. Surveyor	सर्वेक्षक
38. Superintendent	अधीक्षक
39. Supervisor	पर्यवेक्षक
40. Sales – Incharge	बिक्री प्रभारी
41. Senior Assistant	वरिष्ठ सहायक
42. Senior Deputy General	वरिष्ठ उप महाप्रबंधक
43. Patent Officer	एकस्व अधिकारी
44. Commissioner For Food and Supply	खाद्य एवं आपूर्ति आयुक्त
45. Commissioner for Department Enquiry	विभागीय जांच आयुक्त
46. Additional Station Director	अपर केन्द्र निदेशक
47. Chief Justice	प्रमुख न्यायवादी
48. Pro Vice Chancellor	प्रतिकुलपति
49. Field Assistant	क्षेत्रीय सहायक
50. Medical Officer	चिकित्सा अधिकारी

**SEMESTER-V**

**FUNCTIONAL HINDI (VOCATIONAL)**  
(QD'kuy fglnh)

I ekpkj] I ekpkj i = , oa dgkuh vks] mi U; kl dh I eh{kk

I e; % 2<sup>1@2</sup> ?k/s

i wkkkd % 60

- क) यह प्रश्न पत्र तीन भागों में बंटा हुआ है। पहले भाग में से दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न 1 अंक का है। कुल अंक 10 हैं।
- ख) इस भाग में से 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर दो पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।
- ग) इस भाग में चार प्रश्न पूछे जाएंगे जिन में से 2 प्रश्नों का उत्तर देना होगा। इन प्रश्नों का उत्तर 3-4 पृष्ठों तक सीमित होगा। प्रत्येक प्रश्न के 7 अंक हैं। कुल अंक 14 हैं।

fu/kkfjr i kB; Øe

d½ I ekpkj vks] I ekpkj i =

- समाचार : अर्थ और परिभाषा
- समाचार : तत्व और प्रकार
- समाचार : लेखन प्रक्रिया
  - कवरेज
  - प्रेस रिपोर्ट तैयार करना
  - सम्पादन
  - भाषा शैली
  - शीर्षक लेखन
  - सम्पादकीय लेखन
- समाचार पत्रों की पृष्ठ-सरचना/पृष्ठ:सज्जा
- पंजाब के मुख्य समाचार पत्र : परिचय और इतिहास

[k½ i d foKflr

- प्रेस विज्ञप्ति : परिचय अवधारणा : स्वरूप और क्षेत्र
- प्रेस विज्ञप्ति : भाषा शैली

x½ i Q jhfMax

?k½ dgkuh] mi U; kl vks] , dkadh % vFkz i fj Hkk"kk] rRo vks] i xkj

va d foHkktu

- प्रथम खंड में 'क' में से प्रश्न पूछे जाएंगे। 1×10=10
- द्वितीय खंड में भाग 'क', 'ख', 'ग' में से प्रश्न पूछे जाएंगे। 5×6=30
- तृतीय खंड में भाग 'घ' में से प्रश्न पूछे जाएंगे। 2×10=20

**SEMESTER-V**

**FUNCTIONAL HINDI (VOCATIONAL)**  
(QD'kuy fglnh)

i z; ksx vksj ekf[kdh

i wkktd % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z; ksx ds fo'k; %

- समाचार लेखन : भीर्शक, प्रथम पृष्ठ, चित्र, सम्पादकीय पृष्ठ-लेखन का अभ्यास
- प्रेस नोट तैयार करने का अभ्यास
- विद्यार्थियों को हिन्दी समाचार कार्यालयों/प्रेस में लेकर जाना
- – सैमीनार और समूहवार बहस

**SEMESTER-V**

**HINDI PATRAKARITA (VOCATIONAL)**

**हिन्दी पत्रकारिता (वोकेशनल)  
फोटो पत्रकारिता और दूरदर्शन**

**समय: 3 घण्टे**

**पूर्णांक 60**

- क) यह प्रश्न पत्र तीन भागों में बंटा हुआ है। पहले भाग में से दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न 1 अंक का है। कुल अंक 10 हैं।
- ख) इस भाग में से 10 प्रश्न पूछे जाएंगे। जिनमें से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर दो पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न 6 अंक का है। कुल अंक 30 हैं।
- ग) इस भाग में से चार प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना होगा। इन प्रश्नों का उत्तर 3-4 पृष्ठों तक सीमित होगा। प्रत्येक प्रश्न के 10 अंक हैं। कुल अंक 20 हैं।

**निर्धारित पाठ्यक्रम:**

- क) फोटो पत्रकारिता : लेखन के सिद्धांत / विशेषताएँ
- ख) फोटो पत्रकारिता -
- फोटो पत्रकारिता : आरम्भ
  - फोटो पत्रकारिता : अर्थ, परिभाषा और महत्त्व
  - फोटो पत्रकारिता : विशेषताएँ
  - फोटो पत्रकारिता : फोटोग्राफी के लिए आवश्यक उपकरण
  - फोटो पत्रकारिता : कैमरा उपकरण और उसके रख-रखाव के निर्देश
  - फोटो पत्रकारिता : छायांकन कला के प्रमुख बिन्दु
  - फोटो पत्रकारिता : पत्र - पत्रिकाओं के लिए चित्रों का चयन और संपादन कला
  - फोटो पत्रकारिता : चित्र-प्रेषण के प्रकार
- ग) दूरदर्शन
- दूरदर्शन : अर्थ और परिभाषा
  - दूरदर्शन : स्वरूप और महत्त्व
  - दूरदर्शन : सम्पादन कला
  - दूरदर्शन : संवाददाता के गुण
  - दूरदर्शन : हिन्दी समाचार की विशेषताएँ
  - दूरदर्शन के हिन्दी कार्यक्रमों का वर्गीकरण : बालवर्ग, युवावर्ग, वरिष्ठवर्ग
- घ) दूरदर्शन समाचार बुलेटिन के स्मरणीय तथ्य

**अंक-विभाजन**

- प्रथम खंड में भाग 'क' और 'घ' में से प्रश्न पूछे जाएंगे।  $1 \times 10 = 10$
- द्वितीय खंड में भाग 'क' और 'ख तथा 'ग' में से प्रश्न पूछे जाएंगे।  $5 \times 6 = 30$
- तृतीय खंड में भाग 'ख' तथा 'ग' में से प्रश्न पूछे जाएंगे।  $2 \times 10 = 20$

**SEMESTER-V**

**HINDI PATRAKARITA (VOCATIONAL)**

हिन्दी पत्रिकारिता

प्रयोग और मौखिकी

पूर्णांक : 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग - पुस्तिका तैयार करनी होगी जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा
- नियमों के अनुसार की जाएंगी ।

विषय - फोटोग्राफी के विभिन्न उपकरणों की जानकारी देना ।

पत्र-पत्रिकाओं से विभिन्न चित्रों का चयन और संकलन करना ।

कैमरे की प्रचलित किस्मों के बारे में जानकारी दें ।

कैमरे के अवयव किस प्रकार कार्य करते हैं इसकी जानकारी देना ।

दूरदर्शन के हिन्दी चैनलों का विषयानुसार वर्गीकरण ।

**SEMESTER-V**

**PHYSICAL EDUCATION**

**Time: 3 Hours.**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Note:- Question paper will be divided into three sections.**

**Section-A:** The candidates are required to attempt all the six questions. Each question carrying two marks. **6x2=12 Marks**

**Section-B:** The candidates are required to attempt seven out of twelve questions. Each question carrying four marks. **7x4=28 Marks**

**Section-C:** The candidates are required to attempt two out of four questions. Each question carrying ten marks. **10x2=20 Marks**

**Part-A**

1. Recreation: Meaning and Importance of Recreation.
2. Aims and objectives of recreation.
3. Intramural and Extramural Sports Competitions and their Importance.
4. Muscular contraction: Ecentric, Concentric, Motor unit, Isotonic, Isometric, Isokinetic Exercises.
5. Laws of motion, Lever and its types, Equilibrium, Its types and Laws, Centre of Gravity, Force and its types.

**Part-B**

1. Posture: Meaning and Types of postures.
2. Postural-Deformities: Spinal Foot and Knock-Knees, Their Causes and Corrective Exercises.
3. Meaning and Aims of Sports Training.
4. Normal Load, Creast Load, Over Load.
5. Meaning and Importance of Warming up and Cooling down in sports.

**SEMESTER-V**

**PHYSICAL EDUCATION**

**(PRACTICAL)**

**Marks: 40**

Division of Marks: Athletics (12) + Games (12) + Ground Markings (3+3),  
Practical Note Book (5), Viva-Voce (5)

- Athletics Performance ----- 800M, Triple Jump for Boy  
800M, Triple Jump for Girls
- Games (Boys & Girls) ----- Fundamentals, Rules, Performance  
Basketball, Judo

**Books Recommended:**

1. Singh Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi 2000.
2. Tandon D.K. et.al,: Scientific Basis of Physical Education and Sports, Friends Publication New Delhi, 2001.
3. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang G.S.,: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University Patiala 2000.
5. Kang G.S. and Deol, N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.

# SYLLABUS

FOR

## B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)

(Semester–VI)

Examinations: 2018–19



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# GURU NANAK DEV UNIVERSITY AMRITSAR

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29.	Clinical Nutrition and Dietetics (Vocational)	67-69
30.	Fashion Designing and Garments Construction (Vocational)	70-71
31.	Early Childhood Care and Education (Vocational)	72-73
32.	Food Science and Quality Control (Vocational)	74-75
	<b>FACULTY OF VISUAL ARTS &amp; PERFORMING ARTS</b>	
33.	Fine Arts	76-78
34.	History of Art	79-80
35.	Gemology and Jewellery Design (Vocational)	81-82
36.	Still Photography and Audio Production (Vocational)	83-85
37.	Applied Arts	86-87
38.	Sculpture	88-90
39.	Music (Vocal)	91-92
40.	Music (Instrumental)	93-94
41.	Indian Classical Dance	95-96
42.	Tabla	97-98

	<b>FACULTY OF ENGINEERING &amp; TECHNOLOGY</b>	
43.	Computer Science	99-101
44.	Information Technology (Vocational)	102-103
45.	Computer Maintenance (Vocational)	104
46.	Computer Applications (Vocational)	105-107
47.	Information Technology Specilization Software Development (Vocational)	108-109
48.	Automobile Maintenance (Vocational)	110-111
49.	Refrigeration & Air Conditioning (Vocational)	112-114
	<b>FACULTY OF HUMANITIES &amp; RELIGIOUS STUDIES</b>	
50.	Religious Studies (ਧਰਮ ਅਧਿਐਨ)	115-116
51.	Philosophy	117-121
	<b>FACULTY OF LIFE SCIENCES</b>	
52.	Zoology	122-140
53.	Botany	141-144
54.	Microbiology	145-146
55.	Industrial Microbiology (Vocational)	147-148
56.	Microbial & Food Technology	149-150
57.	Bioinformatics (Vocational)	151-152
58.	Biotechnology (Vocational)	153-156
	<b>FACULTY OF EDUCATION</b>	
59.	Education	157-158
60.	Human Rights	159-160

	<b>FACULTY OF AGRICULTURE &amp; FORESTRY</b>	
61.	Dairy Farming (Vocational)	161-162
	<b>FACULTY OF LANGUAGES</b>	
62.	Russian	163-164
63.	French	165-166
64.	Urdu	167-168
65.	Persian	169-170
66.	Sanskrit (Elective)	171-172
67.	Functional Sanskrit (Vocational)	173
68.	English (Compulsory)	174
69.	English (Elective)	175-176
70.	Functional English (Vocational)	177-179
71.	Punjabi (Compulsory) (ਪੰਜਾਬੀ ਲਾਜ਼ਮੀ)	180
72.	Punjabi (Elective) (ਪੰਜਾਬੀ ਇਲੈਕਟਿਵ)	181
73.	Functional Punjabi (ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ ) (Vocational)	182
74.	ਮੁੱਢਲੀ ਪੰਜਾਬੀ (in lieu of Punjabi Compulsory)	183-184
75.	Hindi (Elective)	185-186
76.	Functional Hindi (Vocational)	188-189
77.	Hindi Patrakarita (Vocational)	190-194
	<b>FACULTY OF PHYSICAL EDUCATION</b>	
78.	Physical Education	195-196

**SEMESTER–VI**

**POLITICAL SCIENCE  
INTERNATIONAL POLITICS: THEORY AND PRACTICE**

**Time: 3 Hours**

**Max Marks: 100**

**Instructions for the Paper Setter:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**Unit–I**

1. Meaning, Nature and Scope of International Politics.
2. Realist and Idealist Approaches to International Politics.

**Unit–II**

1. National Power: Its Elements
2. System of Balance of Power and Collective Security

**Unit–III**

1. Cold War and Post Cold War era of International Politics.
2. Emerging World Order and Multipolarity
3. Terrorism in global context: Its emergence and consequences

**Unit–IV**

1. Regional Organisations: SAARC and EU.
2. UNO: Principles, aims, objectives and its work.
3. New International Economic Order (NIEO).

**Recommended Books:**

1. Joshua S. Goldstein, *International Relations*, New Delhi, Pearson Education, 2006.
2. John Baylis and Steve Smith, *Globalization of World Politics*, New Delhi, Oxford University Press, 2005.
3. V.K. Malhotra, *International Relations*, New Delhi, Anmol Publishers Private Ltd., 2004.
4. R.P. Barston, *Modern Diplomacy*, New Delhi, Pearsons, 2006.

5. John Allphin Moore, Jr. and Jerry Pubantz, *The New United Nations, International Organization in the Twenty First Century*, New Delhi, Pearsons, 2008
6. J.C. Johari, *International Relations and Politics*, Sterling, 2012
7. V. K. Malhotr, *International Relations*, Anmol 2012
8. John Baylis and Sreve Smith, *The Globalizations of World Politics*, Oxford, 2005
9. Pen Ghosh, *International Relations*, PHI 2009
10. Scot. P. Handler, *International Politics*, Sage, 2013
11. Palmer Pertains, *International Relations*, AIIBS, 2005
12. H.J. Morgenthaou , *Politics Among Nations*, Kalyani,2004
13. Kanth Bajpai & Siddharth Mallavarapn, *International Relations in India : Bringing theory Back Home*, Orient longman, 2005
14. Leter Calvocoressis, *World Politics (1945-2000)*, Pearson, 2006

**SEMESTER–VI**  
**HISTORY**  
**HISTORY OF THE PUNJAB (1799–1966)**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: The question paper will consist of two Sections as follows:-**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

1. **The Establishment and Expansion of Ranjit Singh's Kingdom :** Political condition of the Punjab in the 1790s; Conquests of the Sikh principalities; Subjugation of the Satlej–Jamuna Divide and British intervention; Subjugation of the hill principalities; annexation of Afghan dependencies; Policy towards the defeated rulers; Extent of the kingdom in 1839.
2. **Administrative Organization of the Kingdom of Lahore:** Central, Provincial and local administration; Land revenue system. Jagirdari system, Dharmarth grants; Judicial administration; Military organization; state policy towards agriculture, Manufacture and trade.

**UNIT–II**

3. **Annexation and After:** First Anglo-Sikh War; Second Anglo-Sikh War; British administration 1845-1856; Agricultural development.
4. **Socio-Religious Reform Movements in the late– Nineteenth Century:** Christian evangelicals; the Arya Samaj; The Nirankaris and the Namdharis; the Singh Sabhas and the Ahmadiyahs.

**UNIT–III**

5. Early Nationalist Activity, Indian National Congress; Swadeshi Movement and Boycott; The Ghadar movement; Rowlatt Satyagrahs and the Jallianwala Bagh; Non-Cooperation Movement; Hindustan Socialist Republican Army and Naujawan Bharat Sabha; Civil Disobedience and Quit India Movement.
6. **Gurdwara Reforms and the Akalis :** Causes of the movement for reform; Central Sikh League; SGPC and the Shiromani Akali Dal ; Major Morchas ; Gurdwara legislation.

**UNIT–IV**

7. **Towards Partition:** Communal politics; Sikander–Jinnah Pact; Lahore Resolution of the Muslims League; The elections of 1945-46; Cabinet Mission Plan Mountbatten Plan and Partition.
8. **The Punjab after Independence:** Reorganisation and rehabilitation: Demand for Punjabi speaking state; The reorganisation Act of 1966.

**Suggested Reading**

- Grewal, J.S., *The Sikhs of the Punjab*, CUP, Cambridge, 1990.  
Kirpal Singh, *Partition of Punjab*, Punjabi University, Patiala, 1972.  
Khushwant Singh, *A History of the Sikhs*, Vol. I & II Oxford Publication, 2004.  
Kushwant Singh, *Ranjit Singh: Maharaja of the Punjab*, Chatar Singh Jeewan Singh Publication, Amritsar, 2012

**SEMESTER–VI**  
**JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)**

**PUBLIC RELATIONS**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section–A** shall consists of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks.

**10x2=20**

**Section–B** shall consists of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks.

**8x5=40**

**Section-C** shall consists of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks.

**10x2=20**

PR-Definition, Concept and Role, Qualities of a PR person, Publics, PR in public & private sector  
Difference between PR & Advertising, Various PR Organisations, Organising a Press, Conference,  
Various tools of PR, Writing Press, Releases and reports, Need for PR; Objectives, Code of Ethics  
Crisis management  
Public Relations Society of India  
Event Management

**(PRACTICAL)**

**(20 Marks)**

1. PR report of an organisation/industry etc. organise an event of the institution
2. Preparing the PR report of an organization.
3. Organizing an event of institution.

**SEMESTER–VI**

**MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)  
VIDEO ELECTRONIC FILM PRODUCTION**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section–A** shall consists of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks.

**10x2=20**

**Section–B** shall consists of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks.

**8x5=40**

**Section–C** shall consists of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks.

**10x2=20**

Question paper will be set in English only but the medium of examination will be English, Punjabi and Hindi.

**Videoediting**

- Meaning
- Need
- Types (Online, Offline, Linear & Non-linear)
- Transitional Devices (Cut, Fade, Dissolve, Mix, Superimposition, Wipe & Montage)

**Special Effects**

- Audio Special Effects
- Video Special Effects
- Recording Special Effects

**Narration**

- Meaning and Role
- Writing & Recording Narration

**Sound Mixing & Editing**

- Basics
- Dubbing
- Studio Mixing
- Laying Tracks
- Pre & Post Production Mixing

**Studio & Location Sound Media Appreciation**

- Film Review
- Film Criticism
- Film Journalism
- Film distribution & Marketing

**PRACTICAL****Practical Marks: 20**

Making a minimum of five minute programme (any format) Reading a programme/films.

**Recommended Books**

1. Writing Scripts for TV Radio and Films: Wills, Edgar-Chicago, Holt and Rinehart, 1981 Lyver and Svainson.
2. Basics of Video Production: Des, Lyver and Svainson, Graham-Focal Press.

**Television Production: Gerald Millerson-Focal Press, 1999.****Note: Practicals to be conducted by external examiner.**

**SEMESTER–VI**  
**SOCIOLOGY**

**SOCIAL RESEARCH AND SCIENTIFIC METHODS**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

- a) **Social Research:** Meaning and Functions.
- b) **Scientific Methods:** Nature, Steps and Types-Quantitative and Qualitative.

**UNIT–II**

- a) **Design of Social Research:** Meaning and Types: Exploratory, Descriptive, Experimental.
- b) Sampling and its types.

**UNIT–III**

- a) **Methods and Techniques of Data Collection:** Observation, Questionnaire, Interview Schedule and Case Study

**UNIT–IV**

- a) **Data Analysis:** Coding and Tabulation and Report Writing.

**Books Recommended:**

1. Bajpai, S.R.: *Methods of Social Survey & Research*, Kitab Ghar, Kanpur, 1976.
2. Goode, and Hatt: *Methods in Social Research*, McGraw Hill, Tokyo, 1952.
3. Ghosh, B.N.: *Scientific Method & Social Research*, Sterling Publications, New Delhi, 1985.
4. Jaspal Singh: *Introduction to Methods of Social Research*, Sterling, New Delhi, 1990.
5. Jayaram, N.: *Research Methodology: Methods and Techniques*, MacMillian, Madras, 1989.
6. Kalton, Graham: *Introduction to Survey Sampling*, Sage, New Delhi, 1983.
7. Kapila, S.: *Methods of Social Research*, New Academic Publishing Co., Mai Hiran Gate, Jalandhar, 1991.
8. Cargen, Leonard. 2008, *Doing Social Research*. Jaipur: Rawat.
9. Singh, Jaspal. 2011, *Instruments of Social Research*. Jaipur: Rawat.
10. Bhandarkar, P.L and T.S Wilkinson. 2010, *Methodology and Techniques of Social Research*. Delhi: Himalaya Publishing House.
11. May, Tim. 2009, *Social Research: Issues, Methods and Process*. Jaipur: Rawat.

**SEMESTER–VI****PSYCHOLOGY****ABNORMAL PSYCHOLOGY–II (THEORY)****Time: 3 Hours****Pass Marks: 35% of the subject  
(Theory and Practical Separately)****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section–A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 1½ marks; total weightage of the section being 15 marks.

**Section–B:** It will consist of short answer type questions with answers to each question up to two pages in length. Six questions will be set by the examiner and four will be attempted by the candidates. Each question will carry 9 marks: total weightage of the section being 36 marks.

**Section–C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 12 marks, total weightage of the section being 24 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Note:**

- 1 The use of Non-Programmable calculators and Statistical Tables are allowed in the examination.
- 2 Only one numerical question is to be set either of nine marks (from Section-B) or of twelve marks (from Section-C).

(The questions are to be set to judge the candidates basic understanding to the concepts).

**Anxiety Based Disorders:** Symptoms, Etiology and Treatment of Obsessive Compulsive Disorder, Generalized Anxiety Disorder & Phobias. Classification of Somatoform Disorders–Symptoms & Etiology (Conversion Disorder). Dissociative disorders–Types, Symptoms & Etiology.

**Personality Disorders:** Clinical Features, Types and causal factors in Personality Disorders (Paranoid, Schizoid, Schizotypal, Histrionic, Narcissistic, Antisocial, Boderline, Avoidant, Dependent, Obsessive- Compulsive, Passive Aggressive, Self-Defeating & Sadistic.

**Antisocial Personality & Delinquency:** Clinical Picture, Characteristics, Causes, Treatment & Outcomes.

**Mood Disorders:** Types & Symptoms, Causes and treatment.

**Schizophrenia:** Symptoms, Causes Types and Treatment.

**Therapies:** Psychodynamic, Behavioural, Cognitive-Behaviour Therapy (Rational Emotive) & Humanistic therapy.

**Statistics:** Introduction to the concept of Hypothesis, One-tailed and two-tailed tests, Type I and Type II errors, Level of significance, degrees of freedom, Significance of Differences between means (Large sample, correlated and uncorrelated).

**Readings:**

1. Broota, K.D. (1989) Experimental Designs in Behavioural Research, Wiley Eastern Limited, New Delhi.
2. Carson, R.C. Butcher, J.N., and Mineka, S. (1997), Abnormal Psychology and Modern Life, Harper Collins, New York.
3. Davison, G.C. and Neale, J.M. (1998), Abnormal Psychology, John Wiley and Sons, New York.
4. Garrett. H.E. (1996), Statistics in Psychology and Education, Vakils, Feffar and Simons, New Delhi.
5. Sarason, I.G. and Sarason, B.R. (2002), Abnormal Psychology, Prentice Hall of India, New Delhi.
6. Singh, A., Asadharan Manovigyan, Punjabi University, Patiala.
7. Barlow, D.H. & Durand, V.M. (2007) Abnormal Psychology: An Integrative Approach. Thomson Wordsworth.

**SEMESTER–VI**

**PSYCHOLOGY**

**(PRACTICAL)**

**Marks: 25**

**Instructions for the Practical Examination:**

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

**Five Practical have to be performed out of the following:**

1. Projective Techniques (T.A.T.).
2. Measurement of Anxiety.
3. Parenting Scale/Home Environment Scale.
4. EPQ.
5. Measurement of Depression.
6. Rosenweig's Pictures Frustration Test.

**SEMESTER–VI**

**WOMEN EMPOWERMENT  
CONTEMPORARY ISSUES OF WOMEN'S RIGHTS**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

**Legal Provisions against Female Foeticide**

1. Medical Termination of Pregnancy Act 1971
2. Prenatal Diagnostic and Technique (Regulation and Prevention of Misuse) Act 1994, 2001 and 2002.

**UNIT–II**

**Attrocities against women and legal provisions**

1. Indian Penal Code 1860: Rape (Sec. 375 IPC)
2. Types of Rape under IPC
3. Criminal Procedure Act 1976: FIR, Protection in case of arrest, detention of women in police lock up, trial in camera etc.

**UNIT–III**

**Feminism, Woman Rights and Challenges to Patriarchy in India**

1. Live in Relationship
2. Single Parenthood
3. Surrogacy and Adoption

**UNIT–IV**

**Women in globalized era**

1. Women and New Avenues: Role of Technology, Education and Science.
2. Women and New Employment opportunities:-  
Army, Space and Research
3. Women and Entrepreneurship, Media and ICT (Information and Communication Technology).

**SEMESTER–VI**

**DEFENCE AND STRATEGIC STUDIES**

**REGIONAL SECURITY AND COOPERATION  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 80**

**Practical Marks: 20**

**Instructions for the Paper Setters:**

**Section A:** The examiner shall set 10 short answer type questions from the entire syllabus and the candidates will attempt 7 questions carrying 4 marks each. Answer to each question shall not exceed half of the page. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions from the entire syllabus—two from each Unit. The candidate shall attempt four questions, one from each Unit. Each question shall carry 13 marks. The total weightage of this Unit shall be 52 marks.

**Note:** Practicals are only meant for the regular students. For the private students the two papers shall be of **100 marks each**. For the private students, each question in Section B will be of 18 marks.

**Stencil outline maps are allowed**

**UNIT–I**

- i) **Theoretical dimensions of ‘Region’ in International Relations.**
- ii) **Regional Security: Regional Cooperation and Military Alliances: Conceptual Dimensions.**

**UNIT–II**

- i) **North Atlantic Treaty Organisation-(NATO):** Aim, Organisation and Working.
- ii) **Gulf Cooperation Council-( G.C.C):** Aim, Organisation and Working

**UNIT–III**

- i) **Association of South-East Asian Nations-(ASEAN):** Concept, Objectives, Features, Problems & Achievements.
- ii) **Shanghai Cooperation Organisation-(S C O):** Aim, Organisation and Working.

#### UNIT–IV

- i) **Non-Aligned Movement (NAM):-** History, Features, Problems, Achievements and relevance in Contemporary period; India and Non-aligned Movement.
- ii) **South Asian Association for Regional Cooperation- (SAARC):**
  - a) Concept, Objectives, Features.
  - b) Problems & Achievements.

#### Suggested Readings:

1. Buzan, Barry, (1987) : People Fear and State: New Delhi, Transasia Publications.
2. Buzan, Barry and Waever, Ole (eds.) (2003) : Regions and Powers: Cambridge.
3. Das, S.T. (1987) : National Security in Perspective: Delhi, Gian Publishing House.
4. Frankal, Joseph (1970) : National Interest: London, Macmillian.
5. Garnett, John (ed) (1970) : Theories of Peace and Security: Macmillan St. Martin's Press.
6. Kingar, Kamal (2008) : Rashtri Surakhya (in Punjabi), Punjab Heritage Foundation.
7. Kingar, Kamal (2011) : Khetri Surakhya ate Sehyog (in Punjabi), Unistar Pubishers.
8. Morgenthau, Hans J. (1969) : Politics Among Nations: Calcutta, Scientific Book Agency.
9. Palmer Perkins, Norman D. and C. (1968) : International Relations: Calcutta, Scientific Book Howard Agency
10. Chaudhury, Subrata Roy (1966) : Military Alliances and Neutrality in War and Peace: New Delhi, Orient Longman.
11. Singh, Nagendra (1974) : The Defence Mechanism and the Modern State: New Delhi, Asia Publishing House. SIPRI Year Book.

**SEMESTER–VI**

**DEFENCE AND STRATEGIC STUDIES**

**(PRACTICAL)**

**Time: 3 Hours**

**Teaching Hours: 3 Periods a Week**

**Written: 1 Hour**

**Total Marks: 20**

**Written: 10**

**Discussion: 05**

**Record and Viva: 05**

**Note:** The paper for written test is to be given by the external examiner on the spot. Internal examiner has to assist him in the conduct of the examination.

**Group–A**

**10 Marks**

1. Tactical, Formations–Section and Platoon and company.
2. Verbal orders
3. Patrol - Types and stages of patrolling

**Group–B: Group Discussion (Topics)**

**05 Marks**

- (a) India's Internal Security problems.
- (b) Confidence bulding measures between India and Pakistan.
- (c) Environmental Security

**Group–C**

**Record and Viva–Voce**

**05 Marks**

**SEMESTER–VI  
GEOGRAPHY**

**GEOGRAPHY OF INDIA  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 70  
Practical Marks: 30**

**Objectives**

To foster comprehensive understanding of physical, human and economics resource base of India.

**Note: Instructions for the paper setters and candidates**

1. A compulsory question on map on India will be set covering the whole syllabus. This question will have 15 parts. The students will attempt any 10 parts in about 15-20 words each. Each part will carry 3 marks (total 30 marks). (Location and Explanation).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt four questions selecting one question from each unit. These will be in addition to compulsory question at serial number one.
3. **Examiner have to send a specimen copy of the outline map of India to be distributed to the student**
4. **Stencil outline map is allowed.**

**Course Content**

**UNIT–I**

India in the context of South Asia, Asia and the World. Relief, drainage, climate, vegetation and soils.

**UNIT–II**

Mineral Resources: Iron-ore, manganese, mica, copper, gold; and power resources. Population: Numbers, distribution and density, growth, migration, urbanization, religious composition.

**UNIT–III**

Agriculture-Characteristics of Indian agriculture; land use pattern, irrigation, major crops (rice, wheat, sugarcane, cotton, jute, tea, groundnut), areas of surplus and deficit food production, problems of Indian agriculture.

**UNIT–IV**

Industries-Distribution and localization factors of major industries (iron and steel, cotton textiles, sugar, fertilizers, cement), role of the public sector in Indian economy. *Transport*: Rail, Road, airways and waterways; International Trade.

**Books Recommended:**

1. Deshpande, C.D.: India: A Regional Interpretation, Northern Book, Centre, New Delhi, **1992**.
2. Johnson, B.L.C.: South Asia, Heinemann, London, 1981.
3. Spate, O.H.K. & Learmonth, A.T.A.: India and Pakistan: A General and Regional Geography, Methuen, London, 1967.
4. Tirtha, Ranjit & Krishan, Gopal: Emerging India: A Geographical Introduction, Conoub, Ann Arbor, Michigan (U.S.A.) 1992.
5. Malkit Singh: Geography of India, Rasmeet Prakashan, Jalandhar, **Reprint 2014**.
6. D.S. Mankoo: Geography of India, Kalyani Publishers, Jalandhar.
7. D.R. Khullar: Geography of India, New Academic Publishing Co., Jalandhar, **2011**.

**SEMESTER–VI****GEOGRAPHY****MAP PROJECTIONS-II AND FIELD WORK  
(PRACTICAL)****Max. Marks: 30****Written Paper of 3 Hours: 15 Marks****Practical Record (File): 08 Marks****Viva: 07 Marks****Objectives:**

- To Provide an analytical understanding of use of common map projections.
- To acquaint the students with the importance of field work as one of the methodologies in geography.
- To sensitize the students about pre-field work and post-field work i.e. data processing and analysis and writing of field work report.

**UNIT–I**

Construction, Properties and Limitations of following Map Projections:

Zenithals: Gnomonic, Stereographic, Orthographic, Equi-distant and Equal- Area (Polar cases only).

Introduction to Sinusoidal and Molleweide's Projections.

General principles of identification and choice of projections

**UNIT–II**

Role of field work in Geography.

Scale of study and field work methodology.

Methods of collecting Primary data (questionnaire, observation, interview and measurement) and Secondary data and parts of report.

Methods of field study of: a Farm, a Village, a Town and Physical Features of an area.

**Note:**

1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 UNITS. Eight questions will be set out of the whole syllabus, four from each UNIT. The students will be required to attempt two questions from each UNIT. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number 1. (Total 12 marks)
3. Evaluation of Practical record will be done at the time of viva–voce examination.
4. In case the candidate has applied for the improvement, he/she should be required to make a fresh practical note book.
5. For practical classes, the number of students in one group shall not exceed fifteen.

**Books Recommended:**

1. Kellaway, George P.: *Map Projections*, Methue and Co., London.
2. Singh, Gopal: *Mapwork and Practical Geography*, Surjeet Book Depot, Delhi, 1993.
3. Singh, Malkiat: *Cartography*, Rasmeet Prakashan, Jalandhar, **Reprint 2014**.
4. Singh, L.R: *Practical Geography*, Chaitanya, Publishing House, Allahabad, 2006.
5. Jones, P.A.: *Field Work in Geography*, Longman, London, 1968.
6. Archer, J.E. & Dalton T.H.: *Field Work in Geography*, E.T. Bastford Ltd., London, 1968.
7. Singh, Gopal: *Map work and Practical Geography*, Surjeet Book Depot, Delhi, 1993.

**SEMESTER–VI**  
**PUBLIC ADMINISTRATION**

**DEVELOPMENT ADMINISTRATION**  
**(With Special Reference to Punjab)**

**Time: 3 Hours**

**Max. Marks: 100**

**Section–A:** The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

**Section–B:** The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

**UNIT–I**

**Introduction:**

Development Administration–Meaning, Scope and Significance. Main features of Development Administration in India. Features of Developed and Developing Countries. Mixed Economy Model & its Rationale and Significance.

**UNIT–II**

**Planning Machinery:**

Planning Commission and National Development Council. State Planning Commission. District and Block Level Planning Machinery. Formulation and Implementation of Development Programmes and Projects.

**UNIT–III**

**Public Sector and Development:**

Evolution and Expansion of Public Sector. Role of Public Sector. Management Boards. Forms and Features of Public Enterprises. Administrative Problems of Public Sector. Parliamentary and Executive control over Public Sector. New Economic Policy. Public and Private Partnership (PPP).

**UNIT–IV**

**Social Welfare and Development:**

Welfare of Scheduled Castes, Scheduled Tribes and other Backward Classes. Welfare Measures for Women and Children, Central Social Welfare Board; Composition and functions. Role of Voluntary Agencies in Social Welfare.

**Suggested Readings:**

1. Khera S.S., Government in Business, National Publishing House, New Delhi, 1977.
2. Kapoor S.S., Women and Welfare: A Study of Voluntary Agencies, Indus Publishing Company, New Delhi, 1995.
3. Puri K.K. and G.S. Brar, Development Administration, Bharat Parkashan, Jalandhar, 1993.
4. Sachdeva D.R., Social Welfare Administration in India, Kitab Mahal, Allahabad 2005.
5. Sapru R.K., Development Administration, Deep & Deep Publications, New Delhi, 1986.

**SEMESTER–VI**

**OFFICE MANAGEMENT & SECRETERIAL PRACTICE (VOCATIONAL)**

**STENOGRAPHY IN ENGLISH  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 60  
Practical Marks: 40**

**Section–A:** The examiner will set 8 short questions from the entire syllabus. The candidate will have to attempt 6 questions out of 8 questions. Each question carrying 2 marks

**(6x2=12 Marks)**

**Section–B:** The examiner will set 8 long questions in four parts, 2 questions from each unit. The candidate will have to attempt 4 questions selecting at least one from each unit. Each question carrying 12 marks.

**(4x12=48Marks)**

**UNIT–I**

**Typing**

**Manuscripts:**

Proof correction-signs and their meaning, process of typing manuscripts, corrections of drafts.

**Tabulations:**

Definition and importance, part of tabulation, procedure for typing, tabulation, typing of book-notes, typing of balance sheet.

**UNIT–II**

**Syllabification of Combination:**

Rules for division of words at line ends, exceptions, formation of special sign with combination of characters.

**Correspondence:**

Typing with proper display  
Typing of business letters  
Typing of official letters

**UNIT–III**

**Shorthand**

Advanced phraseography, phraseology related to business, banking, insurance and administration. Special list of words.

**UNIT–IV**

Arrangement of materials on typewriter desk to facilitate transcription.  
Checking and proof reading transcription.

## SEMESTER–VI

### OFFICE MANAGEMENT & SECRETERIAL PRACTICE (VOCATIONAL)

#### (PRACTICAL)

**Marks: 40**

#### **Typing**

Manuscripts

Typewriting of Manuscripts (typed).

Typewriting manuscripts (handwritten).

Practice on carrying out corrections of drafts.

**Note:-** Computer facilities to do practical on computer.

#### **Tabulations**

Typewriting of tabulations, balance-sheet, invoices, foot notes.

#### **Syllabification and Combination:**

Typewriting exercises breaking of words at line ends, breaking of words with syllabification rules, typewriting of characters not existing on key boards.

#### **Correspondence:**

Typewriting unarranged, misspelt and wrongly-typed letters by observing the rules of display. Typewriting of business, official letters.

#### **Shorthand**

1. Taking information from other documents in completion of short hand notes.
2. Office style dictation with amendments.
3. Submitting transcribed materials for signature.
4. Marking and filing of shorthand notices after completion of transcription.

#### **Recommended Drills:**

Throughout the course, there should be a constant emphasis on:

Fluency in shorthand, special care should be taken to expose students to variety of pronunciation.

Formation of well constructed shorthand outlines with the help of facility drills.

Auto mobilisation of grammalogues and phrases.

Daily practice in taking dictation starting at slow speed.

Practice in transcribing the long hand.

Dictation each day should be on practice material to increase the speed and on new matter to improve competence. it should be for timings of 1,3,5,7 and 10 minutes.

Probable work-sites where on the job training may be organised.

Government department offices.

Business/commercial organisation.

Industrial establishments.

Hospitals.

Educational institutions.

Railways, airlines and other transport undertakings.

Banking and insurance organization.

Parliament and state assembly.

Job work centres

This is a tentative list. Principal may be given the complete freedom to select any organistaion. However, while selecting the institution, care should be taken to select such institution who show willingness to accept the trainees and have the scope for providing variety of experiences in office practice and stenography area. Suggested Department/Section for On-the-Job Training' at the end of first year:

<b>Department/Section</b>	<b>No. of weeks</b>
1. Reception/inward and outward mail	1
2. Office establishment/filing/office equipment and production	1
3. Stenography work and typing with various executives and sections.	1
4. Sales, advertising and publicity, stores and	1
	4 weeks

**Suggested Department/Section for ‘On-the-Job Training’ at the end of second year.**

<b>Department/Section</b>	<b>No. of weeks</b>
1. Private Secretaries of various executives in different departments of the organisation	1
2. Office establishment/company secretary/share department	1
3. Accounts department/time office/reception	1
4. Typing pool/advertising /publicity	1
	4 Weeks

**Note:** The purpose of the ‘On-the-Job Training’ is to expose the students to the world of work and provide professional experience in real situation. The student shall have to maintain a diary and submit a detailed report of his activities which shall be certified by a responsible officer of the establishment. However, the teacher will also supervise the ‘On-the-Job training’ programme.

**Suggested Reading Materials:**

**(a) Short Hand**

<b>Title</b>	<b>Publisher:</b>
1. Pitman Shorthand Dictionary	A.H. Wheeler & Company
2. Pitman Shorthand Reading and Dictation Exercises Delhi	Pitman Shorthand School, New
3. Pitman Shorthand Reading and Dictation Exercises Delhi	Pitman Shorthand School, New
4. James W.M. Tylor A Commentary on Pitman Shorthand	
5. Shorthand made easy for beginners with key	O.P. Kuthiall
6. How to start shorthand Speed building	–do– & Edger Thrope
7. How to avoid confusion in outline in pitman shorthand	–do–
8. A Comprehensive List of Gramalongoos & Contractions	–O.P. Kuthiall

**(b) Type Writing:**

<b>Title</b>	<b>Publisher</b>
1. H.A. Mehta Typewriting Complete Course	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay - 4000037.
2. H.A. Mehta Typewriting Office Practice set	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay - 4000037.
3. H.A. Mehta Business Letter typing sets	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay - 4000037.
4. Typewriting by Md.Khan Dictation Exercises	Chittoor Publishing House, Chittoor, A.P.
5. Layouts and Forms in Typewriting	State Board of Technical Education, Hyderabad- 500022.

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–VI) (Session 2018-19)  
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- |  |   |
|--|---|
| 6. 20th Century Typewriting                  | South-Western Publishing Company, Gincinati, Ohio, USA. |
| 7. Typewriting Drills for Speed and Accuracy | Gregg. Publising Corporation, USA.                      |
| 8. Principle of Typewriting                  | O.P. Bhatia, S.S. Sangal.                               |
| 9. Typewriting Speed & Accuracy              | O.P. Kuthials & Thorpe                                  |
| 10. Typewriting Theory & Practicle           | R.C. Bhatia   |
| 11. Type writing speed & Accuracy-B-I.       | O.P. Kuthiall   |
| 12. -do- B-II                                | -do-  |

**(c) Office Practice**

- |  |   |
|--|---|
| 1. Office Practice Made Simple                     | By G. Whitehead, 1994.  |
| 2. Office Management and Commercial Correspondence | By Balraj Duggal, 2005.   |
| 3. Office Management and Secretarial Practice      | By V.P. Singh, Gyan Publishing House, Delhi.                        |
| 4. Business Correspondence and Office Practice     | By Nagamia and Bhal Thakkar Publication, Bombay                     |
| 5. Office Procedure and Secretarial Practices      | D.P. Katuria-Pitman Publications                                    |
| 6. Office Management                               | R.K.Sharma, Shashi K.Gupta, Sushil Nayar, Kalyani Publishers, 2003. |
| 7. Office Management                               | R.K. Chopra, Himalya Publishing House, 2000.                        |
| 8. Drafting & Office Procedure                     | Edgen Thrope.   |
| 9. Office Practice Made Simple                     | By Geoffrey Whitehead Published by WH Allen, 1974.                  |
| 10. Modern Office Management                       | By Jain J. Singh, PP, 2007, Deep & Deep Publications.               |
| 11. Office Management                              | By Manish Chopra, 2003.   |

**SEMESTER–VI**  
**TRAVEL & TOURISM**  
**EXPLORING TOURISM IN PUNJAB**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

The Theory paper consists of two Parts A and B (short questions and long questions).

**Part–A:** The examiner will set 12 short questions, 3 questions from each section of 02 marks each.

The candidate will have to attempt 10 questions out of 12 questions.

**(10x02=20 Marks)**

**Part–B:** The examiner will set 8 long questions, 2 questions from each section of 20 marks each.

The candidate will have to attempt 4 questions out of 8 questions.

**(04x20=80 Marks)**

**UNIT–I**

**Chapter 1. Understanding Geography of Punjab:**

Topography, river system, climate, flora and fauna,

Historical impact on the life of the people

**Chapter 2. Gardens, Wetlands and Wildlife**

Bara Dari Patiala, Aam Khas Bagh (Sirhind), Harike

wetland, Chhatbir Zoological Park (Zirakpur), Kansal

Forset Reserve (Chandigarh)

**UNIT–II**

**Chapter 3. Ancient Medieval Landscapes of Punjab**

Ropar as a Centre of Harappan Civilisation

Stupa at Sanghol

Golden Temple, Amritsar

Medieval Serais and Imperial Highways

#### **Chapter 4. Modern Landscapes of Punjab**

Amritsar of Ranjit Singh: Ram Bagh and Gobindgarh Fort

Kapurthala Place

Sheesh Mahal, Patiala

Chandigarh as a Modern City

#### **UNIT–III**

#### **Chapter 5. Fairs and Festivals**

Sikh, Hindu and Muslim Religious Fairs-Diwali, Holla Mohalla (Anandpur Sahib), Dusshera, Lohri, Maghi Mela (Muktsar), Baisakhi at Damdama Sahib (Talwandi Sabo), Urs of Sheikh Mujaddid-Alif-Saani (Sirhind), Religious and Secular Centres-Golden Temple and Akal Takth (Amritsar), Anandpur Sahib (Takth Keshgarh Sahib), Durgiana Temple (Amritsar), Devi Talab (Jalandhar).

#### **Chapter 6. Museums and Memorials**

Archaeological Museums at Ropar, Government Museum and Art Gallery and City Museum (Chandigarh), Panaroma of Ranjit Singh (Amritsar), Art Gallery at Sheesh Mahal (Patiala), Hussainwala Memorial (Ferozpur), Retreat ceremony at Wagah (Amritsar), Desh Bhagat Yadgaar Hall (Jalandhar), Sikh Museum (Golden Temple, Amritsar), Science City (Kapurthala), Jalianwala Bagh Martyr's Memorial (Amritsar).

#### **UNIT–IV**

#### **Chapter 7. Handicrafts and Handlooms**

Phulkari, Bagh, Shawla, *durees* (floor covering), *Jutties* and Blankets

#### **Chapter 8. Performing Arts**

Dance: Bhangra, Gidda, Malwai Gidda, Jhummer, Sammi.

Music-Folk and Classical

Report Writing: Based on site visit/Event organized (Compulsory)

**Suggested Readings:**

1. Anand, Mulk Raj, ed. 1981. *Maharaja Ranjit Singh as the Patron of Arts* (Mumbai: Marg Publications)
2. Arshi, P.S. 1986. *Sikh Architecture* (Delhi: Intellectual Publishing House).
3. Aryan, K.C. 1977, *Punjab Murals* (Delhi: Rekha Prakashan).
4. Aryan, K.C. 1983, *Cultural Heritage of Punjab* (Delhi: Rekha Prakashan).
5. Daljeet, 2004. *The Sikh Heritage: A Search for Totality* (Delhi: Prakash Books).
6. Grewal, J.S. Social and cultural History of Pujab: Pre-historic, Ancient and Early Medieval (New Delhi: Manmohan)
7. Kang, Kanwarjit Singh, 1985. *Wall Paintings of Punjab and Haryana* (Delhi: Atma Ram & Sons).
8. Parihar, Subhash, 1985. *Mughal Monuments of Punjab and Haryana* (Delhi: Inter-India Publications).
9. Randhawa, M.S. ed., 1960, *Punjab Punjabi* (Patiala: Languages Department, Punjab).
10. Srivastava, S.P., 1991. *Art and Cultural Heritage of Patiala* (Delhi: Sundeep Prahashan).

**[www.punjabgovt.nic.in](http://www.punjabgovt.nic.in)**

[punjabtourism.gov.in](http://punjabtourism.gov.in)

[chandigarhtourism.gov.in](http://chandigarhtourism.gov.in)

## SEMESTER–VI

### TOURISM AND HOTEL MANAGEMENT (VOCATIONAL)

**Time: 3 Hours.**

**Max. Marks: 100**

**Theory Marks: 80**

**On the Job Training Marks: 20**

#### **Instructions for the Paper Setter:**

The following pattern of setting of question paper shall be observed. The question paper covering the entire course shall be divided into three sections as follows:

**Section–A:** This section will consist of 7 very short answer type questions with answers to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being **14 marks**.

**Section–B:** This section will consist of short answer type questions with answers to each question upto two pages. Nine questions will be set by the examiner and the candidates will be expected to attempt six questions. Each question will carry six marks; total weightage of the section being **36 marks**.

**Section–C:** This section will consist of essay type questions with answer to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 15 marks, total weightage of the section being **30 marks**.

#### UNIT–I

Interdisciplinary approach of tourism, infrastructure and superstructure for tourism-special emphasis on Indian hospitality industry

Tourism planning and development, demand and supply in tourism

#### UNIT–II

Tourism master plan

Destination development and destination marketing

### UNIT–III

Economic, Social and Political consideration of tourism  
International tourism organization:

- W.T.O.
- PATA
- IATA

### UNIT–IV

Tourism in 21st century,  
Impact of globalization and the era of information technology and other future trend in tourism industry  
Tourism pollution

**Students has to go for two months of specialized industrial training in a travel agency or in a hotel.**

#### **Specialized industrial training of 8 weeks**

The final year students are supposed to undertake practical training either in a hotel or a travel agency for at least two months. The project report will be submitted to college before examination and will be evaluated by external examiner. The internal assessment shall be based on periodical tests, written assignment and behaviour in the class.

#### **Reference Books:**

1. Romila Chawla: Tourism in 21st Century, Edition 2003, Sonali Publication.
2. Romila Chawla: Global Tourism, Edition 2003, Sonali Publication.
3. Dalip Makan: Strategies & Planning in Tourism Industry, edition 2003, Adhyayan Publisher.
4. R.L. Varshney: International Marketing Management, Edition 2005, Sultan Chand & Sons.
5. Romila: Tourism Research & Development, Edition 2004, Sonali Publication.
6. Romila Chawla: Tourism Marketing & Development, Edition 2004, Sonali Publication.
7. Romila Chawla: Economics of Tourism & Development, Edition 2004, Sonali Publication.
8. Gene Burte & Munish Thakur: Management Today Principal & Practice, Edition 1995, Tata McGraw Hill Publishing Co. Ltd.
9. Dr. C.B. Gupta & Dr. N. Rajan: Marketing Management, 7th edition 2002, Sultan Chand & Sons.

**SEMESTER–VI**

**TAX PROCEDURE AND PRACTICES**

**CUSTOMS ACT**

**Time: 3 Hours Max.**

**Max. Marks: 100**

**Note:** The following pattern of setting of question paper shall be observed: Instructions for the Paper Setters: The question paper covering the entire course shall be divided into three sections as follows:-

**Section–A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

**Section–B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

**Section–C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions, will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

**UNIT–I**

1. Role of Customs in International Trade.
2. Organisation of customs in India-Administrative and Operational Authorities.
3. Regulatory framework-An overview of customs Act, 1962; An overview of Customs Tariff Act, 1975.

### **Important terms and Definitions**

Assessable value baggage, bill of entry, bill of exports, suitable goods, duty, exporter, foreign going vessel, aircraft goods, import, import manifest, importer, prohibited goods, shopping bill, stores, bill, stores bill of landing, export manifest, FOB, FAS, CIF, GATT, Letter of Credit.

4. Kinds of duties-basic, Auxiliary, additional or countervailing; basis of levy-advalem, specified duties.
5. Prohibition of exportation and importation of goods and provisions regarding notified and specific goods.

### **UNIT–II**

6. Import of goods-free import and restricted import; Types of restricted import-prohibited goods, canalised goods, import against licensing; Types of import-import of cargo, import of personal baggage, import of stores;

Import of cargo- (a) import by land, sea or air route

(b) by post

**Clearance procedure** - For home consumption, for warehousing exbond clearance; Steps and documents to be prepared and filed, viz. bill of entry-

-Form No. 22 bill of entry for home consumption

-Form No. 23 bill of entry for warehouse.

-Form No. 24- Shipping bill for exbound clearance for home consumption and other accompanying document.

Clearance procedure for Import by post

Clearance of baggage-Import of baggage-meaning and kinds of baggage; rules and procedure of import thereof general passenger, tourist passenger and transfer of residence passenger; (Form No. 37-Form for baggage declaration).

7. Export of Goods–Free Export and Restricted Exports; Types of Restricted Exports-Prohibited Exports, Canalized Exports, Exports Against Licensing; Types of Exports–Export of cargo; Export of Baggage; Types of Exporters-Manufacturer Exporter and Merchant Exporter; Export of Cargo- (a) By Land, Sea and Air Route

(b) By Post

### UNIT–III

Clearance Procedure - Procedure and Filling & Filing of Relevant Documents

Form No.94- Shipping Bill for Export of Suitable Goods.

Form No.95- Shipping Bill for Export of Duty Free Goods.

Form No.96- Shipping Bill for Export of Duty Free Goods Exbond.

Form No.98- Bill for Export of Dutyable Goods.

Form No.99- Bill for Export of Duty Free Goods.

Form No.100-Bill for Export for Export of duty free goods ex-bond.

### UNIT–IV

Duty drawback - Meaning/Scheme, procedure and documentation thereof

Form No.93- Shipping Bill for Export of Goods under claim for duty Drawback.

Form No.97- Bill of Export for Export of Goods under claim for Duty Drawback.

### References:

1. Datey V.S. 2006 Taxmann's Indirect Taxes Law Practice Taxmann. Publications Pvt. Ltd., New Delhi.
2. Taxmann's Indirect Tax Laws as amended by Finance Act 2007. Taxmann Allied Service Pvt. Ltd., New Delhi, 2004.

**'ON THE JOB TRAINING' OF 4 WEEKS**

**Periods/week: T L**

**3 3**

1. A consolidated Report on 'On the Job Training' shall be prepared by every student and must be submitted in the college. The consolidated Report will be evaluated by the external examiner and shall be given the grades as follows:

O - Outstanding

A - Very Good

B - Good

C - Average

D – Unsatisfactory

In case, the training report is rated as unsatisfactory, the candidate shall have to submit it again incorporating the changes suggested by the examiner, within one month from the date of intimation to the candidate by the concerned college.

**Suggested Readings:**

1. Monica Singhania and Vinod K Singhania (2017 ) Corporate Tax Planning & Business Tax Procedures with Case Studies; Taxman 21st Edition 2017, New delhi
2. V.S. Datey (2017) Customs Law Practice & Procedures 18th Edition 2017 Taxmann, New Delhi

3. B.N. Gururaj (2005) Guide To The Customs Act- Law Praticce And Procedures, Lexis Nexis;  
Second edition
4. Dr. Girish Ahuja & Dr. Ravi Gupta (2016) Practical Approach to DIRECT &  
INDIRECT TAXES, (Income Tax, Excise, Customs, CST, VAT & Service Tax), Bharat  
Law House Pvt. Ltd.

**SEMESTER–VI**

**ADVERTISING, SALES PROMOTION AND SALES MANAGEMENT  
(VOCATIONAL)**

**SALES PROMOTION AND PUBLIC RELATIONS**

**Time: 3 Hours**

**Marks: 100**

The following pattern of setting of question paper shall be observed.

**Instructions for the Paper Setters:**

**Section–A:** This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

**Section–B:** This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

**Section–C:** This section will consist of essay type questions with answers to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

**UNIT–I**

Nature and Importance of sales promotion its role in Marketing, Forms of sales promotion: Consumer oriented sales promotion, Trade - oriented sales promotion and sales force oriented sales promotion.

**UNIT–II**

Major tools of sales promotion: Samples point of purchase, displays and demonstrations. Exhibitions and Fashion shows, sales contests and games of chance and skill, lotteries, gifts, offers, premium and free goods. Princepacks, rebates, patronage, rewards.

Conventions, conference and tradeshows, specialities and novelties.

### UNIT–III

Developing and sales promotion programmes, pre-testing implementing, evaluating the results and making necessary modifications.

Public relations: Meaning, features, growing importance, role in marketing, similarities of publicity and public relations.

### UNIT–IV

Major tools of public relations: News, speeches, special events, handouts and leaflets, audio-visual, public service activities miscellaneous tools.

Ethical and local aspects of sales promotion and public relations.

#### **Suggested Readings:**

1. Kotler, P., K.L. Killer, A. Koshy & M. Jha, Marketing Management, 13th Ed., PHI, 2007.
2. Vaswar Das Gupta, Sales Management: In the Indian Perspective, PHI, 2004.

**SEMESTER–VI****COMMERCE****BUSINESS LAWS****Time: 3 Hours****Max. Marks: 100****Note: i) The candidates are allowed to use simple (Non-Scientific) Calculators.****ii) The question paper covering the entire course shall be divided into three sections as follows:-**

**Section–A:** It will consist of 10 very short-answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage of the section being **20 marks**.

**Section–B:** It will consist of short answer questions with answer to each question upto two pages in length. Twelve questions will be set by the examiner and eight will be attempted by the candidates. Each question will carry 6 marks; total weightage of the section being **48 marks**.

**Section–C:** It will consist of essay type questions with answer to each question upto five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 16 marks; total weightage of the section being **32 marks**.

**UNIT–I**

Law of contract including contract of indemnity guarantee, bailment, pledge and agency

**UNIT–II**

Law of sales of goods

**UNIT–III**

Law of negotiable instruments.

**UNIT–IV**

The Punjab shops and commercial establishment act, 1959. Introduction to GST.

**Suggested Readings:**

1. Kuchhal M.C., "Business Law", Vikas Publications, 2007.
2. Gulshan S.S. and Kapoor G.K. "Business Law" New Age International Ltd. Publishers, 2007.
3. Batra V.K. and Kaira N.K., "Mercantile Law", Tata McGraw Hill Publishers, 2007.
4. Fiber Larry and Weigle Jerry, "Applied Business Law", Restan Publishing Company, 2007.
5. Ashwathappa and Ready, "Business Law", Himalaya, Publishing House, 2007.
6. Bulachandani K.R. "Business Law", Himalaya Publishing House, 2007.
7. Gupta S.S., GST-How to meet your obligations 2017. Taxman, Publications (P) Ltd.

**SEMESTER–VI**

**TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)**

**INFORMATION, COMMUNICATION & AUTOMATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 50**

**Viva: 50**

Viva-Voce will be conducted by the external examiner which will be based on ‘On the Job-Training’ undertaken by student and report prepared during ‘On the Job-Training’.

**Instructions for the Paper Setters:**

**Section–A:** It will consist of 10 questions from the entire syllabus of the paper with answer to each question should up to 50 words. Students will be required to attempt any 5 questions. Each question will carry 2 marks. This section will be of 10 marks

**Section–B:** It will consist of 8 essay type questions, 4 from each unit with answer to each question should up to 5 pages. Students will be required to attempt any 4 questions. Each question will carry 10 marks. This section will be of 40 marks.

**Part–I**

- Consumer expectation and services & legislation.
- National tourism civil aviation & policy.
- Information Technology.
- Computerised Reservation System:-Introduction to CRS, Components of CRS, Need of CRS

**Part–II**

- Market Research: –Concept, Significance, Market Segmentation.
- Data collection
- Consortiums of airline hotel & wholesalers
- Communication:-Meaning, Importance, Types of Communication, Barriers to effective communication.

**Suggested Readings:**

1. National Development Council Report.
2. National Action Plan, 1992.
3. Reports of World Tourism Organisation.
4. Report Workshop on Tourism Legislation - August 10-11, 1987 IITTM, New Delhi.
5. Report Workshop on Tourism Legislation - February 23, IITTM, New Delhi.

## SEMESTER–VI

### ECONOMICS

#### QUANTITATIVE METHODS FOR ECONOMISTS

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus (each carrying 2 marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

#### **UNIT–I**

Sets, Relations and functions, Limits and continuity (Basic concepts), Derivative of simple functions only (excluding log & exponential functions). Maxima/Minima for single variable functions. Introduction to matrices - definition, properties & inverse.

#### **UNIT–II**

Measures of central tendency — Mean, Mode, Median and Geometric Mean; Measures of dispersion.

#### **UNIT–III**

Concepts and Measure of skewness and kurtosis: Boyle's & Karl Pearson's measures. Simple correlation & regression (ungrouped & grouped data).

#### **UNIT–IV**

**Interpolation:** Concepts and Methods — Binomial expansion, Newton and Lagrange's Method (with emphasis on missing values only). Price Index Numbers—Weighted and Unweighted Index Numbers, various formulae and consistency tests.

#### **Suggested Readings:**

1. Archibald, G. & R.G. Lipsey (1973); Introduction to a Mathematical Treatment of Economics, 2nd Ed. Weidenfeld and Nicholson, London.
2. Yamane, Taro (1968); Mathematics for Economists, 2nd ed. Prentice Hall, Englewood Cliffs, New Jersey.
3. Croxton, F.E. Cowden D.J. and Klein, S. (1973); Applied General Statistics, 3rd. Ed., Prentice Hall of India, New Delhi.
4. Fox, I.A. (1972); Intermediate Economic Statistics, Wiley Eastern Pvt. Ltd., New Delhi.
5. Nagar, A.L. and Das, R.K. (1976); Basic Statistics, Oxford University Press, Bombay.
6. Baumol (1973); Economic Theory and Operations Analysis, Prentice Hall of India Pvt. Ltd., New Delhi.

**SEMESTER–VI****INDUSTRIAL ECONOMICS–VI****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT–I**

**Industrial Finance:** Meaning, Scope, Objectives and Functions; Sources and Methods of Industrial Finance: Internal and External Sources; Short and Long Term Finance.

**UNIT–II**

**Financial Institutions-**Commercial Banks; Finance Corporation and Industrial Development Banks.

**UNIT–III**

**Capital Budgeting and Structure:** Finance of Working Capital; Evaluation of Project Investment. Cost of Capital and its Effect on Gearing and Company Valuation. Financial Leverage and Capital Gearing.

**UNIT–IV**

Bank and Non-Bank Finance; Venture Capital; Foreign Investment and Stock Market Prices and Operations and Role of SEBI.

**Recommended Texts:**

1. Pandey, I.M.: Capital Structure and Cost of Capital.
2. Pandey, I.M.: Financial Management, Vikas Publishing House, New Delhi, 2000.
3. Hay, D.A. and Morris D.J.: Industrial Economics: Theory and Evidence, Oxford University Press, London, 1979.
4. Khan, M.Y.: Industrial Finance, Tata Mcgraw Hill, New Delhi, 1980.
5. Gupta, L.C.: The Changing Structure of Industrial Finance in India, Oxford, Clarendon, 1969.
6. Dasgupta, P.S. et.al. : Guidelines for Project Evaluation.

## SEMESTER–VI

### QUANTITATIVE TECHNIQUES–VI

**Time: 3 Hours**

**Max. Marks: 100**

#### **Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks)) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

#### **UNIT–I**

Definition, Scope and Nature of Econometrics. Simple Linear Regression Model (OLS method) with applications.

#### **UNIT–II**

General Linear Regression Model, assumptions, properties (BLUE).

Gauss-Markov Theorem, Concepts of  $R^2$  and  $\bar{R}^2$ , Test of Significance (Stress on Numericals).

#### **UNIT–III**

Econometric Problems of Heteroscedasticity and Multicollinearity in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Specification Bias.

#### **UNIT–IV**

Problems of Auto-Correlation in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Distributed Lag Models and Auto-Regressive Models. Dummy Variable Technique and its Uses.

#### **Books Recommended:**

1. Koutoyannis, A.: Theory of Econometrics.
2. Gujarati: Basic Economics (2003).
3. Mehta and Madnani: Basic Economics.
4. Stock and Watson: Introduction to Econometrics (2004).
5. Dougherty C.: Introduction to Econometrics (2007).

**SEMESTER–VI****AGRICULTURE ECONOMICS & MARKETING****AGRICULTURAL MARKETING–III****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (i) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

**UNIT–I**

Marketing Management—Nature, Scope and Function of Marketing Management.

Marketing Research—Meaning, Scope, Importance and Techniques.

**UNIT–II**

Marketing of Major Agriculture Commodities, Foodgrains, Cash Crops, Milk and Poultry.

Marketing of Agricultural Input—Fertilizers, Pesticides and Agricultural Machinery.

**UNIT–III**

Concept of Physical Distribution—Role of Public distribution in India, Performance and Evaluation of public distribution system in India.

**UNIT–IV**

Agreement on Agriculture under WTO, Pre and Post WTO Agricultural Trade, Sanitary and Phyto-Sanitary Measures on Agriculture, Impact of WTO on Indian Agriculture.

**Recommended Readings:**

1. Philips, Kotler, Marketing Management Analysis Planning and Control.
2. Gandhi, J.C., Marketing and Managerial Introduction.
3. Neelamegham, S. Marketing Managerial and the Indian Economy.
4. Bansal, P.C., Agricultural Problems in India.
5. Singh & Sadhu Agri. Problem in India, Himalayan Publishing House, New Delhi, 1986.

**SEMESTER–VI****RURAL DEVELOPMENT–VI  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20****Instructions for the Paper-Setters/Examiners:**

- (i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
- (ii) Students will attempt 1 out of 2 questions from each of the four units (15 marks each).

**UNIT–I**

**Dairy, Poultry & Piggery:** Breed and Breeding Methods, Management and Care of Animals, Sheds, Feeding, Health, Important Diseases, Marketing of Products, Economics of Dairy, Poultry and Piggery.

**UNIT–II**

**Fishery:** Scope of Fishery, Species and Culturing of Fish, Management, Feeding, Diseases, Marketing, Economics of Fishery.

**UNIT–III**

**Bee Keeping:** Scope of Bee-Keeping, Equipment needed, Species, Diseases, Economics of Bee Keeping.

**UNIT–IV**

**Time and Energy Management:** Importance, Leisure, Time and its use, Energy Management in Households and Agriculture.

**Food & Nutrition:** Basic Food Groups, Essential Constituents, Vitamins and Minerals, Balanced diet.

**SEMESTER–VI**

**RURAL DEVELOPMENT–VI**

**(PRACTICAL)**

**Max. Marks: 20**

**Note:** Six periods per week will be devoted to both theory and practicals. Candidates are expected to have practical knowledge about dairy, poultry, piggery, bee keeping, time and energy management, food and nutrition etc.

**Suggested Readings:**

1. D.S. Dev Poultry Farming.
2. Punjab Agriculture Books on Dairying, Fishery and University, Ludhiana Bee Keeping.

**SEMESTER–VI  
MATHEMATICS**

**PAPER–I: LINEAR ALGEBRA**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section–A and Section–B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

**Section–A**

Definition of groups, rings and fields with examples. Definition of a vector space, subspaces with examples. Direct sum of subspaces. Linear span, Linear dependence, Linear independence of vectors. Linear combination of vectors, Basis of a vector space, Finitely generated vector spaces. Existence theorem for basis. Invariance of the number of elements of the basis set. Dimension of sum of two subspaces. Quotient space and its dimension.

**Section–B**

Linear transformation. Algebra of linear transformation. Rank- Nullity theorem, Isomorphism and Isomorphic spaces, Matrix of a linear transformation. Changes of basis, Linear operator.

**Books Recommended:**

1. K.Hoffman & R. Kunze: Linear Algebra, 2nd Edition, Prentice Hall, New Jersey, 1971.
2. V. Krishnamurthy, V. P. Mainra and J.L. Arora: An Introduction to Linear Algebra, East West Press, 1976.
3. Shanti Narayan & P.K. Mittal: A Text Book of Matrices, 10th Edition (2002), S.Chand & Co.
4. Surjit Singh: Linear Algebra, 1997.

**SEMESTER–VI  
MATHEMATICS**

**PAPER–II: NUMERICAL ANALYSIS**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. Syllabus of this paper is split into two Parts: Section–A and Section–B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.
4. The non-programmable scientific calculator is allowed in the examinations.

**Section–A**

Error generation, propagation, error estimation and error bounds, Solution of non-linear equations, Bisection method, Iteration method, Newton's Method, Generalized Newton's Method, Method of false position, Muller's method, Rate of convergence of these methods.

Solution of linear system of equation; Direct method, Gauss elimination variant (Gauss Jordan and Crout reduction), Triangular Method, Iterative Method, Jacobi's Method, Gauss Seidel Method. Finite Differences: Forward, Backward, Central, Divided differences, shift operator, relationship between the operators and detection of errors by use of difference operator.

**Section–B**

Interpolation with divided difference, Newton's formula, Lagrangian Method, Finite difference interpolation, Gauss formula, Stirling formula, Bessel's formula, Error Estimation Extrapolation. Numerical differentiation, Method based on interpolation. Numerical Integration, Trapezoidal rule, Simpson's rule, Weddle rule, Romberg Integration, Gaussian integration method, Gaussian legendre integration. Double numerical integration.

Numerical solution of ordinary differential equations, Initial value problem, Taylor's method, Euler's methods, Picard's method, Milne's Method, Runge-Kutta Method. Predictor- Corrector's Method.

**Books Recommended:**

1. S.S. Sastry: Introductory Methods of Numerical Analysis, 2003 (3rd Edition), Prentice Hall of India.
2. A. Maritava Gupta and Subash Ch. Bose: Introduction to Numerical Analysis.

**SEMESTER–VI  
STATISTICS**

**PAPER–I: ECONOMIC STATISTICS**

**Time: 3 Hours**

**Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper will consist of two sections, Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non–Programmable calculators.

**Section–A**

Introduction to index number, problems in the construction of index numbers, Laspyeres, Passche's, Drobish-Bowley, Walsh Marshal-Edgeworth and Fisher's formulae for index numbers, errors in index numbers, various tests for the criterion of a good index numbers, chain index number, cost of living index numbers, uses of index numbers.

**Section–B**

Introduction of time series, the four components of a time series, measurement of secular trend by graphic method, method of semi averages, the method of moving averages and fitting of mathematical curves, measurement of seasonal fluctuations by method of simple averages, ratio to moving average, ratio to trend and link relative methods, measurement of cyclical fluctuations (excluding periodogram analysis).

**Book Recommended:**

1. Goon, A.M., Gupta, M.K. and Dasgupta, B., Fundamentals of Statistics, Vol.-II, World Press, 2005.
2. Medhi, J., Statistical Methods. New Age International Publishers, 2000.
3. Nagar, A.L. and Das, R.K., Basic Statistics, Oxford University Press, 2005.
4. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

**SEMESTER–VI  
STATISTICS**

**PAPER–II: VITAL STATISTICS AND INDUSTRIAL STATISTICS**

**Time: 3 Hours**

**Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper will consist of two sections, Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non–Programmable calculators.

**Section–A**

Vital statistics, data for vital statistics, rate of vital events, measurement of mortality, crude, specific and standardized death rates, cause of death, infant Mortality. Fertility rates. Measurement of fertility, crude birth rate, general fertility rate, age specific fertility rate, general and total fertility rates. Measurement of population growth, growth reproduction rate and net reproduction rate.

**Section–B**

Statistical quality control: chance and assignable causes, process and product control, the techniques of control charts for process control, three sigma limits and specification limits. Schewharts Control charts for mean, S.D. and Range, Control Chart for number of defective and fraction defective, control charts for number of defects. Advantages of process control, sampling inspection by attributes for product control, the concept of producer's and consumer's risks, AQL, LTPD, AOQL, ASN, ATI and OC functions and curves, single and double sampling plans and their properties.

**Book Recommended:**

1. Goon, A.M., Gupta, M.K. and Dasgupta, B., Fundamentals of Statistics, Vol.-II, World Press, 2005.
2. Medhi, J., Statistical Methods. New Age International Publishers, 2000.
3. Nagar, A.L. and Das, R.K., Basic Statistics, Oxford University Press, 2005.
4. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

**SEMESTER–VI  
STATISTICS**

**PAPER-III: - Practical based on PAPER–I: ECONOMIC STATISTICS and  
PAPER–II: VITAL STATISTICS AND INDUSTRIAL STATISTICS**

**Time: 2 Hours**

**Marks: 30**

Teaching time for practical paper would be one hour per week.

**List of practical exercises**

1. Exercises on construction of index numbers: Laspyere's, Passche's, Drobish-Bowley's, Walsh Marshal-Edgworth's, Fisher's
2. Exercises on measurements of secular trend using graphic method, semi averages method, curve fitting method and moving average method
3. Exercises on fitting of various mathematical curves using least square principle
4. Exercises on measurements of seasonal fluctuations using simple average method, ratio to trend method, ratio to moving averages, and link relative method
5. Exercises on measurements of mortality: crude death rate, specific death rate, standardized death rate
6. Exercises on measurements of fertility: crude birth rate, general fertility rate, specific fertility rate, total fertility rate
7. Exercises on measurements of population growth: Crude rate, gross reproduction rate, net reproduction rate
8. Exercises on construction of three sigma limits of control charts for mean, standard deviation, and range
9. Exercises on construction of three sigma limits of control charts for number of defective, fraction defective, and number of defects.

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and other one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non-Programmable calculators. The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

**SEMESTER-VI**

**CHEMISTRY (ORGANIC CHEMISTRY- A)  
(THEORY)**

**Time: 3 Hrs  
45 Hrs. (3 Hrs./week)**

**Marks: 35**

**The question paper shall consist of two parts as detailed below:-**

**Part-A :- (Compulsory)**

It shall consist of 8 very short answer type questions (Q. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed  $1/3^{\text{rd}}$  the page. Each question will be carrying one mark.  
**8 X 1 = 8 Marks**

**Part-B :-**

It shall consist of three sections (Section 1, II & III). It shall consist of 9 questions (Q. Nos. 9 to 17) from the entire syllabus. Each question will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question will be carrying  $4\frac{1}{2}$  marks.

**6 X  $4\frac{1}{2}$  = 27 Marks**

**Section-I**

**1. Spectroscopy**

**(15 hrs.)**

Nuclear Magnetic Resonance (NMR) spectroscopy.  
Proton Magnetic Resonance ( $^1\text{H}$  NMR) spectroscopy,  
nuclear shielding and deshielding, chemical shift and molecular structure, spin-spin splitting and coupling constants, areas of signals, interpretation of PMR spectra of simple organic molecules such as ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromoethane, ethyl acetate, toluene and acetophenone.

**2. Electromagnetic Spectrum: Absorption Spectroscopy**

Ultraviolet (U.V.) absorption spectroscopy introduction- (Beer-Lambert law), molar absorptivity, analysis of UV spectra, types of electronic transitions effect of conjugation. Concept of chromophores and auxochrome, Bathochrome, hypsochrome, hyperchrome, hypochromic shifts-UV spectra of conjugated compounds, Infrared (IR) Absorption spectroscopy-introduction, Hooke's law, Selection rules, intensity and IR bands, measurement of IR spectrum time characteristic absorption of various fundamental band interpretation of IR spectra of simple organic compounds.

**Section-II**

**3. Problems based on spectroscopy**

**(4 Hrs.)**

Problems pertaining to the structure elucidation of simple organic compounds using UV, IR and PMR spectroscopic techniques.

**4. Organosulphur Compounds**

**(3 Hrs.)**

Nomenclature, structural features, Methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine.

**5. Synthetic Polymers (4 Hrs.)**

Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers.

Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes. Natural and synthetic rubbers.

**6. Organic Synthesis via Enolates (4 Hrs.)**

Acidity of  $\alpha$ -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.

Alkylation of 1,3-dithianes. Alkylation and acylation of enamines.

**Section–III**

**7. Carbohydrates (8 Hrs.)**

Classification and nomenclature. Monosaccharides, mechanism of osazone formation, interconversion of glucose and fructose, chain lengthening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threo diastereomers. Conversion of glucose into mannose. Formation of glycosides, ethers and esters. Determination of ring size of monosaccharides. Cyclic structure of D(+)-glucose. Mechanism of mutarotation.

**Structures of ribose and deoxyribose**

An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

**8. Amino Acids, Peptides, Proteins and Nucleic Acids (7 Hrs.)**

Classification, structure and stereochemistry of amino acids. Acid-base behaviour, isoelectric point and electrophoresis. Preparation and reactions of  $\alpha$ -amino acids.

Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid-phase peptide synthesis. Structures of peptides and proteins. Levels of protein structure. Protein denaturation/renaturation.

Nucleic acids : Introduction. Constituents of nucleic acids. Ribonucleosides and ribonucleotides. The double helical structure of DNA.

**Books Suggested :**

1. Spectrometric Identification of Organic Compounds by Robert M. Silverstein, Francis X. Webster, David J. Kiemle, David L. Bryce ; **Publisher:** Wiley, 1981
2. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
3. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
4. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: New Age International, 1985, Vols. I, II, III.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Solomons, T.W., Fundamentals of Organic Chemistry; 5th edition, Pubs: John Wiley & Sons, 1997.
7. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.

**SEMESTER-VI**  
**CHEMISTRY (PHYSICAL CHEMISTRY-B)**  
**(THEORY)**

**Time: 3 Hrs**  
**45 Hrs. (3 Hrs./week)**

**Marks: 35**

**The question paper shall consist of two parts as detailed below:-**

**Part-A :- (Compulsory)**

It shall consist of 8 very short answer type questions (Q. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed  $1/3^{\text{rd}}$  the page. Each question will be carrying one mark.  
**8 X 1 = 8 Marks**

**Part-B :-**

It shall consist of three sections (Section 1, II & III). It shall consist of 9 questions (Q. Nos. 9 to 17) from the entire syllabus. Each question will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question will be carrying  $4\frac{1}{2}$  marks.

**6 X  $4\frac{1}{2}$  = 27 Marks**

**Section-I**

**1. Quantum Mechanics-I**

**(15 hrs.)**

Black-body radiation, Planck's radiation law, Photoelectric effect, heat capacity of solids, Bohr's model of hydrogen atom (no derivation) and its defects, Compton effect.

de Broglie hypothesis, Heisenberg's uncertainty principle, Sinusoidal wave equation, Hamiltonian operator, Schrodinger wave equation and its importance, physical interpretation of the wave function, postulates of quantum mechanics, particle in a one dimensional box, quantization of energy levels, extension to two and three dimensional boxes, degeneracy.

**Section-II**

**2. Quantum Mechanics-II**

**(15 hrs.)**

Simple harmonic oscillator model of vibrational motion, setting up Schrodinger equation and discussion of solution and wave functions. Rigid rotator model of rotation of diatomic molecules transformation to spherical polar coordinates spherical harmonics and their discussion. Qualitative investigation H-atom, setting up Schrodinger equation, radial and angular part, radial distribution functions of 1s, 2s, 2p, 3s, 3p and 3d.

**Section-III**

**3. Solid State**

**(8 Hrs.)**

Definition of space lattice and unit cell, Law of crystallography- (i) Law of constancy of interfacial angles, (ii) Law of rationality of indices, (iii) Symmetry elements in crystals.

X-ray diffraction by crystals. Derivation of Bragg's Law in Reciprocal space. Determination of crystal structure of NaCl, KCl by use of Powder method; Laue's method.

#### 4. Photochemistry

(7 Hrs.)

Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry: Grothus–Drapper law, Stark–Einstein law, Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non–radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions–energy transfer processes (simple examples).

#### Books Suggested :

1. Atkins, P., Paula, J.de, Atkins, Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Company Inc., 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan of India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; I edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems, Pubs: Wiley Eastern Ltd., 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs : Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W.J., Basic Physical Chemistry; Pubs : Prentice Hall of India Pvt. Ltd., 1983.
10. Metz, C.R., Theory and Problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book Company, 1989.
11. Banwell, C.N., McCash, E.M., Fundamentals of Molecular Spectroscopy; 4th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 1999.
12. Atkins, P. Friedman, R., Molecular Quantum Mechanics; 4th edition Pubs: Oxford University Press, 2007.
13. Levine, I.N., Quantum Chemistry; 5th edition, Pubs: Prentice Hall International Inc., 2000.
14. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
15. Inorganic Chemistry, A.G. Sharpe, ELBS.

**SEMESTER-VI  
CHEMISTRY  
(PRACTICAL)**

**Duration 3½ Hrs.**

**6 Period/week  
M. Marks: 30**

**(I) Organic Chemistry Laboratory Techniques**

**(a) Column Chromatography**

- Separation of o & p nitrophenol
- Separation of Leaf pigments from Spinnach leaves
- Separation of o & p nitro aniline
- Separation of dyes.

**(b) Synthesis of Organic Compounds**

- Preparation of p-nitroacetanilide
- Preparation of p-bromoacetanilide
- Green Chemistry Experiment: Preparation of benzoic acid from Benzyl-using green approach.
- Preparation of Methyl Orange, Methyl Red
- Preparation of benzoic acid from benzyl-using green approach

**Practical Examination**

1) Column Chromatography	07
2) Organic Synthesis	16
3) Viva-Voce	04
4) Note Book	03

**Books suggested:**

1. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
2. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
3. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.

**SEMESTER–VI****PHYSICS****PAPER–A: NUCLEAR PHYSICS  
(THEORY)****Time: 3 Hours****Marks: 35****Total Teaching Hrs: 45(3h/week)****Pass Marks: 35%****Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT–I**

**I. Nuclear Properties:** Constituents of nucleus, non-existence of electrons in nucleus, Nuclear mass and binding energy, features of binding energy versus mass number curve, nucleus radius, angular momentum and parity, nuclear moments: magnetic dipole moment and electric quadrupole moment, properties of nuclear forces, Yukawa theory.

**UNIT–II**

**II. Radioactive Decays:** Modes of decay of radioactive nuclides and decay Laws, radioactive series and displacement law, radioactive dating, constituents of Cosmic rays, Alpha decay: Gamow's theory of alpha decay, barrier penetration as applied to alpha decay, Geiger Nuttal law, Beta decays:  $\beta^-$ ,  $\beta^+$  and electron capture decays, Neutrino hypothesis and its detection, parity violation in  $\beta^-$  decay, Gamma transitions: Excited levels, isomeric levels, Gamma transitions, internal conversion.

**UNIT–III**

**III. Nuclear Reactions:** Types of nuclear reactions, reactions cross section, conservation laws, Kinematics of nuclear reaction, examples of nuclear reactions, Q-value and its physical significance, compound nucleus, level width.

**UNIT–IV**

**IV. Nuclear Models:** Liquid drop model, semi-empirical mass formula, condition of stability, evidence for nuclear magic numbers, Shell Model, energy level scheme, angular momenta of nuclear ground states, parity and magnetic moment of nuclear ground states.

**TUTORIALS:** Relevant problems on the topics covered in the course.

**Reference Books:**

1. Basic Ideas and Concepts in Nuclear Physics by K. Hyde
2. Introduction to Nuclear Physics : H.A. Enge
3. Nuclear Physics : I. Kaplan (Addison Wesley)
4. Nuclei and Particles by E. Segre

**SEMESTER–VI****PHYSICS****PAPER–B: RADIATION AND PARTICLE PHYSICS  
(THEORY)****Time: 3 Hours****Marks: 35****Total Teaching Hrs: 45(3h/week)****Pass Marks: 35%****Instructions for the Paper Setters:**

There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

**UNIT–I**

**I. Interaction of Radiation and Charged Particles With Matter:** Energy loss of electrons and positrons, Positrons annihilation in condensed media, Stopping power and range of heavier charged, derivation of Bethe-Bloch formula, interaction of gamma rays with matter.

**UNIT–II**

**II. Nuclear Radiation Detection:** Gas-filled detectors, proportional and Geiger-Mueller counters, Scintillation detectors, semiconductor detectors, Cherenkov effect, solid state nuclear track detectors, bubble chambers, nuclear emulsions.

**UNIT–III**

**III. Accelerators:** Accelerators, linear accelerators, cyclic accelerators: cyclotron, synchrocyclotron, betatron, electron and proton synchrotron, phase stability, colliding beam machines: introduction to Large Hadron Collider and Fermilab Tevatron.

**UNIT–IV**

**IV. Elementary Particles:** Historical introduction, fermions and bosons, particles and antiparticles, Classification of particles, types of interactions, electromagnetic, weak, strong interactions, gravitational interactions, Quantum numbers and conservation laws, isospin, charge conjugation, Introduction to quarks and qualitative discussion of the quark model, high energy physics units.

**TUTORIALS:** Relevant problems on the topics covered in the course.

**Reference Books:**

1. Basic Ideas and Concepts in Nuclear Physics by K. Hyde
2. Introduction to Nuclear Physics : H.A. Enge
3. Nuclear Physics : I. Kaplan (Addison Wesley)
4. Nuclei and Particles by E. Segre
5. Introduction to High Energy Physics by D.H. Perkins
6. Elementary Particles by I.S. Hughes

**SEMESTER–VI**

**PHYSICS**

**(PRACTICAL)**

**Marks: 30**

**General Guidelines for Practical Examination:**

- I. The distribution of marks is as follows :
  - i) One experiment **15 Marks**
  - ii) Brief Theory **5 Marks**
  - iii) Viva–Voce **5 Marks**
  - iv) Record (Practical file) **5 Marks**
- II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
- III. Number of candidates in a group for practical examination should not exceed 12.
- IV. In a single group no experiment be allotted to more than three examinee in any group.

**List of Experiments**

- i. To trace the B-H curves for different materials using CRO and find the magnetic parameters from these
- ii. To study the stabilization of output voltage of a power supply with Zener diode.
- iii. To draw output and mutual characteristics of an FET (Experiments) and determine its parameters.
- iv. To set up an oscillator and to study its output on CRO for different C values.
- v. To draw the plateau of a GM counter and find its dead time.
- vi. To study the statistical fluctuations using GM counter.
- vii. To study the absorption of beta particles in aluminium using GM counter and determine the absorption coefficient of beta particles from it.
- viii. To study the characteristics of a thermistor and find its parameters.
- ix. To study the response of RC circuit to various input voltage (square, sine and triangular).

**SEMESTER–VI****HOME SCIENCE****FOODS AND NUTRITION & CHILD DEVELOPMENT–II  
(THEORY)**

**Time: 3 Hrs.**  
**Periods: 6 Hrs./week**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:**

The question paper will consist of five sections A, B, C, D & E. Section A, B, C, D will have two Questions from the respective sections of the syllabus and will be of 12 marks each. Section E will consist of short type questions covering the entire syllabus uniformly and will be of 12 marks.

**Instructions for the Candidates:**

Candidates are required to attempt one question each from section A, B, C, D and section E is compulsory

**Section–A****1. Food Adulteration:**

- i) Definition
- ii) Common Adulteration
- iii) Food standards

2. Concept of balanced diet.

3. Classification of food based on the five/seven food groups.

4. Principles of Meal planning.

**a) Planning of Balanced Diets for the Middle Income Group for the following:**

- i) Pre-school children
- ii) School going
- iii) Adolescents
- iv) Adult-male and female (only moderate worker)
- v) Old age
- vi) Pregnancy
- vii) Lactation

### Section–B

- 5. Therapeutic Diets & Modification of Normal Diets:**
- Principles of Therapeutic Diets
  - Concept of Soft, Bland, Liquid Diets with examples.
- 6. Therapeutic diets in the following conditions with principles involved:**
- Fever
  - Constipation
  - Diarrhea
  - High Blood Pressure/Hypertension
  - Diabetes Mellitus

### Section–C

- 7. Social Development:**
- Stages of Social Development
  - Pattern of Social Development
  - Role of Family and School in the Development of the Child.
- 8. Play:**
- Significance of Play
  - Types of Play
  - Play Materials/Equipment required for various age group.
9. Common Behavior Problems and their Remedies–Bed Wetting, Thumb Sucking, Nail Biting, Temper-Tantrums.

### Section–D

- 10. Pregnancy:**
- Signs and Symptoms of Pregnancy
  - Discomforts
  - Complications
  - Care During Pregnancy
  - Methods of Family Planning in Brief
- 11. Pre Natal Development:**
- Stages of Pre Natal Development
  - Factor Affecting Pre Natal Development
- 12. Feeding of the Infant**
- Importance and Process of Breast Feeding
  - Bottle Feeding
  - Weaning
  - Important Weaning Foods
  - Importance of Weaning

**SEMESTER–VI**

**HOME SCIENCE**

**FOODS AND NUTRITION**

**(PRACTICAL)**

**Time: 3 Hours**

**Practical Marks: 40**

**Teaching: 6 Periods/week**

**Note: One Group will consist of 15 Students.**

1. Planning Calculation of Calories, Proteins, Fats and Carbohydrates. Preparation of diets for the following:
  - a) Pre-School child
  - b) School going/packed lunch
  - c) Adolescence
  - d) Adult (Man & Woman) moderate worker pregnancy and lactation diets.
2. Cooking and serving of the following: Invalid cookery: soft, liquid, fluid diets.
3. Low calories recipe (five)
4. Low cost recipe (five)
5. Enhancing Nutritive value (five).

**List of Books:**

1. Applied Nutrition, R. Rajalakshmi, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Principles of Nutrition-Dietetics, Dr. M. Swaminathan, The Bangalore Printing and Publishing Co. Ltd., 88, Mysore Road, Bangalore.
3. Food & Nutrition, By Educational Planning Group, Arya Publishing House, Karol Bagh, New Delhi-5.
4. Normal and Therapeutic Nutrition, By Corinne H. Robinson, Marlya R. Lowler Macmillan Publishing Co., New York, Collier Macmillan Publishers, London.

5. Nutritive Value of Indian Foods:

C. Gopalen B.V.

Rama Sastri S.C.

Balasubramaniam

National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, India.

**List of Books Recommended for Child Development**

1. Human Development, Graing J. Graig, Fifth edition, 1989, Prentice Hall, Englewood Cliffs, New Jersey, 07632.
2. The Modern Parents Guide to Baby and Child Care–Violet Broadribb, R.N.H.S. & Henry F, Loe, M.E. 1973, Macdonald's London.
3. Good House Keeping' Baby V Book–The Good Housekeeping, 12th ed., 1959.
4. These are your children–Dadys Gardner Jenkins and Helen Shacter, 4th ed. Scott. Foresman and Co. Glenview Illinios.

**SEMESTER–VI****COSMETOLOGY (VOCATIONAL)****(THEORY)**

**Time: 3 hrs.**  
**Periods/Week: 4**

**Max. Marks: 100**  
**Theory Marks: 35**  
**Practical Marks: 50**  
**College Lab Training Marks: 15**

**Instructions for the Paper Setters:**

**Note: There will be 2 sections.**

**Section–A:** It will consist of 5 short type questions, and candidate will be required to attempt 3 of them. Each question carry 5 marks each.

**Section–B:** It will consist of 4 essay type questions, and candidate will be required to attempt 2 of them. Each question carries 10 marks each.

**Note:** Lab training should be taken in college cosmetology lab. And report with picture profile should be submitted by each student with the remarks of lab instructor.

**COURSE CONTENTS:****1. Salon Management**

- a) Salon Planning
- b) Types of Salon Ownership
- c) Record Keeping
- d) Types of Services Offered, Types of Employers
- e) Professional Ethics as an employee, co-worker, as an operator

**2. Safety Precautions**

- a) Health and safety risk
- b) Accidents due to chemicals, electric equipments, services
- c) Consultation
- d) Emergency Procedure
- e) First Aid in Salon

**3. Chemical Treatment of Hair**

- a) Permanent waving Procedure with the knowledge of hair porosity
- b) Classification of hair colouring: Application of temporary hair colour, semi-permanent hair colour and permanent hair colour

**SEMESTER–VI**

**COSMETOLOGY (VOCATIONAL)**

**(PRACTICAL)**

**Time: 4 Hrs.**

**Periods/Week: 6**

**Marks: 50**

**1. Wigs and hair pieces**

- a) Wig materials
- b) Wig Construction
- c) How to attach hair pieces?
- d) How to clean and care for and hair pieces?

**2. Hair Colouring**

- a) Understanding colour
- b) International colour code
- c) Knowledge and Usage of Permanent Hair colour
- d) Highlightening Procedure

**SEMESTER–VI****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****COMMUNITY NUTRITION  
(Theory)****Time: 3 hrs.****Max. Marks: 100****Theory: 60****Practical: 40****Pds – 6 Pds/Week****Instruction for the paper setter.**

- 1) Theory paper will be of 3 hrs duration.
- 2) Question paper should cover all the topics of the syllabus.
- 3) There will be 8 questions. Students are to attempt 5 questions (12 marks each question).
- 4) Question 1 is compulsory which contains short answer type questions.

**Objectives :-**

To impart nutrition education to vulnerable group of community.

**Unit–I**

1. Concept of community, health, malnutrition, maternal and infant mortality, morbidity, nutritional status.
2. Major nutritional problems prevalent in India - Protein - energy malnutrition, iron deficiency anemia, Vit - A deficiency, iodine deficiency disorder, Vit - D and calcium deficiency, floursis.

**Unit–II**

3. Malnutrition and Infection - Nutritionally relevant infection and infestation.
4. Effect of malnutrition on defense mechanism.
5. Effect of infection on nutritional status and growth and development.

**Unit–III**

6. Assessment of nutritional status using different methods
  - a) Anthropometric measurement, standards for comparison age assessment, weight, height, skin folds, arm, head and chest circumference, use of growth chart.
  - b) Clinical sign and symptoms of malnutrition, classification of clinical sign and symptoms methods of reporting results.
  - c) Biochemical assessment - most commonly used biochemical methods and their standard ranges.
  - d) Diet Surveys - Population sampling, methods of dietary survey points requiring special attention, adult consumption unit analysis of diet survey data

#### **Unit–IV**

7. Channels of nutrition education in the community, Nutrition education method - lectures and Demonstration, workshops, films, posters, charts, exhibition, books, pamphlets, newspaper, radio & television, power point-presentations.
8. Planning and implementation of Nutrition education programme, objective, selecting of topic, and audio visual aid for target group.

#### **Unit–V**

9. Method of enhancing nutritive value of food - Supplementation, sprouting, fermentation, fortification enrichment.
10. Food Fadism and Faculty Food habits.

#### **Unit–VI**

11. National Nutrition programme & policies.
  - a) Integrated Child Development Services. (ICDS)
  - b) Applied Nutrition Programme. (ANP)
  - c) Special Nutrition Programme. (SNP)
  - d) Mid-day meal Programme. (MMP)
  - e) Balwadi Nutrition Programme. (BNP)
12. Role of National and international agencies in community Nutrition.
  - a) Indian council of Agriculture Research. (ICAR)
  - b) Indian council of Medical Research. (ICMR)
  - c) Central Food Technological Research Institute, Mysore. (CFTRI)
  - d) National Institute of Nutrition, Hyderabad. (NIN)
  - e) Food and Agriculture organization. (FAO)
  - f) World Health organization. (WHO)
  - g) United Nations Children's Fund. (UNICEF)
  - h) CARE.

**SEMESTER–VI**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**COMMUNITY NUTRITION  
(Practical)**

**Time: 3 hrs.**

**Pds – 6 Pds/Week**

**Marks: 40**

**Instruction for the paper setter.**

**Note :-** Paper will be set on the spot by the examiner practicals

1. Cook following receipt and calculate their cost and nutritive value.
  - a) Low cost energy and protein rich recipes.
  - b) Low cost iron rich recipes.
  - c) Low cost calcium rich recipes.
  - d) Value addition of cereal & pulses.
  - e) Weaning foods
2. Assessment of nutritional status of vulnerable group using anthropometry/dietary surveys. Project report will be judged by the external examiner.
3. Development of audio-visual aids for imparting nutrition education- eg. charts, posters, flashcards and power-point presentation.
4. Planning, implementation and evaluation of nutrition education for specific target groups.
5. Visit to see the functioning of mid-day meal programme in schools or any health oriented programme.

**Reference Books:-**

Food and Nutrition by Dr. M. Swaminathan.

**SEMESTER–VI**  
**FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)**

**HISTORY COSTUMES OF INDIA & WORLD–II**  
**(THEORY)**

**Time: 3 Hrs.**  
**Periods/week: 4**

**Max. Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**General Instructions for the Paper Setters:-**

The question paper consists of eight questions, out of which student will attempt five.  
All questions carry equal marks.

**1. Historic Costumes of India and World:**

- a) Rome
- b) Asiatic

**2. Traditional Costumes of the following States of India:**

- a) Gujarat
- b) Manipur
- c) Bengal
- d) Kerela
- e) Karnataka

**3. Traditional Textiles of India:**

- a) Irkal & Paithani of Maharashtra
- b) Pochampali of Andhra Pradesh
- c) Sanganeri prints of Rajasthan
- d) Kanchipuram sarees of Tamil Nadu

**SEMESTER–VI**  
**FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)**

**ADVANCE DESIGNING, CONSTRUCTION & DRAPING–II**  
**(PRACTICAL)**

**Time: 4hrs.**  
**Periods/Week: 2x6**

**Marks: 60**

**Part–I**

**Design Draft and Construct following:**

1. Jacket/ Coat.
2. Evening Gown/ Formal Indian Dress.

**Part–II**

1. Draping of Skirt Block Front.
2. Draping of Skirt Block Back
3. Draping of Cowl Neckline

**General Instructions to the Paper Setter:**

1. Design any one garment from syllabus on paper bag–Front & back, Adaptation to be made from sloper, Cutting & Placement, Construction and finishing of garment.

**Marks: 40**

2. Draping of any block.

**Marks: 20**

**Note: Please send the material list.**

**SEMESTER–VI**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**  
**Lectures/week: 6**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:**

Ten questions will be set; students are required to attempt any 6, carrying 10 marks each.

**Course Contents:**

**Community Outreach Programmes**

- Parent and community involvement
- Preschool teacher education in India
- NCTE courses for teachers education in early childhood education
- Pre-primary teacher education curriculum
- Women nurtures and care takers
- Parent participation in school

**Issues related to Early Childhood Care and Education**

- Global issues and specific issues related to India
- Growth and development of pre-school teachers education in India
- Government programmes
- National thrust in global context
- Professional training in childhood
- Future trends in early childhood care and education

**SEMESTER–VI**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hrs.**  
**Lectures/Week: 4**

**Marks: 40**

**Instructions for the Paper Setters:**

Paper will be set on the spot by the examiner.

**Distribution of marks for practical examination**

Written Practical:	<b>10 Marks</b>
Class Performance:	<b>10 Marks</b>
Practical File:	<b>5 Marks</b>
Oral Examination:	<b>5 Marks</b>
Preparation of Activity Material:	<b>10 Marks</b>

**Course Contents:**

- \* Formation of PTA.
- \* Working out strategies for community involvement in ECE programmes
- \* Preparation of two play material from indigenous/waste products
- \* A visit to balwadi school for assessing the curriculum of children

**References:**

1. Swaminathan, Mina. The First Five Years: A critical perspective on Early Childhood Care and Education in India, Sage Publications, New Delhi.
2. Government of India 1986. A Guide Book for Anganwadi Workers, New Delhi: Department of Women and Child Development, Ministry of Human Resource Development.
3. Sciarray, D.A. and Dorsery, A.G. 1979. Developing and Administering a Child Care Centre, Honglton Mifflin Company, Boston.
4. Desai, A.N. helping the Handicapped: Problems and prospects, APH Publishing Co., New Delhi
5. Grewal, J.S (1984) Early childhood education, Agra National Psychological corporation.
6. Guide to Activities in creative Drama and Puppetry, (1994) CHETNA (Gujarat).

**SEMESTER–VI**

**FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)**

**FSQC–11: FOOD PLANT LAYOUT & MANAGEMENT (THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

Instructions for the Paper Setters: Question paper will cover both the main topics and divided into three parts. Each part will contain at least two questions and students will be asked to attempt five questions in all with at least one from each part and not more than two from any part.

**PART–I**

Importance of a plant layout selection of site and layouts of different food industries, selection of equipment, machinery and building material, selection and planning of manufacturing process and service facilities, maintenance and replacement, depreciation of machinery, management set up in a plant.

**PART–II**

Market and Consumer Research, Needs and types of Foods consumption trends. Economics, Psychological, Anthropological and Sociological dimensions of food consumption pattern. Trends in social change and its role in diet pattern. Using social trends as a framework in new product innovation. Food situation in India and outside. Trapping the unconventional post-harvest losses and prospects for food processing for export.

**PART–III**

Traditional foods-Status and need for revival in the context of westernized non-traditional foods, urbanisation and such factors. Product Development: Primary Processing, Secondary Processing, Types of products e.g. Quick cooking, fast foods, fabricated food, convenience foods.

**Recommended Books:**

1. Principle of Food Sanitation by Marriott, 5th ed., 2006, CBS Publishers, New Delhi.
2. Food Processing Waste Management by Green JH and Kramer A, 1979, AVI Publishers, USA.
3. Food Science by Potter NN, 5th ed., 2006, CBS Publishers, New Delhi.

**SEMESTER–VI**

**FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)**

**FSQC–12: FOOD PLANT LAYOUT & MANAGEMENT (PRACTICAL)**

**Marks: 25**

**List of Practicals:**

1. Calculation of depreciation of machinery and processing costs.
2. Determination of B.O.D./COD.
3. Preparation of layout and process diagram of potato crisp manufacturing plant.
4. Preparation of layout and process diagram of Jam/Marmalade manufacturing plant.
5. Preparation of layout and process diagram of Bread making plant.
6. Preparation of layout and process diagram of a dairy industry.
7. Preparation of layout and process diagram of wine making unit.
8. Preparation of layout and process diagram of a modern slaughter house.
9. Preparation of layout and process diagram of a confectionary unit.
10. Determination of sanitary status of plant equipment.
11. Visit to various food industries.

**SEMESTER–VI**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER–A: THEORY**

**Time: 3 Hrs.**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 25 + 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

**OUTLINES OF TEST**

**Note:**

- 50 Marks for the theory paper and 25 marks for each practical.
- The question paper will cover the entire syllabus.
- Questions should be based on world famous painting and sculptures whose slides are easily available.
- Question paper should cover the syllabus uniformly.
- The paper setter should set the paper in two sections section A and B.
- The division of the marks will be as under:

**Section A:** 25 marks for 25 short answer questions. Each question carries 1 mark.

**Section B:** 25 marks for 5 questions. The examiner will set 8 questions. The candidate will attempt 5 questions of 5 marks each. Compartment candidates in the subject of Fine Arts will appear only in theory paper during supplementary exam. Previous marks of practical paper will be considered for the aggregate.

**Indian Painting:**

- Impact of British on Indian Art- Company School
- Bengal School- Abanindranath Tagore
- Contemporary Art- Rabindranath Tagore, Amrita Shergill, Jamini Rai
- S. Sobha Singh, Dhanraj Bhagat, K.K. Hebbar, M.F. Hussain, Satish Gujral.
- Kalighat Painting

**SEMESTER–VI**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER–B: LANDSCAPE PAINTING  
(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

On the spot landscape painting. Emphasis should be given on perspective, Colour and its application in harmony.

**Medium:** Any medium

**Size:** ½ Imperial

**SEMESTER–VI**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER–C: FULL LIFE DRAWING  
(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Rendering of full life study should be done in any medium. Emphasis should be given to structure, volume, proportion, tones and texture.

**Medium:** Any medium

**Size:** ½ Imperial

Candidates will submit-

- (i) 5 sheets of each paper
- (ii) Sketch book containing 50 sketches.

**SEMESTER–VI**

**PAPER–A: HISTORY OF ART**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:-**

- Note:** (a) The question paper should cover entire syllabus. It may contain very specific short answer questions.
- (b) The paper-setter should set 15 questions in all. Students will attempt 10 questions of 5 marks each.

History of European Painting and sculpture from C. 1850 onwards-.

Impressionism & Post –Impressionism

Cubism

Expressionism

Abstract Expressionism

Surrealism

**SEMESTER–VI****PAPER–B: HISTORY OF ART****Time: 3 Hours****Marks: 50****Instructions for the Paper Setters:-**

- Note:** (a) The question paper should cover entire syllabus. It may contain very specific short answer questions.
- (b) The paper-setter should set 15 questions in all. Students will attempt 10 questions of 5 marks each.

Theory and Principles of Art and its appreciation

.Aesthetic approach of the Indian and the Western Art

Terms-Form, Content

Abstraction in art

Realism and Naturalism

Functions of art.

**SEMESTER–VI**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

1. Enameling
2. Chasing and Repouse
3. Flexible Shaft
4. Riveting
5. Sand Blasting
6. Lowering and Raising the Karat of Gold and process of Gold electroplating.

**SEMESTER–VI**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(PRACTICAL)**

**Marks: 50**

1. Domestic Jewellery - 3 Final Designs

2. Export Jewellery -3 Final Designs

3. Exercise on:

a) Chasing

b) Repouse

Development of Bangles, Bracelets, Ring etc.

Through metals by using above techniques

## SEMESTER–VI

### STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL) (THEORY)

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

#### Instructions for the Paper Setters:

Total No. of questions to be set: 20

Total No. of questions to be attempted: 12

Question paper is divided in two parts.

**Section–A:** It will consist of 16 questions. Student will attempt 10 questions. Each question will carry three marks. **(Total: 30 Marks)**

**Section–B:** It will consist of 4 questions. Student will attempt any 2 question. Answer will carry ten marks. **(Total: 20 Marks)**

#### Course Contents:

1. Characteristics of sound wave and its propagation.
2. Acoustics, Echo, R.T. Decibels etc.
3. Quality of sound, Frequency reference, S.N ratios distortions.
4. Directional response and polar diagram.
5. Factors governing the selection of mikes.
6. Types of cables and connectors and their uses.
7. Magnetic recording principles.
8. Tape recorders and playback machines.
9. Audio tapes.
10. Post production–Editing, sucking laying tracks.
11. Mixing of sound.
12. Monitoring.
13. Difference in the recording, editing and mixing for different media.
14. Sound recordists role in a production crew.

#### Suggested Readings:

Sr. No.	Book Name	Author
1.	Sound: A Question and Answer Book (Fact Finders)	Fiona Bayrock
2.	Audio Mastering: Essential Practices	Jonathan Wyner

**SEMESTER–VI**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)**

**AUDIO VISUAL  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Instructions for the Paper Setters:**

1. The paper will be set by the external examiner on the spot considering the syllabus.
2. Creative work on the part of the students is to be emphasized.  
Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. as desired by the examiner.

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by Internal Examiner as per requirement.

**Course Contents:**

1. On slide editing tables.
2. Learn to operate the following equipment:-
  - a) Audio Cassette Player
  - b) Amplifier for Recording
3. Sound Recording
  - a) Use of Microphone
  - b) Cassette Player
  - c) Cassette recording with synch
  - d) Sound Mixer
  - e) Amplifier Monitoring

4. Sound and Narration editing using the following equipment:-
- a) Cassette Player
  - b) Cassette Recorder
  - c) Amplifier
  - d) Sound Making and Channel
  - e) Operation of Slide Projector
  - f) Sound Making & Channel
  - g) Operation of Slide Projector
  - h) Dissolve Units

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Sound: A Question And Answer Book (Fact Finders)	Fiona Bayrock
2.	Audio Mastering: Essential Practices	Jonathan Wyner

**SEMESTER–VI**  
**APPLIED ARTS**

**ART APPRECIATION AND ADVERTISING**  
**(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:**

1. No. of questions to be set: 15
2. No. of questions to be attempted: 10
3. The questions are to be equitably distributed among all the topics of the Syllabus.
4. Each question will carry 5 marks.

**Course Contents:**

- a. Fine Screen
- b. Mechanical Tint
- c. Screen Size
- d. Reverse
- e. Negative, Positive
- f. Bleach Out
- g. Spatter
- h. Over Size
- i. Center spread
- j. Bridging the Gutter
- k. Cut Out Blue Tint
- l. Half Tone Process
- m. Doordarshan in Advertising
- n. Art Director
- o. Marketing Executive
- p. Visualizer
- q. Copywriter.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Kleppner's Advertising Procedure	J.Thomas Russel/ Glen Verrill/ Ronald lane
2.	Advertising Principals & Practice VI Edition	William Wells, John burnett, Sandra Morianty
3.	Advertising Manager's Hand Book (Third Edition)	Stansfield

**SEMESTER–VI  
APPLIED ARTS**

**OUTDOOR CAMPAIGN: POSTER AND  
HOARDING (PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**Size: ½ Imperial**

**Medium: Poster Colours**

**Instructions for the Paper Setters:**

1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Limited references while preparing Poster and Hoarding can be taken in case of a Commercial Topic. Logo and writing style of the existing company can be taken from any available source.
4. Any one of the above (Poster and Hoarding) is to be made by the students for the examination

**Instructions for the Students:**

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Size: As required

**Course Contents:**

Topics: Commercial Topics like Coca-Cola, Archies, NIFT, Fashion etc.

Educational topics like Donate Blood, Donate Eyes, Humanity Cause, and Increase Educational Standards etc.

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Art of The Modern Movie Poster	Judith Salavetz, Spencer Drate & Sarowitz
2.	Regular Graphic Design Today	Gestalten

**SEMESTER–VI**

**SCULPTURE**

**(THEORY)**

**Time: 3 hrs**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Note:**

1. The question paper should cover the entire syllabus.
2. The paper setter should set fifteen (15) questions in all and students shall attempt 10 ten questions.
3. The questions can be repeated from previous question paper.

**Chapter – I:**

**Khajuraho Sculpture**

- Introduction ( Shiv Parvati, Apsaras Playing a Flute, Apsaras applying Collyrium to her eyes, Lady with a looking glass, mother & child, Lady writing a love Letter and General Note on Apsaras or sura Sundaries Sculptures )

**Chapter – II:**

Retrospective and Contemporary Indian Sculptors (Biography & their selected works)

**1. Ramkinker Baij**

- Santhal Family,
- Harvester,
- Portait of Abanindranath Tagore

**2. D.P Roy chowdhary**

- Triumph of Labour
- Matrtyr's Memorial
- Sculptor's Father (Potrait)

**3. Pradosh Dass Gupta**

- Volume in three Masses
- Jai Hind
- Mother and Child

**4. Chintamoni Kar**

- Skating the stage
- Park Figure (1949)
- Seated Figure (1960)

**5. Dhanraj Bhagat**

- Flute Player
- Three Women
- Cosmic Man

**6. Sankho Chowdhary**

- Women with Pitcher
- Standing Figure
- Mahatma Gandhi

**7. Satish Gujral**

- Deity Series (1990)
- Prayer (2000)
- The Crucifixion (1981)

**SEMESTER–VI**

**SCULPTURE**

**(PRACTICAL)**

**Time: 6 Hrs**

**Marks: 50**

- |   |       |
|---|-------|
| 1. Terracotta Mural based on Birds, Flora and Fauna (Minimum Size I' x I' (Feet)  | Total |
| No. work–1  |       |
| 2. Head study in clay, modeling from life head only in life size. This work should be produced in plaster of Paris/ cement. (Total No. of work–1) |       |
| 3. Composition in round based on Human Figures/ Animals/ Birds. These work should be produced in P.O.P/ Fiber Glass/ Metal (Total No of work–1)   |       |

**Books Recommended:**

- |   |                                     |
|---|-------------------------------------|
| 1. History of Fine Arts in India and West   | By Edith Tomory                     |
| 2. Indian Art ( A concise History)          | By Roy C Craven                     |
| 3. Satish Gujral (Selected works 1947–2000) | By Lalit Kala Akademi, New Delhi    |
| 4. Indian Sculpture Today (1983)            | By Jehangir Art Gallery Publication |
| 5. Bhartiya Murtikala ka Parichaya          | By Bhim Singh Berval                |
| 6. D.P Roy Chaudhary                        | By Lalit Kala , New Delhi (1973)    |
| 7. Sankho Chaudhary                         | By Lalit Kala , New Delhi (1970)    |
| 8. Ram Kunker Bajj                          | By Lalit Kala , New Delhi (1961)    |
| 9. Chintamani Kar                           | By Lalit Kala , New Delhi (1965)    |
| 10. Prodosh Das Gupta                       | By Lalit Kala , New Delhi (1971)    |

**SEMESTER–VI**

**MUSIC (VOCAL)  
(THEORY)**

**Time: 3 Hours**

**Theory: 3 Periods per week**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as a base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. The paper setter will set **Eight** questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt **Five** questions in all.
5. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
6. Candidate can take Tabla subject along with Music Vocal or Music Inst.

**COURSE CONTENTS:**

1. Historical Development of Indian Music during Modern Period.
2. Method of formation of 72 Thatas of Dakshini Music System of Pt. Vyankat Mukhi.
3. Short notes on the following terms:  
i) Sargam Geet ii) Lakshan Geet iii) Saadra iv) Raag-Malika.
4. Detailed knowledge of following Gharanas of Khayal Gayaki.  
a. Gwalior  
b. Kirana  
c. Agra  
d. Patiala  
e. Delhi
5. Detailed description and notations :-  
i) Jaunpuri ii) Kalavati iii) Bhageshwari
6. Detailed study of the following Talas:  
i) Jhumra ii) Dhammar.
7. Essay writings on the following Topics:  
i) Raag Aur Ras ii) Music & Literature
8. Life & Contribution of the following musicians:  
i) Girija Devi ii) Fayyaz Khan iii) Sumati Mutatkar.
9. Role of devotional music in human life.
10. Contribution of Sri Guru Gobind Singh Ji towards Indian Music.

**SEMESTER–VI**

**MUSIC (VOCAL)  
(PRACTICAL)**

**Time: 20 Minutes for each student**  
**Periods/Week: 9**

**Marks: 50**

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Jaunpuri, Kalavati, Bhageshwari.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Dhammar in any of the prescribed Ragas.
4. One Shabad/Bhajan in any of the Ragas prescribed in the course.
5. Brief Knowledge of Non Detailed Ragas : Jansammohani, Ragageshwari, Asawari
6. Ability to sing a Cinematic Song with the help of Harmonium.
7. Ability to recite Jhumra and Dhammar showing Khali Tali with hand motion in Ekgun, Dhugan Laikaris.
8. Ability to play five alankars on the Harmonium based on the Khamaj Thata.
9. Ability of play theka of Ektaal on Tabla.

**Books Recommended:**

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I,II,III,IV,V.
9. Tantri Nada Pt. Lalmani Mishar.

**SEMESTER–VI**

**MUSIC (INSTRUMENTAL)  
(THEORY)**

**Time: 3 Hrs.**

**Theory: 3 periods per week**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions given to the examiners are as under:–**

1. There should not be more than fifteen students in a batch for practical examination.
2. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
3. The paper setter will set eight questions in all. 1<sup>st</sup> question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions in all.
4. The External Examiner will set question paper for practical on the spot.
5. Candidate can take both subjects i.e. Instrumental music and Vocal music as elective subjects.
6. Candidate can take Tabla subject along with instrumental music or vocal music.

**Course Contents:**

1. Role of media in Indian Music.
2. Short notes of the following musical terms: Kan, Baaj, Jamjama, Murki
3. Life & contribution of the following Musicians:  
i) Nikhil Benerji (Sitar) ii) Panna lal Ghosh (Flute).
4. Formation of 72 Thatas by Pt. Vyankat Mukhi
5. Relation of Raga with Season & Time.
6. Detailed knowledge of Sahayak Nad.
7. Detailed description and notations of prescribed Ragas:  
i) Hameer ii) Vrindavani Sarang iii) Bhairavi
8. Detailed knowledge of following Ragas:–  
i) Kedar ii) Madhmaadh Sarang iii) Bilaskhani Todi
9. Detailed knowledge of the following Talas:  
i) Jhumra ii) Dhamar.
10. Salient features of Gurmat Sangeet.

**SEMESTER–VI**

**MUSIC (INSTRUMENTAL)  
(PRACTICAL)**

**Time: 20 Min. for each student**

**Marks: 50**

**Practical: 9 periods per week**

1. Ability to play 10 Alankars in the Swaras of Bharaivi Thata.
2. One maseet khani Gat in any Raga prescribed in your course Hameer, Vrindavni Sarang & Bhairvi.
3. Rajakhani Gat in each Raga.
4. One Gat in Dhammar Style in the prescribed Ragas.
5. Non detailed Raagas : Bilaskhani Todi, Kedar and Madhmaadh Sarang.
6. Recite Jhumra & Dhamar Tal in Ekgun & Dugan Layakaries.
7. Ability to play Theka of Ektaal on Tabla.
8. Ability to sing a shabad/Bhajan with Harmonium.

**Books Recommended:**

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by PunjabiUniversity, Patiala.
4. Sangeet Vishard Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan Shanti Govardhan.
6. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
7. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh
8. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
9. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

**SEMESTER–VI**

**INDIAN CLASSICAL DANCE  
(THEORY)**

**Time: 3 Hrs**  
**Periods/Week: 3**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters/Examiners:**

1. The paper setter will set eight questions. 1st question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions.

**Course Contents:**

1. Detailed knowledge of Kuchipudi with its historical background, style, costume and music etc.
2. Abhinaya and its bhedas.
3. Guru – Shishya parampara.
4. Thumri in Kathak.
5. Indian and Western Dance.
6. Nayak – Nayika Bhedas.
7. Folk dances of Haryana.
8. **Notation of:**
  - (i) **PANCHAM - SWARI - 15 MATRAS**
    - a) Tatkar in Ekgun, Dugun & Chougun Layakaries.
    - b) Thaata- 1
    - c) Tehai-1
    - d) Amad-1
    - e) Salami-1
    - f) Tora-2
    - g) Paran-1
    - h) Chakardar Paran -1
    - i) Kavita-1
  - (ii) **TEEN – TAAL - 16 MATRAS**
    - a) Tatkar in Ekgun, Dugun & Chougun Layakaries.
    - b) Thaata- 1
    - c) Amad-1
    - d) Salami-1
    - e) Damdar and Bedam Tehai - 1 - 1
    - f) Tora-2
    - g) Paran-1
    - h) Farmaishi Paran -1
    - i) Pramelu
9. Arh layakary in Teen – Taal.
10. Definition and Notation of following Taals in Ekgun, Dugun, Tigun and Chougun Layakaries.
  - (a) Teen Taal
  - (b) Pancham Swari

## SEMESTER–VI

### INDIAN CLASSICAL DANCE (PRACTICAL)

**Time: 20 minutes for each student**  
**Periods/Week: 9**

**Marks: 50**

**Instructions for the Examiners:** The Examiner will set practical paper on the spot.  
**Instructions given to the examiners are as under:**

1. There should not more than fifteen students in a batch for practical examination.
2. Harmonium will be allowed as accompaniment to perform Nagma.
3. Separate practical paper should be set for each class from practical of prescribed syllabus on the spot.

#### **COURSE CONTENTS:**

1. **PANCHAM SWARI TAAL (15 MATRAS)**
  - a) Tatkar in Ekgun, Dugun and Chougun Layakaries.
  - b) Thaat- 2
  - c) Tehai-1
  - d) Amad-1
  - e) Salami-1
  - f) Tora-2
  - g) Paran-1
  - h) Chakardar Paran -1
  - i) Kavita-1
2. **TEEN TAAL (16 Matra)**
  - a) Tatkar in Ekgun, Dugun & Chougun Layakaries.
  - b) Thaat-1
  - c) Amad-1
  - d) Salami-1
  - e) Damdar and Bedam Tehai - 1 - 1
  - f) Tora-2
  - g) Paran-1
  - h) Farmaishi Paran - 1
  - i) Pramelu
3. Padhant of all the Practical material in given Taals.
4. Padhant of all thekas in Dugun & Chougun Layakaries.
5. Kathak Choreography in Tarana.
6. Nagma in Teen Taal and Pancham Swari.
7. Ability to play the theka of Jhaptal on Tabla.
8. Ability to play the theka of a Jhaptal on Tabla.
9. Ability to sing National Anthem on Harmonium.

#### **Books Recommended:**

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.
2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers, New Delhi, 2006.
3. Atihasik Pripekesh Mein Kathak Nritya, Maya Taak, Knishka Publishers, New Delhi, 2005.
4. Nibandh Sangeet, Laxmi Naryan Garg, Sangeet Karyalaya, Hathras, 2004.
5. Kathak Nritya Shiksha Part-I & Part II, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP)

## SEMESTER–VI

### TABLA (THEORY)

**Time: 3 Hours**  
**Theory: 3 periods per week.**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

#### Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examinations.
2. Harmonium will be allowed as accompaniment to perform the Nagma.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for practical paper should also be sent.
4. The paper–setter will set eight questions.. 1st question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate will be asked to attempt five questions.
5. Candidate can take Tabla subject with Vocal or Instrumental Music (Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai, Rabab, Saranda, Taus, Santoor and any other Swar Vadhya to the played on the basis of Indian Classical Music).

#### COURSE CONTENTS:

1. Define and Explain the following musical terms:
  - a. Pitch
  - b. Intensity
  - c. Timbre
2. Importance of Parant & its importance in Tabla.
3. Tabla as Solo Vadan.
4. Notation & description of the following Talas:
  - a. Mat Tal- One Peshkar, Two Kayada, Five Paltas with Tihaai, two Tukdas, two Tihaais, One Farmaishi Paran, One Chakardar Paran, One Rella & Gat.
  - b. Chaar Tal- Two Tukdas, Two Tihaais, Two Paran, Two Rella.
  - c. Dhammar- Two Tukdas, Two Tihaais, Two Paran, Two Rella.
5. Life Sketch & Contribution of the following Musicians:
  - a. Abaane Mistri
  - b. Anuradha Pal
  - c. Yogmaya Shukla
6. Detailed Knowledge of structure & formation of Tabla.
7. Write an Essay on Rhythm Emotion & Mood.
8. Detail knowledge of Percussion Instruments used in Gurmat Sangeet.
9. Sound techniques of Tabla accompanying with different singing styles.
10. Detailed knowledge of western percussion instruments.

**SEMESTER–VI****TABLA  
(PRACTICAL)**

**Time: 20 minutes for each student**  
**Practical: 9 periods per week.**

**Marks: 50**

1. Taal Prescribed: Mat Tal, Chartal & Dhammar.
2. Mat Tal- One Peshkar, Two Kayada, five Paltas with Tihaai, two Tukdas, two Tihaais, One Farmaishi Paran, One Chakardar Paran, Two Rellas & Gat.
3. Chaar Tal- Two Tukdas, Two Tihaais, Two Paran, Two Rellas.
4. Dhammar- Two Tukdas, Two Tihaais, Two Paran, Two Rella.
5. Ability to play Nagma on Harmonium in Mat Tal, Chartal & Dhammar.
6. Ability to play Theka of Vilambit Ektal and Vilambit Tilwara.
7. Practice of playing the above Taals with Vocal and Instrumental performance.
8. Tuning of Tabla.
9. Ability to sing a Shabad/Bhajan with Harmonium.

**Books Recommended:**

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Misher Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Muni Misher, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vishesh Sangeet Karyalaya Hathras, 1994.
6. Tal Parichaie Part I-IV Garish Chandar Srivastav Sangeet Karyalaya Hathras.
7. Tal Parkash Bhagwat Sharan Sharma Sangeet Karyalaya Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita Chitragupta Radha Publication New Delhi 1992.

**SEMESTER–VI****COMPUTER SCIENCE****INFORMATION TECHNOLOGY  
(THEORY)**

**Time: 3 Hours**  
**Periods/Week: 4**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

- Note:** (i) In theory eight questions are to be set in all. The candidates are required to attempt five of them. All questions are to be equal marks.  
(ii) The maximum marks for the paper is 75.  
(iii) As per as possible except in the Computer language papers no programme may be asked in theory papers. Emphasis should be on algorithm development.

**UNIT–I****Data & Network Communication:**

Communication media: Twisted pair, Coaxial, Fibre optics, Wireless(Line of Sight & Satellite), Network Advantages, Types & Topologies, Communication using Network protocol/Network Interface card(NP/NIC), Transmission & Communication protocol/protocol(TCP/IP), Moderns, Types of Operating systems: Multiuser, Multitasking & Multiprogramming and their examples.

**UNIT–II****Information Systems:**

Introduction to IT & its components, What is Information systems, Computer based information systems, Management Information System, Decision Support System, Expert System, Functional Information System, Open Information System, Transaction Processing System, System Development Process & System development Tools. Internet basics, Its uses and Applications.

**Fundamentals of Networking O.S.:**

Introduction to components of various Networking O.S., Case Study of Network Operating System Windows NT.

### **UNIT–III**

#### **Fundamental of Client Server:**

Basics of Client Server model and its applications. Designing a Client Server model by Creating Database Server and networking O.S. Server.

#### **Careers in Computers:**

Role of Programmers, Program analysis, System Analyst, System Administrators, System Managers, System Integrators, DTP Manager & Administrators, MIS Director.

#### **References:**

1. Peter Norton, Introduction to Computers, Glencoe, Macmillan/McGraw Hill. Kroenke, Business Computer System, McGraw Hill.
2. Patric, G.Mckeown, Living with the Computers, 2nd edition, HBT Publishers, USA.
3. Hussain & Hussain, Computer Technology, Applications & Social Implications, PHI.

**SEMESTER–VI**

**COMPUTER SCIENCE**

**INFORMATION TECHNOLOGY  
(PRACTICAL)**

**Marks: 25**

**Periods/Week: 2**

**Note: Practical Marks will include the appropriate weightage for proper maintainance of lab record.**

**SEMESTER–VI****INFORMATION TECHNOLOGY (VOCATIONAL)****SOFTWARE ENGINEERING  
(THEORY)****Time: 3 Hours****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:–**

- (i) In theory eight questions are to be set giving the weightage to all the portions. The candidates are required to attempt any five. All questions are to be equal marks.
- (ii) The maximum marks for the paper will be 75.
- (iii) As per as possible except in the Computer language papers no programme may be asked in theory, papers. Emphasis should be on algorithm development.

**UNIT – I**

System Analysis, Data Modeling, Process Modeling, Network Modeling, Object Modeling, System Design and Construction.

**UNIT – II**

Application architecture and process design, Database design, Input design and Prototyping output design and prototyping.

**UNIT – III**

User interface design and prototyping, Software design, Object– Oriented design, System implementation and support, S/W testing.

**References:**

1. System Analysis and Design Methods by Jeffrey L. Whitten, 7<sup>th</sup> Edition, Tata McGraw–Hill.
2. Pankaj Jalote, “An Integrated Approach to Software Engineering”, 3rd Edition.

**SEMESTER–VI**

**INFORMATION TECHNOLOGY (VOCATIONAL) (VOCATIONAL)**

**SOFTWARE ENGINEERING**

**(PRACTICAL)**

**Marks: 25**

Practical on the basis of Software Engineering

**SEMESTER–VI****COMPUTER MAINTENANCE (VOCATIONAL)****(PROJECT)****Max. Marks: 100****General Instructions:**

1. A software module based on the work done in the entire course is to be developed.
2. The soft copy of the module shall be submitted to the College/Institute till April 30.
3. The software module shall be developed in groups, consisting of at most two students in a group.
4. The respective college shall depute guide(s)/supervisor(s) under whose supervision the software module shall be developed. The guide/supervisor shall clarify that the work done is original & authenticated. The certificate found to be incorrect at any stage shall attract the proceedings against all the stakeholders, as per the University rules.
5. The evaluation of the module shall be done as per the common ordinance of UG/PG w.e.f. 2012–2013 under semester system.

**SEMESTER–VI****COMPUTER APPLICATION (VOCATIONAL)****BUSINESS DATA PROCESSING  
(THEORY)**

**Time: 3 Hrs.**  
**Periods/Week: 4**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:–**

- Note:** (i) Eight questions are required to be set giving the weightage to all the portions. The candidates will be required to attempt any five questions. All questions will carry equal marks.
- (ii) The maximum marks for the paper will be 75.
- (iii) As per as possible except in the Computer language papers no programme may be asked in theory papers. Emphasis should be on algorithm development.

**UNIT–I**

1. Introduction to Data Processing.
2. Need of Computers in Business.
3. Characteristics of Business Organization and Use of computers in various work areas of business.
  - a) Payroll System
  - b) Inventory Control
  - c) Online Reservation
  - d) Computer in Banks
  - e) Computer Application in Educational Institutions
4. Concept of Data Processing Methods with Examples.
  - a) Batch Processing
  - b) Online Systems
  - c) Time Sharing
  - d) Real Time Systems
  - e) Distributed Processing

### UNIT–II

5. File Organization.
  - a) Types of Files (Master, Transaction, Work, Backup, Audit Files)
  - b) File Organization (Serial, Sequential, Indexed Sequential, Direct Access Files).
6. Spreadsheets (Data Analysis Package)
  - a) Introduction to Spreadsheets
  - b) Lotus 123/MS Excel
  - c) Creating a simple worksheet
  - d) Computations in a Worksheet
  - e) Printing the Worksheet
  - f) Graphs
  - g) What if Analysis (Data sort, fill, query, filter)
7. Iterative controls
  - \* Simple Loops (Loop–end loop)
  - \* Numeric FOR Loops
  - \* While Loops

### UNIT–III

8. Intro and Advantages of procedures and functions with examples.
9. Intro to database Triggers
  - \* Creation a database trigger with example
  - \* Enable and disable of database trigger
  - \* Drop a database trigger
10. Developer 2000
  - \* Reports 6.0
  - \* Forms 6.0
11. Utilities
  - \* Export/Import
  - \* SQL
  - \* Loader

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B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–VI) (Session 2018-19)  
(Faculty of Engineering & Technology)

**SEMESTER–VI**

**COMPUTER APPLICATION (VOCATIONAL)**

**BUSINESS DATA PROCESSING**

**(PRACTICAL)**

**Periods/Week: 2**

**Marks: 25**

## SEMESTER–VI

### INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT (VOCATIONAL)

#### Paper – I: C++ (OOP Language)

Time: 3 Hours

M. Marks: 75

**Note 1: In theory eight questions are to be set in all. The candidates are required to attempt five of them. All questions are to be of equal marks.**

**2. The students can use only Non–Programmable & Non–Storage Type Calculators.**

#### UNIT-I

**Getting Started** Introduction, A brief history of C++, Variable, constant, Expression, Statements, Comments and keywords of C++

**Operator:** Arithmetic, Relational, Logical, Assignment, Increment/Decrement, Conditional, Precedence of Operators, Data type, Type Conversion, library function.

**Input / Output Statements:** Inputting using in and outputting using cout statements, Preprocessor directives, Basic program construction.

#### **Decision Making and Looping Statement**

If Statement, If..else statement, nesting of if statement, switch statement, conditional operator statement. While loop, do loop, for loop, nesting of loops, break and continue statement, go to statement.

#### UNIT-II

**Arrays:** Defining an array, array type, array elements, Accessing and averaging array elements, initializing array. String handling, array of strings.

**Functions:** What is a function? Declaring and defining function. Local, global variables, execution of function, Passing argument to function, Return values. Reference arguments. Overloading functions. Inline function and default parameter.

#### UNIT-III

**Object Oriented Programming:** Objects & Classes. Constructor & Destructor. Operator overloading. Overloading unary operators. Overloading binary operators. Data conversion. Pitfalls operator overloading and conversion.

**Inheritance:** Derived class and Base Class. Derived Class Constructors. Overriding member functions. Public and Private inheritance. Types of Inheritance.

**Structures** A simple structure, specifying the structure, defining a structure variable. Accessing Structure member. Other structure features. Structure within structure. Structure and classes. Arrays of structure.

#### **Books:**

1. C++ & Graphics by Vijay Mukhi's
2. Turbo C++ by Robert Lafore.
3. Mastering C++.
4. C++ Programming Language by Schaum's outline series.

**SEMESTER–VI**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**Paper–I: Lab – I: Programming in C++**

**Time: 3 Hrs.**

**Max. Marks: 25**

Practical based on Programming in C++

**SEMESTER–VI****AUTOMOBILE MAINTENANCE (VOCATIONAL)  
(THEORY)****Time: 3 hours****Max. Marks: 60****Periods per week Theory 6**

**Section–A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks i.e. (2 marks); total weightage of the section being 10 Marks.

**Section–B:** It will consist of short answer questions with answer to each question upto 2 pages in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 4 marks; total weightage of the section being 20 marks.

**Section–C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry 15 marks; total weightage of the section being 30 marks.

**UNIT–I**

**Brake System and Brake Services:** Introduction, Purpose of brakes, Requirement of brakes, Brake efficiency, Factor effecting to brakes, Braking forces, Classification of Brakes, Braking force, Classification of Brakes, Braking systems, Method of actuating brakes, Construction of actuating brakes, Construction of disk type brakes, Mechanical brakes, Coiling mechanical break, Hydraulic brakes, Bleeding of brakes, Hill holder, Electric brakes, Brake troubleshooting. Basic concepts of Anti lock braking system.

**UNIT–II**

**Tyre and Wheels Construction and Service:** Wheel assembly, Wheels, Rims, Tyres, Types of tyres, Construction of a tyre, Tyre plies and construction, Tyre sizes, Tubes, Tyre inflation pressure, Schrader valve, Tyre inspection, Desirable tyre properties, Tyre chains, Care and maintance of rims, Tyres and tubes, Tyre rotation, Repair of inner tube, Repair of tyres, Wheels and tyres troubleshooting.

**UNIT–III**

**Tune up and Workshop Setup:** Introduction, Tune up procedure of Engine, Fault finding and troubleshooting in petrol engine and diesel engine, to set up and Automobile workshop and service station, Ways to sell better service.

**SEMESTER–VI****AUTOMOBILE MAINTENANCE (VOCATIONAL)****LAB – II  
(PRACTICAL)****Time: 3 Hours****Total Marks: 40****Periods per week: Practical: 4****Practicals:**

1. Front wheel alignment.
2. Foot Brake Leather opening and fitting.
3. Brake Adjustment.
4. Tie rod opening and fitting.

**References:**

1. Basic Automobile Engineering (Punjabi Edition) Written by C.P. Nakra, Published by Dhanpat Rai and Sons, Jalandhar, (Delhi).
2. Royal Basic Automobile Engineering Written by R.K.Kalia. (Punjabi Edition).
3. Automobile Mechanics (English Edition) Written by William H. Crousa, Donald L. Anglin.

**SEMESTER–VI****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER–K (THEORY)****Time: 3 Hours****Marks: 30****Instructions for the Paper Setters:**

**Section–A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section–B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section–C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT–I**

**Ice Manufacture:** Introduction, Principle of Ice Production, Different Methods of Ice manufacturing, Treatment of Water for making the Ice, Brines, Freezing Tanks, Ice cans, Quality of Ice, General layout of Ice factory

**UNIT–II**

**Food Preservation:** Introduction, Factors contributing to food spoilage, Causes of Food Spoilage.

**UNIT–III**

**Methods of Food Preservation:** Freezing methods of Food preservation, Preservation of Foods with direct contract of liquid CO<sub>2</sub> Freeze Drying, Preservation of Different products, cold storage and commercial cabinets.

**SEMESTER–VI****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)  
PAPER–L (THEORY)****Time: 3 Hours****Marks: 30****Instructions for the Paper Setters:**

**Section–A:** It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

**Section–B:** It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

**Section–C:** It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

**UNIT – I**

**Transport Air Conditioning:** Automobile Air–Conditioning, Railway Air conditioning, Marine Air Conditioning, Air–Crafts, Air–Conditioning

**UNIT – II**

**Commercial Applications:** Introduction, Air conditioning of houses and offices, Air conditioning of Hotels and Restaurants, Air conditioning of departmental stores, Air conditioning of Theatres and Auditorium, Air conditioning of Hospitals.

**UNIT – III**

**Industrial and Special Applications:** Introduction, Design considerations in Bus Air Conditioning, Air conditioning in textile industry, Medical applications, Engineering Applications, Air conditioning of Special Type Building, Ice Rinks.

**SEMESTER–VI****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)****PRACTICAL: LAB–III****Time: 2 Hours****Total Marks: 40****Period Per week Practical: 4****List of Experiments:**

1. To study the service Ice candy plant (small unit)
2. To study the cold storage and layout the cold storage for leakage.
3. To test overload and relay in window unit
4. To find the C.O.P. of an Air conditioner.
5. To study Domestic Refrigerator

**List of Books Recommended:**

<b>Name of Book</b>	<b>Author</b>	<b>Publisher</b>
Refrigeration & Air Conditioning	S.C.Arora	Dhanpat Rai
Refrigeration & Air Conditioning	Dowkundwar Khurmi	Katson Publication
Refrigeration & Air Conditioning	Sarao, Gaabi Singh	Satya Prakashan.

**SEMESTER-VI**

**RELIGIOUS STUDIES (ਧਰਮ ਅਧਿਐਨ)**  
(ਸਿੱਖ ਇਤਿਹਾਸ ਤੇ ਸੰਸਥਾਵਾਂ)

ਸਮਾਂ 3 ਘੰਟੇ  
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100  
ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ:**

ਪੇਪਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ: ਓ, ਅ, ਏ, ਸ, ਅਤੇ ਹ। ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ 2-2 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੋਵੇਗਾ ਅਤੇ ਹਰ ਇਕ ਪ੍ਰਸ਼ਨ ਦੇ 15 ਅੰਕ ਹੋਣਗੇ। ਭਾਗ ਹ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 4-4 ਅੰਕ ਹੋਣਗੇ।

**ਪ੍ਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ:**

ਭਾਗ ਓ, ਅ, ਏ, ਸ ਵਿਚੋਂ ਕੇਵਲ ਇਕ-ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੈ ਅਤੇ ਭਾਗ ਹ ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ ਹਨ।

**ਭਾਗ (ਓ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ ਤੇ ਸਿੱਖ ਧਰਮ ਦਾ ਆਰੰਭ**

1. ਸਮਕਾਲੀਨ ਪਰਿਸਥਿਤੀਆਂ : ਧਾਰਮਿਕ, ਸਮਾਜਿਕ, ਰਾਜਨੀਤਿਕ
2. ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ ਦੀਆਂ ਉਦਾਸੀਆਂ
3. ਸਿੱਖ ਧਰਮ ਦਾ ਵਿਕਾਸ : ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ ਤੋਂ ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਤੱਕ

**ਭਾਗ (ਅ) ਸਿੱਖ ਧਰਮ ਦਾ ਵਿਕਾਸ : ਗੁਰੂ ਹਰਿਗੋਬਿੰਦ ਤੋਂ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਤੱਕ**

1. ਗੁਰੂ ਹਰਿਗੋਬਿੰਦ ਜੀ ਤੋਂ ਗੁਰੂ ਹਰਿਕ੍ਰਿਸ਼ਨ ਤੱਕ
2. ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ: ਸ਼ਹਾਦਤ ਦਾ ਮਹੱਤਵ ਤੇ ਇਤਿਹਾਸਕ ਕਾਰਣ
3. ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ: ਖਾਲਸਾ ਸਿਰਜਣਾ

**ਭਾਗ (ਏ) ਬੁਨਿਆਦੀ ਸੰਸਥਾਵਾਂ**

1. ਗੁਰਦੁਆਰਾ, ਸੰਗਤ ਤੇ ਪੰਗਤ
2. ਮੰਜੀ ਪ੍ਰਥਾ ਤੇ ਮਸੰਦ ਪ੍ਰਥਾ
3. ਦਸਵੰਧ

**ਭਾਗ (ਸ) ਪ੍ਰਮੁੱਖ ਲਹਿਰਾਂ**

1. ਨਾਮਧਾਰੀ ਲਹਿਰ
2. ਸਿੰਘ ਸਭਾ ਲਹਿਰ
3. ਗੁਰਦੁਆਰਾ ਸੁਧਾਰ ਲਹਿਰ

**ਭਾਗ (ਹ) ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ**

**ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:**

**English:**

1. Ganda Singh (Ed.), *Punjab: Past and Present* (Singh Sabha Issue), Punjabi University, Patiala, 1973.
2. -----, *The Singh Sabha and Other Socio-religious Movements in the Punjab*, Punjabi University, Patiala, 1997.
3. J.N.Farquhar, *Modern Religious Movements in India*, Munshi Ram, Manohar Lal, New Delhi, 1967.

**Punjabi:**

1. ਅਸ਼ੋਕ, ਸ਼ਮਸ਼ੇਰ ਸਿੰਘ, *ਪੰਜਾਬ ਦੀਆਂ ਲਹਿਰਾਂ*, ਅਸ਼ੋਕ ਪੁਸਤਕਮਾਲਾ, ਪਟਿਆਲਾ, 1974.
2. ਗੰਡਾ ਸਿੰਘ (ਸੰਪਾ.) *ਪੰਜਾਬ (ਭਾਈ ਜੋਧ ਸਿੰਘ ਅਭਿਨੰਦਨ ਗ੍ਰੰਥ) ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਕਾਦਮੀ*, ਲੁਧਿਆਣਾ, 1962.
3. -----, ਤੇਜਾ ਸਿੰਘ, *ਸਿੱਖ ਇਤਿਹਾਸ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2013.
4. ਭਗਤ ਸਿੰਘ, *ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ*, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ, 1983.
5. ਭਾਟੀਆ, ਨਰਿੰਦਰ ਕੌਰ, ਜਸਵਿੰਦਰ ਕੌਰ ਢਿੱਲੋਂ (ਸੰਪਾ.), *ਪ੍ਰਮੁੱਖ ਸਿੱਖ ਸੰਸਥਾਵਾਂ*, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2005.
6. ਜਗਜੀਤ ਸਿੰਘ, *ਸਿੰਘ ਸਭਾ ਲਹਿਰ*, ਲਾਹੌਰ ਬੁਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ, 1974.

**SEMESTER–VI**

**PHILOSOPHY**

**OPT. (I) INDIAN METAPHYSICS AND EPISTEMOLOGY**

**Time allowed: 3 hours**

**Max. Marks: 100**

**Lectures to be delivered: 6 per week**

**Pass Marks: 35**

**Note: Instructions for the Paper Setter:-**

The question paper will consist of five sections: A, B, C, D & E. Section A, B, C & D will have two questions from each respective section of the syllabus and each question will carry 15 marks. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40 marks in all, each short answer carrying 4 marks.

**Instructions for the Candidates**

Candidates are required to attempt one question each from the section A, B, C, and D of the question paper and the entire section E.

**Section–A**

1. Introduction and Salient Features of Indian Philosophy.
2. A Brief Introduction of Orthodox and Heterodox Systems.
3. Concepts of Atman and Brahman in Upanishads.

**Section–B**

4. Carvaka Philosophy: Materialism
5. Samkhya School: Purusa and Prakirti.
6. Maya and Avidya (Shankaracharya).

**Section–C**

7. Nyaya Theory of Knowledge: Four Pramanas.
8. Buddhism: Theory of Causation (Pratityasamutpada).
9. Vaisheshika School: Six Categories.

### SEMESTER–VI

#### Section–D

10. Jainism: Anekantvada, Syadvad.
11. Sikhism: Akal Purakh and Jagat Rachna.
12. Yoga Psychology

#### Section–E

Ten short answer type questions.

#### Recommended Readings:

##### English Books

1. Abhedananda Swami, *The Yoga Psychology*, Ramakrishna Vedantaz, Calcutta, 1967.
2. Chatterjee and Datta, *An Introduction to Indian Philosophy*, University of Calcutta, Calcutta, 1968.
3. Daljeet Singh, *Essentials of Sikhism*, Singh Brothers, Amritsar, 1994.
4. Daljeet Singh, *Sikhism, A Comparative Study of its Theology and Mysticism*, Singh Brothers, Amritsar, 2004.
5. Daya Krishna, *Indian Philosophy : A New Approach*, Sri Satguru, Delhi, 1997
6. Gopalan S., *Outlines of Jainism*, Wiley Eastern Ltd. New Delhi, 1975.
7. Heera Bhupinder, *Uniqueness of Carvaka Philosophy in Indian Traditional Thought*
8. Hiriyanna, M., *Outlines of Indian Philosophy*, Reprint, der Ausg. London Allen et Unwin, Motilal Banarsidas, Delhi, 2009.
9. H. Phillips, Stephen, *Classical Indian Metaphysics*, Motilal Banarsidas, Delhi, 1997.
10. Mohanty, J.N., *Classical Indian Philosophy*, Oxford University Press, New Delhi, 2002.
11. Sharma, C.D., *A Critical Survey of Indian Philosophy*, Motilal Banarsidas, Delhi, 1964.
12. Sher Singh, *Philosophy of Sikhism*, Sikh University Press, Lahore, 1945.
13. Singh Lal A., *Yoga Psychology; Methods and Approaches*, Varanasi
14. Talib, Gurbachan Singh (ed.), *Jainism*, Punjabi University, Patiala, 1986.

### SEMESTER–VI

#### Punjabi Books

1. ਹਿਰਿਆਨਾ, ਐਮ. (ਅਨੁ. ਪ੍ਰਭਕੀਰਤਨ ਸਿੰਘ), *ਭਾਰਤੀ ਦਰਸ਼ਨ ਦੀ ਰੂਪ-ਰੇਖਾ*, ਯੂਨੀਵਰਸਿਟੀ ਬੁਕਸ, ਚੰਡੀਗੜ੍ਹ, 2014.
2. ਗੁਪਤਾ, ਸ਼ਾਂਤੀ ਨਾਥ, *ਭਾਰਤੀ ਦਰਸ਼ਨ*, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ, 1974.
3. ਨਿਰਾਕਾਰੀ, ਆਰ.ਡੀ., *ਭਾਰਤੀ ਦਰਸ਼ਨ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1994.
4. ਮਨਮੋਹਨ, *ਦੈਰੀਦੀਅਨ ਵਿਖੰਡਨ ਤੇ ਭਾਰਤੀ ਗਿਆਨ ਸ਼ਾਸਤਰ*, ਪੰਜਾਬੀ ਸਭਿਆਚਾਰਕ ਕੇਂਦਰ, ਦਿੱਲੀ।

#### Hindi Books

1. ਸਿਨਹਾ, ਹਰਿੰਦਰ ਪ੍ਰਸਾਦ, *ਭਾਰਤੀ ਦਰਸ਼ਨ ਕੀ ਰੂਪਰੇਖਾ*, ਮੋਤੀਲਾਲ ਬਨਾਰਸੀ ਦਾਸ, 1963.
2. ਮਿਸ਼ਰ, ਉਮੇਸ਼ (ਡਾ.), *ਭਾਰਤੀ ਦਰਸ਼ਨ*, ਉੱਤਰ ਪ੍ਰਦੇਸ਼, ਹਿੰਦੀ ਸੰਸਥਾਨ, ਲਖਨਊ, 2003.
3. ਰਾਧਾ ਕ੍ਰਿਸ਼ਨਨ, *ਭਾਰਤੀ ਦਰਸ਼ਨ*, ਰਾਜਪਾਲ ਐਂਡ ਸੰਨਜ਼, ਦਿੱਲੀ, 1973.

**SEMESTER–VI**

**PHILOSOPHY**

**OPT. (II) AESTHETICS**

**Time Allowed 3 Hours**

**Max. Marks: 100**

**Lectures to be delivered: 6 per week**

**Pass Marks 35**

**Note: Instruction for the Paper Setter:-**

The question paper will consist of five sections : A, B, C, D & E. Section A, B, C, will have two questions from each respective section of the Syllabus and each question will carry 15 marks. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and carry 40 marks in all, each short answer type question carrying 4 marks.

**Instructions for the Candidates**

Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire Section E.

**Section–A**

1. Aesthetics: Nature, Scope and Utility
2. Form and Content in work of Art
3. Art for Art Sake (Kant), Art for Social Function (Sartre)

**Section–B**

4. Rasa Theory in Indian Aesthetics
5. Main Characteristics of Aesthetic Activity
6. Sikh Aesthetics

**Section–C**

7. Architecture
8. Sculpture
9. Painting and Drawing

**Section–D**

10. Music
11. Poetry
12. Theatre

**Section–E**

**Ten Short answer type questions.**

## SEMESTER–VI

### Recommended Readings

#### English Books

1. Bosanque, Bernard, *The History of Aesthetics*, George Allen & Unwin Ltd., London, 1967.
2. Chatterji, D.C., *Fundamental Questions in Aesthetics*, Indian Institute of Advanced Studies, Shimla. 1968.
3. Ghoshal S.N., *Elements of Indian Aesthetics*, Chaukhambha Orientalia, Varanasi, 1978.
4. Graham Gordan, *Philosophy of the Arts; an Introduction to Aesthetics*, London, 1997.
5. Jhanji, Rekha, *Aesthetic Communication*, New Delhi, M. Manohar Lal, 1985.
6. Pandit Sneh, *An Approach to the Indian Theory of Art and Aesthetics*, Sterling Publishers, PVT, New Delhi, 1977.
7. Sharma, H.L., *Indian Aesthetic and Aesthetics Perspective*, Mansi Prakashan, 1995.
8. Titus, Harold H., *Living Issues in Philosophy*, Eurasia, New Delhi, 1968.

#### Punjabi Books

1. ਗੋਪਾਲ ਸਿੰਘ, *ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦੀ ਸਾਹਿਤਕ ਵਿਸ਼ੇਸ਼ਤਾ*, ਨੈਸ਼ਨਲ ਪ੍ਰੈਸ ਆਂਡ ਇੰਡੀਆ, ਨਵੀਂ ਦਿੱਲੀ, 1987.
2. ਚਮਨ, ਸਰੋਜ, *ਸੌਂਦਰਯ ਸ਼ਾਸਤਰ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1997.
3. ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼ ਸਿੰਘ, *ਭਾਰਤੀ ਕਾਵਿ-ਸ਼ਾਸਤਰ*, ਮਦਾਨ ਪਬਲੀਕੇਸ਼ਨ, ਪਟਿਆਲਾ, 2001.
4. ਬਲਜੀਤ ਕੌਰ (ਡਾ.), *ਸੁਹਜ ਸ਼ਾਸਤਰ ਦੀ ਰੂਪ-ਰੇਖਾ*, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1987.

#### Hindi Books

1. ਨਗੇਂਦਰ (ਡਾ.), *ਭਾਰਤੀ ਸੌਂਦਰਯ ਸ਼ਾਸਤਰ ਕੀ ਭੂਮਿਕਾ*, ਨੈਸ਼ਨਲ ਪਬਲਿਸ਼ਿੰਗ ਹਾਊਸ, ਦਿੱਲੀ, 1984.
2. ਸ਼ਰਮਾ, ਹਰਦਵਾਰੀ ਲਾਲ, *ਸੌਂਦਰਯ ਸ਼ਾਸਤਰ*, ਮਾਨਸੀ ਪ੍ਰਕਾਸ਼ਨ, ਕੈਲਾਸ਼ਪੁਰੀ, ਮੇਰਠ, 1999.

**SEMESTER–VI**

**ZOOLOGY**

**SEMESTER -VI**

**Paper Zoo–VI (Option i/ ii/ iii)**

Paper	Maximum Marks		Hours of Teaching	
	Theory Marks	Practical Marks	Theory	Practical
ZOO-VIA (Option i/ ii/ iii)	35	—	3 Hrs	—
ZOO-VIB (Option i/ ii/ iii)	35	—	3 Hrs	—
PRACTICAL–VI (RELATED TO ZOO-VIA and ZOO-VIB)	—	30	—	4½ Hrs

**Options:-**

- (i) Medical Zoology & Medical Laboratory Technology
- (ii) Economic Entomology
- (iii) Inland Fisheries (Aquaculture)

## SEMESTER–VI

### ZOOLOGY

#### ZOO-VI A: Option-i: Medical Zoology (THEORY)

Max. Time: 3 Hrs.

Max Marks: 35

#### Instructions for the Paper Setters:

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

#### UNIT-I

1. Introduction of Parasitology (various terminologies in use).
2. Brief introduction to pathogenic microbes, viruses, Rickettsiae, spirochaetes and bacteria.
3. Brief accounts of life history, mode of infection and pathogenicity of the following with reference to man; prophylaxis and treatment:
  - a) Pathogenic protozoa: *Entamoeba*, *Trypanosoma*, *Leishmania*, *Giardia*, *Trichomonas* and *Plasmodium*.
  - b) Pathogenic helminthes: *Fasciola*, *Schistosoma*, *Echinococcus*, *Ancylostoma*, *Trichinella*, *Wuchereria*, *Dracunculus* and *Oxyuris*.

#### UNIT-II

4. Life cycle and control measures of arthropod vectors of human disease: Malaria (*Anopheles stephensi*, *A. culicifacies*, Yellow fever, Dengue, Dengue haemorrhagic and fever Chicken guinea. (*Aedes aegypti* A. *Albopictus*); Filariasis (*Culex pipien satigeans*) *Mansonia* sp. Japanes Encephalitis (*C. trinelorhynchus*); Plague (*Stenophalide cheopis*) and Epidemic Typhus (*Pediculus spp*).
5. Epidemic diseases, such as Typhoid, Cholera, Small pox; their occurrence and eradication programs.

#### UNIT-III

6. Brief introduction to human defence mechanisms.
7. Humoral and cell mediated immune response. Physical & chemical properties of antigens. Antibody structure and function of M, G, A, E and D immunoglobulins.

#### UNIT-IV

8. Antigen and antibody interactions-Serodiagnostic assays (Precipitation, agglutination immunodiffusion, ELISA, RIA)
9. Vaccines

**Suggested Readings:**

1. Baker, F.J. and Silvertown, R.E. (1985) Introduction to Medical Laboratory Technology, (6<sup>th</sup> ed), Butterworth and Co. Ltd.
2. Chatterjee, K.D.(1995), Parasitology, Protozoology and Helminthology (12<sup>th</sup> ed).
3. Cheesborough, M.(1987), Medical Laboratory Technology for Tropical countries (2<sup>nd</sup> ed), Butterworth and Co., Ltd.
4. Garcia, L.S.(2001), Diagnostic Medical Parasitology, (4<sup>th</sup> ed), ASM Press Washington.
5. Kimball, J.W. (1986), Introduction of Immunology, MacMillan Publishing Co., New York.
6. Kuby, J.(2000), Immunology, W.H. Freeman & Co., USA.
7. Roitt, I. (1984), Essential Immunology, Blackwell Scientific Publications, Oxford.
8. Talib, V.H.(1999), Essential Laboratory Manual, Mehta Publishers, New Delhi.

**SEMESTER–VI****ZOOLOGY****ZOO-VI B: Option-i: Medical Laboratory Technology  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**UNIT-I**

Laboratory safety rules, hazards and precautions during sample collection and laboratory investigations.

Laboratory Techniques: Colorimetry, Microscopy, Autoclaving, Centrifugation and Spectrophotometry

**UNIT-II**

Collection, transportation and preservation of different clinical samples.

Haematology, collection of blood (venous and capillary), anticoagulants (merits and demerits), Romanowsky's stains, total RBC count, erythrocyte sedimentation rate, TLC, DLC, platelet count

**UNIT-III**

Bacteriology: sterilization (dry heat, moist heat, autoclave, filtration), disinfection, staining techniques, (gram stain, AFB stain, etc), culture media (defined and synthetic media & routine laboratory media), bacterial culture (aerobic and anerobic) and antibiotic sensitivity.

**UNIT-IV**

Histopathology: Common fixatives and staining techniques.

Biochemistry: Principal/theory and significance of estimation of urea, sugar, cholesterol, creatinine, enzymes (transaminase, phosphatase, amylase and lipase), uric acid in blood, estimation of proteins, sugar, bile salts, ketone bodies in urine and liver function test.

**Suggested Readings:**

1. Baker, F.J. and Silvertson, R.E. (1985) Introduction to Medical Laboratory Technology, (6<sup>th</sup> ed), Butlerworth and Co. Ltd.
2. Chatterjee, K.D.(1995), Parasitology, Protozoology and Helminthology (12<sup>th</sup> ed).

3. Cheesborough, M.(1987), Medical Laboratory Technology for Tropical countries (2<sup>nd</sup> ed), Butlerworth and Co., Ltd.
4. Garcia, L.S.(2001), Diagnostic Medical Parasitology, (4<sup>th</sup> ed), ASM Press Washington.
5. Kimball, J.W. (1986), Introduction of Immunology, MacMillian Publishing Co., New York.
6. Kuby, J.(2000), Immunology, W.H. Freeman & Co., USA.
7. Roitt, I. (1984), Essential Immunology, Blackwell Scientific Publications, Oxford.
8. Talib, V.H.(1999), Essential Laboratory Manual, Mehta Publishers, New Delhi.

**SEMESTER–VI****ZOOLOGY****Practical-VI (Related to (Option-i) ZOO-VI A and ZOO-VI B)****Time: 3hrs.****Max. Marks: 30****Important Note for Practical:**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines the dissections may please be avoided. In no case an animal falling under the categories of wildlife protection act 1972 should be caught or dissected. The rules of the Prevention of cruelty to Animals act 1960 should be familiar to all who are teaching the zoology courses. The guidelines on this issue are also available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)

1. Demonstration of safety rules in laboratory like proper handling of patients, specimens and disposal of syringes, needles etc.
2. Demonstration of the use of autoclave, centrifuge and spectrophotometer.
3. Cleaning and sterilization of glass ware, using hot air oven, autoclave etc.
4. Physico-chemical examination of urine.
5. Preparation of thick and thin blood smear.
6. Counting of WBC, RBC and DLC.
7. Study of permanent slides and specimens of parasitic protozoans, helminthes and arthropods mentioned in the theory syllabus.
8. ESR and haematocrit
9. Estimation of blood sugar, protein.

Demonstration of fixation, embedding, cutting of tissue sections, and their staining (routine haemotoxylin and eosin).

Visit to a pathology Lab and preparation of report.

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of Practical Examination:**

1. Write down the principle and working of the given equipment. 5
2. Write down the procedure, precautions and perform the experiment for physico-chemical examination of urine/ haematology. 5
3. Write down the procedure for histological histochemical preparation. 5
4. Identification, pathogenicity and host of parasitic organism. 5
5. Estimation of blood sugar/urea/cholesterol/ protein in the given sample. 5
6. Viva-voce and practical file. 5

**SEMESTER–VI**  
**ZOOLOGY**  
**ZOO-VI A: Option-ii: Economic Entomology-1**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**Section-A**

1. Systematic position, habits and nature of damage of the following pests of crops and vegetables :

**a) Sugarcane:**

1. Sugarcane leaf hopper (*Pyrilia perpusila*)
2. Sugarcane top borer (*Scirpophaga nivella*)
3. Sugarcane stem borer (*Chilotrea infuscatellus*)
4. Alongwith life cycle and control of *Pyrilia perpusilla* (Sugarcane leaf hopper).

**b) Cotton:**

1. Pink bollworm (*Pectinophora gossypiella*)
2. Red cotton bug (*Dysdercus cingulatus*)
3. Cotton grey weevil (*Mylocerus maculosus*)
4. Surface grasshopper (*Chrotogonus trachypterus*)
5. Cotton jassid (*Empoasca devastans*)
6. Along with life cycle and control of Pink boll worm (*Pectinophora gossypiella*)

**Section-B**

**c) Paddy:**

1. Rice gundhy Bug (*Leptocorisa varicorni*)
2. Rice grasshopper (*Heiroglyphus bania*)
3. Rice Hispa (*Di cladispa armigera*)
4. Along with life cycle and control of gundhy bug (*Leptocorisa varicornis*).

**d) Wheat:**

1. Wheat stem borer (*Sesamia inferens*).
2. Termites
3. Wheat Aphid and Jassid
4. Along with life cycle and control of Wheat stem borer (*Sesamia inferens*).

### Section-C

#### e) Vegetables:

1. Red pumpkin beetle (*Aulacophora foveicollis*)
2. Pumpkin fruit fly (*Dacus cucurbitae*)
3. Hadda beetle (*Epilachna vigintioctopunctata*)
4. Along with life cycle and control of pumpkin fruit fly (*Dacus cucurbitae*)

#### f) Pests of stored grains: Systematic position, habits and nature of damage of the following pests of stored grains:

1. Pulse Beetel (*Callosobruchus maculatus*)
2. Rice weevil (*Sitophilus oryzae*)
3. Khapra beetle (*Trogoderma granarium*)
4. Rust red flour beetle (*Tribolium castaneum*)
5. Rice moth (*Corcyra cephalonica*)
6. Lesser grain borer (*Rhizopertha dominica*)
7. Along with life cycle and control of Pulse Beetel (*Callosobruchus maculatus*)

### Section-D

#### 2. Useful Insects: Principles of following industries-

1. Sericulture,
2. Apiculture
3. Lac culture industries.

#### Suggested Reading Material:

1. Alford, D.V. (1999), A text book of Agricultural Entomology. Blackwell Science Publishers, Cambridge, U.K.
2. Atwal, A.S. and Dhaliwal, G.S. (1997), Agricultural pest of South Asia and their management, Kalyani Publishers, New Delhi.
3. Dhaliwal, G.S. and Arora, R. (1996), Principles of insect management, Globe offset Press, New Delhi.
4. Hill, D.S. (1993), Agricultural insect pests of the Tropics and their control (2nd Ed), Cambridge University Press, Cambridge, New York.

**SEMESTER–VI****ZOOLOGY****ZOO-VI B: Option-ii: Economic Entomology-II  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**Section-A**

- I. Systematic position, disease caused and control of the following pests of Medical and Veterinary importance:
  1. Mosquitoes
  2. Sand fly (*Phlebotomus minutus*)
  4. House fly (*Musca domestica*)
  5. Horse fly (*Tabanus striatus*)
  6. Blow fly (*Calliphora erythrocephala*)
  7. Warble fly (*Hypoderma lineatum*)
  8. Fleas

**Section-B**

- II. Systematic position, disease caused and control of the following pests of Medical and Veterinary importance
  1. Lice Poultry louse (*Menopon gallinae*)
  2. Sucking louse (*Haematopinus surystrernus*)
- III. Mouth parts of:
  - Red cotton bug
  - Grasshopper
  - Cockroach
  - Mosquito
  - Honey bee

**Section-C**

- IV. Biological control of insect pests.
  - Principles and history
  - Modern status

- V. Recent methods of pest suppression;  
Sterile insect release methods  
Behavioral control involving the use of pheromones  
Integrated pest control.

#### Section-D

- VI. Chemical Control:  
History  
Principle of chemical control  
Categories of pesticides  
Important pesticides of each category  
Insect repellents  
Attractants.

#### Suggested Reading Material:

1. Alford, D.V. (1999), A text book of Agricultural Entomology. Blackwell Science Publishers, Cambridge, U.K.
2. Atwal, A.S. and Dhaliwal, G.S. (1997), Agricultural pest of South Asia and their management, Kalyani Publishers, New Delhi.
3. Dhaliwal, G.S. and Arora, R. (1996), Principles of insect management, Globe offset Press, New Delhi.
4. Hill, D.S. (1993), Agricultural insect pests of the Tropics and their control, (2nd Ed), Cambridge University Press, Cambridge, New York.

**SEMESTER–VI****ZOOLOGY****Practical–VI (Related to (Option-ii) ZOO-VI A and ZOO-VI B)****Time: 3 Hrs.****Marks: 30****Important Note for Practical:**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
  2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
  3. As per the latest UGC guidelines the dissections may please be avoided. In no case an animal falling under the categories of wildlife protection act 1972 should be caught or dissected. The rules of the Prevention of cruelty to Animals act 1960 should be familiar to all who are teaching the zoology courses. The guidelines on this issue are also available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)
- 
1. Feeding Apparatus: Mouth parts of honey bee, butterfly and red cotton bug by preparing permanent mounts.
  2. A study of different types of larvae and pupae of insects.
  3. External morphology and identification marks of the pests *Pyrilla perpusilla* (Sugarcane leaf hopper), *Pectinophora gossypiella* (Pink bollworm), *Leptocorisa varicornis* (Gunbdhy bug) *Heiroglyphus banian* (Paddy grass hopper), *Dacus cucurbitae* (Pumpkin fruit fly).
  4. External morphology and identification marks of the following stored grain pests: *Sitophilus oryzae* (Rice Weevil), *Tribolium castaneum* (Rust red flour beetle), *Rhizopertha dominica* (Lesser grain borer/susri), *Trogoderma granarium* (Khapra beetle), *Callosobruchus maculatus* (Pulse beetle/Dhora).
  5. External morphology and identification marks of the following insects of Medical/Veterinary importance–Mosquitoes (*Culex*, *Anopheles* and *Aedes*), house fly, blow fly, warble fly and horse fly.
  6. A study of life stages of silkworm and honeybees.
  7. To demonstrate different techniques and equipments for collection, storage and preservation of insects.
  8. Structure and working of common sprayers. Hand compression sprayer, Knap sack sprayer.
  9. Visit to apiary and godowns for study of infestation.
  10. Assignment on local insect fauna.

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of Practical Examination:**

- |  |    |
|--|----|
| 1. Identify of given spots, give two points for identification.        | 10 |
| 2. Draw & write a note on the life cycle of given specimen.            | 5  |
| 3. Identify the instrument and write down its working and application. | 5  |
| 4. Project report on apiary/godowns/grainary.                          | 5  |
| 5. Viva-voce and practical file.                                       | 5  |

**SEMESTER–VI****ZOOLOGY****ZOO-VI A: Option-iii: Inland Fisheries-I  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**Section-A**

History of inland fisheries in India.

Morphology of a typical fish (carp, cat-fish, freshwater eel, perch).

Structure of mouth of different fishes in relation to feeding habits.

**Section-B**

Identification and classification of important fishes of Punjab, Haryana and Himachal Pradesh.  
Bionomics of *Labeo rohita*, *Cirrhinus mrigala* and *Wallago attu*.

**Section-C**

Exotic fishes: History, their introduction, morphology, their role in fish culture, impact on native fish fauna.

Induced Breeding: History, Technique, Chemicals involved in induced breeding and Impact on fish culture.

**Section-D**

Pond culture: Construction of pond, Types of pond, Fertilization of pond and Maintenance of pond.

Aquatic weeds and their control- Both biological and chemical

**Suggested Readings:**

1. Aggarwal S.C. & Johal M.S., Fishery Development, Narendra Publishing House, Delhi.
2. Jayaram, K.C. (1981), the freshwater fishes of India, Pakistan, Bangladesh, Burma and Sri Lanka-A Hand Book of Zoological Survey of India, Kolkatta.
3. Jhingran V.G. (1991), Fish and Fisheries of India, Hindustan Publishing Corporation of India, Delhi.

4. Johal M.S. & Tandon K.K. (1979,1980), Monograph on the Fishes of reorganized Punjab, (Vol. I & II), Punjab.
5. Johal M.S. & Tandon K.K.(1981), Fisheries of Punjab, Res. Bull, Panjab University, Vol. 32, pp. 143-154.
6. Legler Karl F(1962), Freshwater Fishery Biology, Wm. C-Brown Co. Dublingus IOWA, USA.
7. Munshi, J.S.D and Datta, H.M. (1996), Fish Morphology- Horizons of New Research, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
8. Rath R.K. (1993), Freshwater Aquaculture, Scientific Publishers, Jodhpur.
9. Tandon K.K. and Johal M.S.(1996), Age and Growth of freshwater fishes in India, Narendra Publishing House, New Delhi.

**SEMESTER–VI****ZOOLOGY****ZOO-VI B: Option-iii: Inland Fisheries-II  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:**

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

**Section-A**

Riverine fisheries of river Sutlej and Beas.  
Reservoir Fisheries: Gobindsagar, Pong Dam

**Section-B**

Culture Systems: Conventional, Extensive, Intensive, Monoculture and Polyculture.  
Integration of fish farming with Duckry, poultry, piggery and dairy.  
Sewage fed fisheries.

**Section-C**

Cold water fisheries: Mhaseer fisheries and Trout fisheries.  
Fish Disease and their control: Viral, Bacterial, Fungal, Helminths, Crustacean.  
Disease due to unhygienic conditions during transportation.

**Section-D**

Fish by-products.  
Marketing of Fish: Fresh Water fish, Preservation of fish.

**Suggested Readings:**

1. Aggarwal S.C. & Johal M.S., Fishery Development, Narendra Publishing House, Delhi.
2. Jayaram, K.C. (1981), the freshwater fishes of India, Pakistan, Bangladesh, Burma and Sri Lanka-A Hand Book of Zoological Survey of India, Kolkatta.
3. Jhingran V.G. (1991), Fish and Fisheries of India, Hindustan Publishing Corporation of India, Delhi.

4. Johal M.S. & Tandon K.K. (1979, 1980), Monograph on the Fishes of reorganized Punjab, (Vol. I & II), Punjab.
5. Johal M.S. & Tandon K.K.(1981), Fisheries of Punjab, Res. Bull, Panjab University, Vol. 32, pp. 143-154.
6. Legler Karl F(1962), Freshwater Fishery Biology, Wm. C-Brown Co. Dublingus IOWA, USA.
7. Munshi, J.S.D and Datta, H.M. (1996), Fish Morphology- Horizons of New Research, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
8. Rath R.K. (1993), Freshwater Aquaculture, Scientific Publishers, Jodhpur.
9. Tandon K.K. and Johal M.S.(1996), Age and Growth of freshwater fishes in India, Narendra Publishing House, New Delhi.

**SEMESTER–VI**

**ZOOLOGY**

**Practical–VI (Related to (Option-III) ZOO-VI A and ZOO-VI B)**

**Time: 3hrs.**

**Marks: 30**

**Important Note for Practical:**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines the dissections may please be avoided. In no case an animal falling under the categories of wildlife protection act 1972 should be caught or dissected. The rules of the Prevention of cruelty to Animals act 1960 should be familiar to all who are teaching the zoology courses. The guidelines on this issue are also available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)

1. Morphology of a Carp, Cat fish and Perch.
2. Morphometric and meristic characters of typical fish.
3. Identification of the following fishes using key : *Notopterus* spp.; *Labeo rohita*, *L. bata*, *Cirrhinus mrigala*, *Catla catla*, *Puntius sarana*, *Tor putitora*, *Schizothorex*, *Aorichthys seenghala*, *Wallago attu*, *Callichrous padda*, *Bagarius bagarius*, *Heterpneustus fossilis*, *Channa marulius*, *C. Striatus*, *Xenetondon cancila*, *Cyprinus carpio*, *Hypophthalmichthys molitrix*, *Ctenopharyngodon idella*, *Colisa fasciata* and *Mastacembelus armatus*.  
For the identification of these fishes, the candidate can use already prepared keys or they can prepare their own keys.
4. Determination of food and feeding habits of locally available fishes on the basis of stomach analysis adopting the following methods :
  - a) Frequency occurrence method
  - b) Feeding intensity
  - c) Point method
5. Determination of maturity stages (both male and female) of any commercial fish (Preserved specimens).
6. Preparation of permanent slides of phytoplanktons and zooplanktons which constitute the food of commercial fishes. Their identification and study of important characters.
7. Identification of aquatic weeds of a fish pond.

8. Estimation of following chemical parameters of pond water :
  1. Temperature
  2. pH
  3. Dissolved oxygen
  4. Phosphates
  5. Total Dissolved solids
  6. Nitrates
  7. Hardness
  8. Examination of diseased fishes
  
9. Visit of various fish ponds and fish market.

**Note:- Some changes can be made in the practicals depending on the availability of material.**

**Guidelines for conduct of Practical Examination:**

1. Give salient features of the given fish/ Identification of Fish using keys. 6
2. Estimation of physico chemical parameters of pond water. 6
3. Identification of Zoo/ Phytoplanktons and their important characteristics. 5
4. Write morphometric/ meristic characters of a fish species. 4
5. Project report. 4
6. Viva-voce and practical file 5

**SEMESTER–VI**  
**BOTANY**  
**Paper- VIA: ECOLOGY**  
**(THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer–type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit-I**

**Plants and Environment:** Atmosphere (gaseous compositions), water (properties of water cycle), light (global radiation, photosynthetically active radiation), temperature, soil (development, soil profiles, physico-chemical properties), and biota.

Morphological, anatomical and physiological responses of plants to water (hydrophytes and xerophytes), temperature (thermoperiodicity and vernalization), light (photoperiodism, heliophytes and sciophytes) and salinity.

**Unit-II**

**Community Ecology:** Community characteristics, absolute and relative frequency, density and dominance, basal area and importance value index (IVI), Whittaker's classification of biodiversity, indices of alpha, beta and gamma diversity, life forms, biological spectrum, ecological succession.

**Unit-III**

**Population Ecology:** Growth curves, ecotypes, ecads.

**Ecosystem:** Structure, abiotic and biotic components, food chain, food web, ecological pyramids, energy flow, biogeochemical cycles of carbon, nitrogen and phosphorus.

**Unit-IV**

**Biogeographical Regions of India**

**Vegetation types of India:** Forests and grasslands

**Landscape Ecology:** Definition & concept, effect of patch size and shape on biodiversity, dynamics of land use.

**Suggested Readings**

1. Kocchar, S.L. (1998). Economic Botany in Tropics, 2nd edition, Macmillan India Ltd., New Delhi.
2. Kumar, H.D. (2011). Modern Concepts of Ecology. Vikas Publishing House, New Delhi.
3. Mackenzie, A. et al., 1999. Instant Notes in Ecology. Viva Book Pvt. Ltd., New Delhi.
4. Odum, E.P. and Barrett, G.W. (2012). Fundamentals of Ecology. Cengage Learning India Pvt. Ltd., New Delhi.
5. Sambarmurthy, A.V.S.S. and Subramanyam, N.S. (1989). A Textbook of Economic Botany, Wily Eastern Ltd., New Delhi.
6. Sharma, O.P. (1996). Hill's Economic Botany (Late Dr. A.F. Hill, adapted by O.P. Sharma). Tata McGraw Hill Co. Ltd., New Delhi.
7. Sharma, P.D. (2013). Environmental Biology. Rastogi Publications, Meerut.
8. Simpson, B.B. and Conner-Ogozaly, M. (1986). Economic Botany-Plants in Our World. McGraw Hill, New York.

**BOTANY**  
**Paper- VIB: ECONOMIC BOTANY**  
**(THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week Max. Marks: 35**

**Instructions for the Paper Setters:**

There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer–type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

**Unit-I**

**Food Plants:** *Oryza sativa* (Rice), *Triticum aestivum* (Wheat), *Zea mays* (Maize), *Solanum tuberosum* (Potato), *Saccharum officinarum* (Sugarcane).

**Fibres:** *Gossypium hirsutum* (Cotton) and *Chorchorus capsularis* (Jute).

**Vegetable Oils:** *Arachis hypogea* (Groundnut), *Brassica campestris* (Mustard) and *Cocos nucifera* (Coconut).

**Unit-II**

**Spices :** General account of *Piper nigrum* (Black pepper), *Eugenia caryophyllum* (Cloves), *Cinnamomum verum* (Cinnamomum), *Elettaria cardamomum* (cardamom), *Zingiber officinalis* (Ginger), *Curcuma longa* (Turmeric), *Coriandrum sativum* (Coriander), *Foeniculum vulgare* (Fennel) and *Mentha arvensis* (Mint).

**Unit-III**

**Medicinal Plants:** General account of *Terminalia chebula* (Harar), *Terminalia belerica* (Bahera), *Azadirachta indica* (Neem), *Phyllanthus emblica* (Amla), *Aconitum napellus* (Aconite), *Rauwolfia serpentina* (Sarpagandha), *Atropa belladonna* (Belladonna), *Datura stramonium* (Datura), *Withania somniferum* (Ashwagandha) and *Papaver somniferum* (Poppy).

**Unit-IV**

**Beverages:** *Camellia sinensis* (Tea) and *Coffea arabica* (Coffee).

**Rubber:** Morphology of *Hevea brasiliensis* (Rubber), Processing and Uses.

General account of sources of firewood, timber and bamboos.

**Suggested Readings:**

1. Council of Scientific & Industrial Research (1986). The Useful Plants of India. Publications and Information Directorate. CSIR, New Delhi.
2. Das, K. (2010). Medicinal plants- Their importance in Pharmaceutical Sciences, Kalyani Publishers, New Delhi.
3. Kocchar, S.L. (2000). Economic Botany of the Tropics, Macmillan India Pvt. Ltd., New Delhi.
4. Prinental, D. and Hall, C.W. (Eds.) (1989). Food and Natural Resources. Academic Press, London, New York.
5. Reddy, K. et al. (2007). Advances in Medicinal plants, Universities Press, Hyderabad.
6. Sharma, O.P. (1996). Hill's Economic Botany. Tata McGraw Hill Co. Ltd., New Delhi.
7. Swaminathan, M.S. and Kocchar, S.L. (Eds) (1989). Plants and Society. Macmillan Publications Ltd., London.
8. Verma, V. (2009). Textbook of Economic Botany, ANE Books, New Delhi.

**SEMESTER–VI  
BOTANY**

**Botany Practicals–VI (Based on Papers- VIA and VIB)**

**Practical Hours: 4½ Hours/week**

**Practical Marks: 30**

**Suggested Laboratory Exercises**

1. To determine minimum number of quadrats required for reliable estimate of biomass in grasslands through species area curves.
2. To study the frequency of herbaceous species in grassland and to compare the frequency distribution with Raunkiaer's Standard Frequency Diagram.
3. To estimate Importance Value Index for grassland species on the basis of relative frequency, relative density and relative dominance in protected and grazed grassland.
4. To measure the vegetation cover of grassland through point frame method.
5. To measure the above ground plant biomass in a grassland.
6. To study the morphological anatomical features of hydrophytes (*Hydrilla, Eichhornia*)
7. Xerophytes (*Nerium, Calotropis*).
8. To determine diversity indices (richness, Simpson, Shannon-Weaver) in grazed and protected grassland.
9. To estimate bulk density and porosity of grassland and woodland soils.
10. To determine moisture content and water holding capacity of grassland and woodland soil.
11. To study the vegetation structure through profile diagram.
12. To estimate transparency, pH and temperature of different water bodies.
13. To measure dissolved oxygen content in polluted and unpolluted water samples.
14. To estimate salinity of different water samples.
15. To determine the percent leaf area injury of different leaf samples collected around polluted sites.
16. To estimate dust-holding capacity of the leaves of different plant species.
17. **Food Plants:** Study of the morphology, structure and simple microchemical tests of the foodstoring tissues rice, wheat, maize, potato and sugarcane. Microscopic examination of starch in these plants (excepting sugarcane).
18. **Fibres:** Study of cotton flowers, sectioning of the cotton ovules/developing seeds to trace the origin and development of cotton fibers. Microscopic study of cotton and test for cellulose.
19. Sectioning and staining of jute stem to show the location and development of fibers.
20. Microscopic structure. Tests for lignocelluloses.
21. **Vegetable Oils:** Study of hand sections of groundnut, mustard and coconut and staining of oil droplets by Sudan III and Sudan Black.
22. **Field Visits:** To study sources of firewood (10 plants)/timber yielding trees (10 trees)/bamboos, list to be prepared mentioning special features, collection of plant based articles of common use.
23. **Spices:** Examine black pepper, cloves, cinnamon (hand sections) and opened of cardamom and describe them briefly.
24. Preparations of an illustrated inventory of 10 medicinal plants used in indigenous systems of medicine or allopathy: Write their botanical and common names parts used and diseases/disorders for which they are prescribed.

28. **Beverages:** Section boiled coffee beans and tea leaves to study the characteristic structural features.
29. Visit to *in situ* conservation site/Botanical Garden.

**Suggested Readings (for laboratory exercises)**

1. Council of Scientific & Industrial Research. (1986). The Useful Plants of India. Publications and Information Directorate. CSIR, New Delhi.
2. Kocchar, S.L. (2000). Economic Botany of the Tropics, Macmillan India Pvt. Ltd., New Delhi.
3. Krebs, C.J. (1989). Ecological Methodology. Harper and Row, New York, USA.
4. Ludwig, J.A. and Reynolds, J.F. (1988). Statistical Ecology, Wiley, New York.
5. Moore, P.W. and Chapman, S.B. (1986). Methods in Plant Ecology, Blackwell Scientific Publications.
6. Princental, D. and Hall, C.W. (Eds.) (1989). Food and Natural Resources. Academic Press, London, New York.
7. Sharma, O.P. (1996). Hill's Economic Botany. Tata McGraw Hill Co. Ltd., New Delhi.
8. Swaminathan, M.S. and Kocchar, S.L. (Eds.) (1989). Plants and Society. Macmillan Publications Ltd., London.

**SEMESTER–VI****MICROBIOLOGY****APPLIED MICROBIOLOGY–II  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setter:**

There will be a total of nine questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include two questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT–I**

1. Fermentation Process of Fermented Foods: Fermented cereal, legume and milk products. Microbiology of natural fermentation. Saurekraut, Yoghurt, soya sauce, cheese.

**UNIT–II**

2. Microbial Cell as Fermentation Products: Baker's and brewer's yeast, single cell protein, mushroom farming. Production of industrial chemicals: Acetic acid, citric acid, acetone and butanol.

**UNIT–III**

3. Production of alcoholic Beverages: Beer, wine and distilled beverages–Whisky, Brandy, Vodka, Gin production and applications of industrial enzymes: Amylases, proteases, immobilization of enzymes.

**UNIT–IV**

4. Vitamins and Amino Acids Production by Microorganisms: Riboflavin (B2) and cyanocobalamin (B12), glutamic acid. Production of antibiotics: Penicillin and streptomycin.

**Books Recommended:**

1. Read, G. 1982. Prescott and Dunn, *Industrial Microbiology*. CBS Publishers & Distributors, New Delhi.
2. Casida, L.E. 1991. *Industrial Microbiology*. Wiley Eastern Ltd., New Delhi.
3. Patel, A.H. 1984. *Industrial Microbiology*. Macmillan India Ltd., Delhi.
4. Trevan, M.D. Saffey, S., Goulding, K.H. and Stanberry, P. 1988. *Biotechnology : The Biological Principles*, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
5. Wiseman, A. 1995. *Handbook of Enzyme Biotechnology*. Ellis Harwood Ltd., London.
6. Wood, J.B.B., 1998. *Microbiology of Fermented Foods*, Volumes 1 and 2, Blackie Academic and Professional, London.
7. Power C.B. and Dagniwala, H.F. 1992. *General Microbiology*. Volume-2. Himalaya Publishing House, New Delhi.

**SEMESTER–VI****MICROBIOLOGY****(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. Production of amylases and proteases in liquid medium using the selected organisms.
2. Assay of various crude enzyme preparations
  - a. Amylase
  - b. Protease.
3. Production of alcohol from molasses and cereal grains.
4. Immobilization of microbial cells and enzyme preparations by calcium alginate entrapment method.
5. Comparison of submerged and solid state fermentation techniques for amylase production.

**SEMESTER–VI****INDUSTRIAL MICROBIOLOGY  
(VOCATIONAL)****FERMENTATION TECHNOLOGY  
(THEORY)****Time: 3 Hrs.****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setter:**

There will be a total of nine questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include two questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT–I**

1. The fermentation industry, Selection and development of Industrial Microorganisms, Fermentation media, aeration, pH, temperature, Batch versus continuous culture, Immobilized enzymes & their applications.

**UNIT–II**

2. Production of some Microbial Enzymes; Proteases, Amylases, Cellulases, Microbial Production of alcoholic beverages; Beer, Wine and Whisky.

**UNIT–III**

3. Production of Organic acids; Acetic Acid, Citric Acid, Lactic Acid, Gibberellic Acid, Production of Amino Acids; Lysine, Glutamic Acid.

**UNIT–IV**

4. Downstream processing and product recovery; Production of Pharmaceuticals Antibiotics:- Tetracycline & Penicillin, Vaccines, Vitamins. Bioremediation of metals, microbial treatment of Oil Pollution and Oil recovery.

**Books Recommended:-**

1. Fermentation Technology by Whittaker, 1995.
2. Industrial Microbiology by Casida, 1989.
3. Industrial Microbiology by A.H. Patel, 2004.
4. Biotechnology: A text book of Industrial Microbiology by W. Cruger and A.Cruger, 2003.

**SEMESTER–VI****INDUSTRIAL MICROBIOLOGY  
(VOCATIONAL)****(PRACTICAL)****Time: 4 Hrs.****Marks: 25**

1. Demonstration for the cultivation of mushrooms.
2. Estimation of microbial ethanol production.
3. Isolation of actinomycetes from soil.
4. Isolation of thermophilic micro organisms from soil.
5. Immobilization of microbial cells and enzyme preparations by sodium alginate entrapment method.

**SEMESTER–VI****MICROBIAL & FOOD TECHNOLOGY****QUALITY CONTROL OF FOODS PRODUCTS  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setter:**

There will be a total of nine questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include two questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

**UNIT–I**

Definitions of Quality, Quality control, Total Quality Management, Quality Assurance. Organization of quality control department & its relation with other departments of industry system and development of HACCP, GMP guidelines.

**UNIT–II**

Food Laws, Grades & Standards, PFA, FPO, BIS, SWMA, Export (Quality Control & Technology) act, AGMARK, ISO 9000 standards, consumer Production Act. Sugar control order, vanaspati order, Meat Food Products order.

**UNIT–III**

Methods for microbiological examination of foods, (Direct examination, cultural techniques), enumeration methods, Alternate indirect methods (dye reduction, electrical, ATP), rapid methods for detection of specific organisms & toxins (immunological/molecular methods).

**UNIT–IV**

Chemical analysis of cereals, milk, eggs, meat, fruits & vegetables. Sensory analysis–General testing conditions, taste, odor, aroma & other senses. Descriptive, Discrimination & Acceptance tests. Taint tests, Layout & requirements of sensory test laboratory. Types of panels the requirements of panel members.

**Recommended Books:**

1. Jelling, Gisela. Sensory evaluation of food theory & quality control for fruits & vegetable products, 2nd Edition, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
2. Krammer A & Twigg B.A. Quality Control in Food Industry Vol. I.
3. Krammer A & Twigg B.A. Quality Control in Food Industry Vol. II.
4. Hayes P.R. (1992). Food Microbiology & Hygiene Elsenien Science Publishers Ltd., England.
5. Aurand L.W. & Wood A.E. Food Composition & Analysis.

**SEMESTER–VI****MICROBIAL & FOOD TECHNOLOGY****(PRACTICAL)****Time: 4 Hours****Marks: 25**

1. Platform tests for milk
2. Detection of additives/preservatives/neutralizers in milk.
3. Determination of fat, TS & SNF in milk.
4. Physical examination of cereals.
5. Proximate composition of wheat flour.
6. Microbiological examination of milk by MBRT & SPC.
7. Determination of % salt and reducing sugars in fruits & vegetable products.
8. Grading of eggs by candling.
9. Cut out examination of a canned food product & sensory analysis.

**SEMESTER–VI****BIOINFORMATICS (VOCATIONAL)****STRUCTURAL BIOLOGY AND MOLECULAR MODELLING  
(THEORY)**

**Time: 3 Hrs.**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions.
2. Question 1 will be compulsory and will be of 10 short answer type. **(1½ x10=15)**
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks.

**(15x4=60)**

**UNIT–I**

Isolation and purification of proteins, Protein sequence determination: Edman degradation, Mass Spectroscopy, Determination of protein structure: X-ray diffraction, NMR spectroscopy, Electron Microscopy.

**UNIT–II**

Protein Architecture: Motifs, Domains, classification of three dimensional structures in Brook haven protein databank (Pfam, SCOP, CATH). Secondary structure prediction: Chou Fasman, GOR. Protein Motifs and Domain Prediction (using Multiple sequence alignment, Regular expressions and statistical modelling), Prediction of three dimensional structure of proteins (Homology Modelling).

**UNIT–III**

Drug Design process, Computer aided drug design (Structure based drug design, Ligand based drug design), Quantitative structure activity relationship: QSAR Descriptors, Development of Hansch Equation, ADMET Prediction.

**UNIT–IV**

Empirical force fields for trimolecular simulations, Molecular Dynamics simulations techniques, Simulated Annealing, Conformational Analysis, Calculation of relative free energy using simulation techniques.

**List of Books:**

1. Broune P.E. and Weissig H. (Eds) Structural Biology. John Willey and Sons. N.J. USA (2002).
2. Creighton T.E. Protein Structure and Molecular Properties. W.H. Freeman and Company. (2001).
3. Martin R.B. Introduction to Biophysical Chemistry. McGraw Hill New York.

**SEMESTER–VI****BIOINFORMATICS (VOCATIONAL)****LAB IN STRUCTURAL BIOLOGY AND MOLECULAR MODELLING  
(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Credit Hours: 4½**

- Discovering motifs from DNA or Protein Sequences using MEME.
- Homology Modelling using SWISS-MODEL
- To analyze protein sequence using Secondary Structure prediction methods: GOR, CHOU-FASMAN
- To retrieve various structures of proteins from RCSB, their classification system using CATH/ SCOP.
- To carry out molecular dynamics simulation on a protein
- To carry out rigid body docking between a protein and ligand

**SEMESTER–VI**

**BIOTECHNOLOGY (VOCATIONAL)**

**ENVIRONMENTAL BIOTECHNOLOGY AND PLANT BIOTECHNOLOGY  
(THEORY)**

**Time: 3 Hrs.**

**Teaching Hours: 6**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

**Instructions for the Paper Setters and Candidates:**

1. There will be a total of 9 questions
2. Question 1 will be compulsory and will be of 10 short answer type. **(1½x10=15)**
3. The remaining 8 questions shall include 2 questions from each unit.  
Candidates shall be required to attempt 1 question from each unit.  
All questions shall have equal marks. **(15x4=60)**

**ENVIRONMENTAL BIOTECHNOLOGY**

**UNIT–I**

Renewable and non-renewable resources, What is renewable should be bioassimilable biodegradable;

Major consumer items: Food, fuel and fibres, Conventional fuels and their environment impact:

- Firewood, Plant and animal wastes, Coal, Gas, Animal oils. Modern fuels and their environment impact.
- Methogenic bacteria and biogas.
- Microbial hydrogen production, Microbial bioconversion, biotransformation, beer & wine production.
- Microbial mining, metalurgy, BOD & COD, environmental degradation and role of biotechnology in sustainable development. Environmental microbiology in chemical and other industries.
- Conversion of sugars to ethanol. The gasohol experiment.
- Solar energy converters-Hopes from the photosynthetic pigments.
- Plant based petroleum industry.
- Cellulose degradation for combustible fuel.

## UNIT–II

Biotechnological inputs in producing good quality nature fibres - Transgenic sheep and transgenic plants, Microbiological quality of food and water, Treatment of municipal waste and industrial effluents and waste water management, Degradation of pesticides and other toxic chemicals by microorganisms, Thuringensis toxin as a natural pesticide, Biological control of other insects swarming the agricultural fields, Enrichment of ores by microorganisms, Biofertilizers and organic farming. Nitrogen fixing microorganisms enrich the soil with Assimilable nitrogen.

## PLANT BIOTECHNOLOGY

### UNIT–III

Introduction to *in vitro* methods. Terms and definitions. Use of plant growth regulators, Beginning of *in vitro* cultures in our country, Ovary and ovule culture, *in vitro* Pollination and fertilization. Embryo culture, embryo rescue after wide hybridization, and its applications. Introduction to the processes of embryogenesis and organogenesis and their Practical applications, Clonal, multiplication of elite species using Micropropagation methods via axillary bud, shoot-tip and meristem culture.

### UNIT–IV

Haploids and their applications. Somaclonal variations and their applications, Endosperm culture, production of triploids and their Practical applications, Single-cell suspension cultures and their applications in selection of variants.

### UNIT–V

Introduction to protoplast isolation: Principles and applications, Testing of viability of isolated protoplasts, Various steps in the regeneration of protoplasts. Somatic hybridization—an introduction, Various methods for fusing protoplasts, Chemical, electrical, Use of markers for selection of hybrid cells. Practical applications of somatic hybridization (hybrids vs Cybrids). Use of plant cell, protoplasts and tissue culture for genetic manipulation of plants. Introduction to *Agrobacterium tumefaciens*, Tumor formation on plants using *A. tumefaciens* (Monocots vs. Dicots), Root-formation on plants using *A. rhizogenes*, Practical application of genetic transformation.

**Books Recommended:**

1. Davis, B.D., Dulbecco, R., Eisen, H.N. and Ginsberg, H.S. (1991). Microbiology, 4<sup>th</sup> edition, Harper and Row, Singapore.
2. M.K. Razdan (2003). An Introduction to Plant Tissue Culture, 2<sup>nd</sup> Edition, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
3. Pelczar, M.J. Jr., Chan ECS and Krieg, N.R. (1993). Microbiology Concepts and Applications, McGraw Hill, NY.
4. Stanbury, P.F. Whitaker, A. and Hall, S.J. (2001). Principles of Fermentation Technology, 2<sup>nd</sup> ed., Aditya Books (P) Ltd., New Delhi.
5. B.D. Singh (2012), Biotechnology: Expanding Horizons, Kalyani Publishers.
6. G.S. Chahal and S.S. Gosal (2002). Principles and Procedures of Plant Breeding. Biotechnology and Conventional Approaches, Narosa Publishers.
7. Chawla, H.S. (2009). Introduction to Plant Biotechnology, 3<sup>rd</sup> Edition, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
8. Bhojwani, S. S. and Razdan, M. K. (1996). Plant Tissue Culture: Theory and Practice, A Revised Edition, Elsevier India, New Delhi.

**SEMESTER–VI****BIOTECHNOLOGY (VOCATIONAL)****ENVIRONMENTAL BIOTECHNOLOGY AND PLANT BIOTECHNOLOGY****(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Teaching Hours: 4½**

Preparation of Media (simple and complex) significance of sterilization, selection of explant.

Initiating plant tissue culture: (differentiation of explants).

Growth of plant cells into undifferentiated callus mass.

Raising plant cell suspension cultures *in vitro*.

Monitoring Microbial contamination (bacteria, fungi and mycoplasma)/Sterilization techniques:  
Theory and Practical.

- Glass ware sterilization

- Media sterilization

- Laboratory sterilization

Demonstration/operation of large scale fermenters

Screening, isolation and selection of cellulolytic microorganism B.O.D. determination

**Books Recommended:**

1. Chawla, H.S. (2004). Laboratory Manual for Plant Biotechnology, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
2. Benson, H.J. (1994). Microbiological Applications, 6th ed., Win, C. Brown Publishers, England.
3. Cappucino, J.G. and Serman, N. (2002). Microbiology–A Laboratory Manual, 6<sup>th</sup> ed., Pearson Education, New Delhi.

**SEMESTER–VI****EDUCATION****MODERN INDIAN EDUCATION****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:**

**Note:** (i) The question paper will consist of five Units: I, II, III, IV & V. Units I, II, III & IV will have two questions each carrying 20 marks. The students are to attempt one question from each unit approximately in 1000 words. Unit –V consists of 10 short answer type questions to be set from their entire syllabus and will carry 20 marks in all. Each short answer type question carries 2 marks, to be attempted in 8 to 10 lines.

**UNIT–I**

1. Meaning & aims of Elementary Education
2. Universalization of Elementary Education – Need & importance and its problems

**UNIT–II**

1. Meaning & Aims of Secondary Education
2. Vocationalization of Secondary Education – Meaning, Need & importance and its problems

**UNIT–III**

1. Role of Sarv Shiksha Abhiyan in strengthening Elementary Education
2. Right to Education Act – 2009

**UNIT–IV**

1. Functions of PSEB, CBSE, ICSE
2. Functions of NCERT, SCERT, UGC

**UNIT–V**

This Unit (V) will consist of 10 short type questions to be set from the entire syllabus of first four Units (I, II, III, IV)

**Books Recommended:**

1. Bhatia K.K., Chadha P.C., Kadyan, K.S. Sharma, S: Modern Indian Education and its Problems, Parkash Brothers Ludhiana, 2005.
2. Bhatnagar, Suresh: Modern Indian Education and its Problems, Meerut, R.Lall Book Depot (2006).
3. Bhullar, G.K.: Emerging Indian Education: Challenges and Trends, Jalandhar, Modern Publishers, (2010).
4. Chakravarti, M. Education in the 21<sup>st</sup> Century, Kalpaz Publishers, New Delhi, 2007.
5. Srivastva, D.S., Elementary Education, Isha Books Publishers, New Delhi, 2007
6. Sodhi, T.S: Emerging Trends in Indian Education, Patiala, Bawa Publication, 2007.

## HUMAN RIGHTS

### WOMEN RIGHTS AND HUMAN RIGHTS

**Time: 3 hours**

**Max. Marks: 100**

#### **Instructions for the Paper Setters:**

The question paper will consist of five sections A, B, C, D and E. Section A, B, C and D will have two questions from the respective portion of the syllabus and will carry 20 marks each. Section E will consist of 10 short answer type questions to be set from the entire syllabus i.e. sections A,B,C & D and will carry 20 marks in all ,such short answer type questions carry 2 marks.

#### **Instructions for the Candidates:**

Candidates are required to attempt one question each, from sections A, B, C and D of the question paper and the entire section E. The candidates are required to answer the short questions in not less than 50 words.

#### **UNIT-I**

Social construction of Gender

#### **UNIT-II**

Sex and Gender

#### **UNIT-III**

Understanding Patriarchy

#### **UNIT-IV**

Laws Institutions and women's rights

#### **UNIT-V**

Women's Political participation and Representation in India

#### **UNIT-VI**

Gender Justice

**Recommended Books:**

1. Chatterji, Mohini, Women's Human Rights, Avishkar Publishers, Jaipur.
2. Padma, Iyer, Human Rights of Women, Pointer Publishers, Jaipur.
3. Uma Devi, K., Violence Against women: Human Rights Perspective, Serial publication, New Delhi.
4. Siddiqi and Ranganathan, hand Book on Women and Human Rights: a guide for Social Activities, Part I, kanishka Publishers, New Delhi.
5. Siddiqi and Ranganathan, Hand Book on women and Human Rights: A Guide For Social Activities Part II, kaniishka Pblishers, New Delhi.
6. Khan, M.A., Women and Human Rights, Associated Publishers, Ambala city.
7. Sharma Urmila, Women and Human Rights, Shalab Book House, Merrut
8. Kaushal, Rachna, (2000), Women and Human Rights in India. New Delhi: Kaveri Books.
9. Khan, Mumtaz Ali, (1998), Women and the Human Rights, Commonwealth, New Delhi.
10. Kaushik, Vijay (1999), Women's Movements and Human Rights, Pointer Publishers Jaipur.
11. Nirmal, C.J., (1999), Human Rights in India, Oxford, New Delhi.
12. Saxena, Shobha, (1999), Crimes against Women and Protective Laws, Deep and Deep, New Delhi.
13. UN, (1999), Convention on the Elimination of all Forms of Discrimination again.

**SEMESTER–VI**

**DAIRY FARMING (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**

**Periods/Week: 6**

**Instructions for the Paper Setters:**

**Max. Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

1. Question paper should be set strictly according to the syllabus and in Punjabi language.
2. The language of questions should be straight and simple.
3. Theory paper shall consist of three parts :-
  - a) Ten short compulsory questions of two marks each requiring short replies up to five lines each. **(5x2=10 Marks)**
  - b) Five questions of six marks each requiring short replies shall be asked. The candidate has the choice to attempt eight questions. **(4x6=24 Marks)**
  - c) Two questions of descriptive type requiring five pages for each answer shall be asked. The candidate has the choice to attempt one question. **(16x=16 Marks)**
4. The question paper should cover the whole syllabus.

**1. Marketing of Milk and Milk Products**

Organisation of dairy unit, cooling, storage and transportation of milk. Standardization, homogenization and pasteurization of milk. Types of marketable milk. Processing of milk. Quality control tests of milk and *ghee*. Distribution of milk, Export of milk and milk products.

**2. Role of Govt. departments and institutions in Dairy**

**Farming**

Role of organizations like Animal Husbandry Department, Dairy Development Board, National Dairy Research Institute, Banks, Co-operatives, P.A.U., GADVASU, Milk Producers' Cooperative Societies, Milk Plants, Private milk plants, their role as stake holders.

**3. Operation Flood**

Role and scope of Dairy Farming in National Economy. National Dairy Development Board, Indian Dairy Development Corporation, Milkfed.

4. Dairy Farm Record Keeping and its importance.

**SEMESTER–VI**

**DAIRY FARMING (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hours**  
**Periods/Week**

**Marks: 50**

**Distribution of Marks:**

<b>Assignment</b>	<b>10 Marks</b>
<b>Practical Note book</b>	<b>10 Marks</b>
<b>Four Visits to Dairy Farms</b>	<b>10 Marks</b>
<b>Oral Examination</b>	<b>10 Marks</b>
<b>Written Test</b>	<b>10 Marks</b>

**Note:** Preparation of Practical Note book and Dairy Farm Assignment is compulsory

1. Separation of Cream from Milk.
2. Preparation of Curd, butter, ghee, cheese and khoa.
3. Determining the Value of Dairy Animal.
4. Preparation of Dairy Farm Loan Scheme for Submission to credit Agencies.
5. Judging of lactating Cows and Buffaloes.
6. Practice in Computation of Rations for Dairy Stock.

**Text Books:**

1. A Text book of Animal Husbandry by G.C. Banerjee.
2. A Text book of Livestock Production and Management in Tropics by D.N. Verma.
3. Livestock Production and Management by NSR Sastry and C.K. Thomas.
4. Livestock and Poultry Production by H. Singh and E.N. Moore.
5. Handbook of Animal Husbandry Published by ICAR New Delhi.
6. Thronton's Meat Hygiene by Thronton.
7. Dairy Farming: Extension booklet No. PAU/1992/F/29/P published by Communication Centre, PAU, Ludhiana (Punjab).
8. "Dudharaun Layee Dharay" (Punjabi) Extension booklet No. PAU/1993/F/560 Published by PAU, Ludhiana.
9. Dairy Farm Record Keeping, PAU, Ludhiana (Punjabi) Booklet.
10. Feeding Dairy Cattle Extension booklet published by NDRI, Karnal. (English).

**SEMESTER–VI**

**RSL–321**

**RUSSIAN**

**PAPER–I (Written) GRAMMAR & an Introduction to Literature**

**Time: 3 Hrs.**

**Max. Marks: 80**

1. Grammar from text-book **Marks: 30**
  
2. Composition (one out of four topics) **Marks: 10**
  - Revision of all cases in singular & plural (nouns, adjectives & pronouns)
  - Aspects of verbs, Verbs of motion with & without prefixes, The relative pronoun “           ”, its declension & usage, Participles & participle constructions, Short form of the past participle, Active & passive voice, Direct & indirect speech, Gerund.

**Composition Topics:**

, , , , , . (One out of given three)

**Introduction to Literature**

Biography of the writers: A S Pushkin, L. Tolstoy, M. Gorky, M. Sholokhov, M. Lermontov, Gogol, Chekhov. (One out of given three to be attempted) **Marks: 10**

1. Three questions out of five based on the works of these writers, like, “Tolstii u Tonkii, “Pepe”, “Sudba Cheloveka”, “Ya vas lubil”, “Parus”. **Marks: 30**

**SEMESTER–VI****RSL–321:****RUSSIAN****PAPER–II (ORAL)****Max. Marks: 20**

- Reading of a text

**Marks: 05**

- Conversation

**Marks: 10**

- Retelling of a small text in Russian

**Marks: 05**

(Besides general talk it includes questions on the prescribed text of Q.1)

**Prescribed Text-Book:**

“RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 53 to 62)

**Recommended Books:**

1. Langenscheidt Pocket Russian Dictionary.
2. Russian for Indians by Hem Chandra Pande.
3. “RUSSIAN” – by Ovsienko Y.G. & Skopina (Part-I & II).

**SEMESTER–VI**

**FRL–321**

**FRENCH**

**PAPER–I (WRITTEN) (COMPOSITION, GRAMMAR & COMPREHENSION)**

**Time: 3 Hrs.**

**Max. Marks: 80**

**A. Composition**

i) An official letter in French (one out of two)

**Marks: 10**

**B. Grammar**

i). Questions on applied grammar pertaining to the text  
(Exercises from the textbook)

**Marks: 30**

**Topics for official letters:**

i. Demande d'emploi

ii. Demande de renseignements p. ex.:

- Alliance Francaise

- Ambassade de France

- Bureau de tourisme

- Agence de voyage

iii. Commander des articles

iv. Demander de conge

**TRANSLATION:**

1. Translation from French into English. (Passage)

**Marks: 10**

2. Translation from English into French. (Short sentences)

**Marks: 10**

**Note: Glossary of difficult words may be given for translation purpose in the question paper.**

**TEXT:**

1. Questions from main texts of lessons from the text book,  
excluding articles, extracts etc. given after the lessons.  
(5 out of 7 questions to be attempted)

**Marks: 10**

2. Objective type questions pertaining to the various aspects of  
French civilization covered in the textbook. (10 questions out  
of 15 in the form of fill in the blanks or multiple choices to be attempted).

**Marks: 10**

**SEMESTER–VI****FRL–321:****FRENCH****PAPER–II (ORAL)****Max. Marks: 20**

- Reading of a text

**Marks: 05**

- Conversation

**Marks: 10**

- Retelling of a small text in French

**Marks: 05****Prescribed Textbook:**

“**CONNEXIONS-III**” (Units 7-12) by Regine Merieux & Yves Loiseau, Published by Didier

**Recommended Book :**

**Nouveau Sans Frontières III** by Philippe Dominique & Jacky Girardet

**SEMESTER–VI****URDU****URL–302: HISTORY OF URDU LITERATURE****Time: 3 Hours****Max. Marks: 100**

1. Urdu ka Ahd-e-Zareen, with special reference to the following:-  
Zauq, Ghalib, Momin and Zafar
2. Urdu Sha'iri Ke Naye Rujhanat with special reference to the following poets:  
Azad, Hali, Chakbast and Iqbal
3. Taraqqi Pasand Tehrik Aur Urdu Sha'iri with special reference to the following poets:  
Majaz, Faiz, Ali Sardar Jafri and Jazbi
4. Urdu Nasr Ka Irtiqa Aur Fort William College
5. Urdu Nasr Ka Ahd-e-Zareen with special reference to the following:  
Sir Syed Ahmad Khan, Shibli Naumani and Hali
6. Modern Urdu Friction:  
General information about the contribution of:  
Krishan Chander, Rajinder Singh Bedi, Qurratul Ain Haider and Ismat Chughtai and Kanhiya Lal Kapoor

**SEMESTER–VI****URDU****BOOKS RECOMMENDED:**

1. Mukhtsar Tarikh-e- Adab-e-Urdu by Syed Ejaz Husain, Educational Book House, AMU Market, Aligarh – 202002 (UP)
2. Tarikh Adab Urdu by Ram Babu Sexena, Educational Book House, AMU Market, Aligarh – 202002 (UP)
3. Urdu Adab Ki Tarikh by Azeem-ul-Haq Junaidi, Educational Book House, AMU Market, Aligarh – 202002 (UP)
4. Urdu Zaban-o-Adab ka Khaka by Khushhal Zaidi, Edara Bazme Khizre Rah, 80- Ghaffar Manzil Jamianagar, New Delhi, 110025.

**SEMESTER–VI**

**PERSIAN**

**PRL–302: COMPOSITION AND GRAMMAR**

**Time: 3 Hours**

**Max. Marks: 100**

**Composition:**

(a) **Composition:** Essay in Persian on any one of the following:-

Gulistan-e-saadi, Hafiz, Farsi Ghazal, Farsi Qasida , Masnavi-e-Manavi , Sarmad, Bahar ,  
Parveen, Umar Khayam & Khusru bahaisiyat Ghazalgo

b) **Grammar:** Definitions and examples of the following:

1) **ASNAF-E-SHA'RI:** Ghazal, Qaseeda, Masnavi, Rubai etc.

2) **AJZA-E-SHER:** Matla, Maqta, Husan-e-Matla, Qafiya, Radeef, Tashbeeb,  
Gurez, Dua, Rukhsat, Salam-o-Noha

3) **SANAE-O-BADAE:** Tajnis (Tajnis-e-Taam, Tajnis-e-Murakkab, Tajnis-e-  
Khatti)

Talmih, Ista'ara, Kinaya, Tashbeeh, Ihaam, Mubaligha, Husan-e-Ta'leel,

Tajahul-e-Arifana, Siyaqat-ul-Adad, Mira'tun-Nazir –o- Tarse'a

**SEMESTER–VI**

**PERSIAN**

**BOOKS RECOMMENDED:**

1. Naseem-e-Balaghat by Jalaluddin Jafri, 2- Katra Road, Allabhabad – 211002
2. Ma’ani-o-Bayan. By Dr. Jalil Tajlili, Tehran Edition.
3. Al-Mu’ajjam by Shams Qais Razi, Edara Musannifin, hydeabad.

**SEMESTER-VI**

**SANSKRIT (ELECTIVE)**  
१००; ] I kfgR; rFkk fucl/k½

I e; &3 ?k. Vs

i wkkzd&100

i z u&i = dk ek/; e fglnh gkskA mYkj I d'r@fglnh@i atkch@vaxst h ea gks I d'rs gA

i z ui = fuekZ k funZ k &

- |     |  |           |
|-----|--|-----------|
| I   | Hkxonxhirk ¼}rh; v/; k; ½ ea I s nl 'ykd ndj i kp dh I id x 0; k[; k iNh tk, & | 5x7 = 35  |
| II  | Hkxonxhirk ¼}rh; v/; k; ½ ea I s pkj i z u ndj nks dk mYkj iNh tk, &           | 2x7½ = 15 |
| III | ykd I kfgR; ea I s pkj dfr; ka ndj nks dk I kekl; i fjp; iNh tk, &             | 2x10 = 20 |
| IV  | nl I eLrin@foxg ndj i kp dk foxg@I eLrin iNh tk, &                             | 5x2 = 10  |
| V   | pkj vydkj ndj nks dk y{k.k , oa mnkgj.k I fgr Li "Vhdj.k iNh tk, &             | 2x5 = 10  |
| VI  | rhu fucl/k ndj I d'r ea , d fucl/k nl i fDr; ka ea fy[kok; k tk, &             | 1x10 = 10 |

i kB; Øe &

½d½ Hkxonxhirk ¼}rh; v/; k; ½

50 vad

i z uk ds fy, fu/kkZj r fcInq &

- (i) I kj
- (ii) d".k&vtu I okn
- (iii) fu" dke deZ ; ks
- (iv) fLFkrik y{k.k bR; kfnA

- ¼½ ykdd I kfgR; & fuEufyf[kr dfr; ka dk I keU; i fjp; & 20 vð  
Loluokl onÿke} vfhkKku' kkdÿrye} dæj I Ehkoe} mÿkj jkep fj re} dknEcj h} f' k' kj kyo/k}  
fdjkrktÿh; e} fgrki ns' k} i prU=A
- ¼½ I ekl & v0; ; hHkko A 10 vð
- ¼½ vyðkj & mi ek] mRi gkk] : i d] n"VkuR] ; ed] 0; frjð] vuij kl 10 vð  
rFkk fo' ks'kkfDrA
- ¼¾ fucU/k & 1- I d'rHkk"kk; k% egÿoeA 10 vð  
2- ee fi z; a i rdeA  
3- ee fi z; dfo%A  
4- vkn' k% Nk=%A  
5- I R; eð t; rA  
6- I RI æfr%A

**SEMESTER–VI**

**FUNCTIONAL SANSKRIT (VOCATIONAL)**

**Time:- 3 hours**

**Maximum Marks: 100**

**Written: 80**

**Practical: 20**

ukV & iZu i = fglnh ea gksxkA

iZu i = fuekZk funZk

5 प्रश्न देकर 3 का उत्तर देने के लिए कहा जाये।

3X20 = 60

भाग ख में 4 प्रश्न देकर 2 का उत्तर देने के लिए कहा जाये।

2X10 = 20

i kB; Øe &

efrZ fr"Bki u fof/k%A

Hkkj rh; ; kuka thous orkuka egYoarRi kyua pA

orkuk I keku; i fjp; A

I R; ukjk; .ki wtkor fof/k%A

x.ki fr i wtk orkfuA

y{ehi wtk orkfuA

I jLorh i wtk oreA

f'koi wtk oreA

**SEMESTER–VI**

**ENGLISH (COMPULSORY)**

**Time: 3 Hours**

**Max. Marks: 50**

**Texts Prescribed:**

1. *The English Teacher* by R.K. Narayan
2. *Glimpses of Theatre*, Guru Nanak Dev University Amritsar.

**Course Contents:**

1. The study of the whole text of the novel, *The English Teacher*
  2. The study of the following one-act plays from the prescribed book, *Glimpses of Theatre*
    - i) “The Will”
    - ii) “Villa for Sale”
    - iii) “Progress”
    - iv) “The Monkey’s Paw”
    - v) “Sorry Wrong Number”
- Essay Writing

**Instructions for the Paper Setter and Distribution of Marks:**

**Note: The paper setters should avoid questions of theoretical nature on English Grammar.**

**The question paper will consist of three sections and the distribution of marks will be as under:**

**Section A: 10 Marks**

**Section B: 24 Marks**

**Section C: 16 Marks**

**Section–A:**

- I. SIX questions (three questions based on the prescribed one-act plays from the textbook, *Glimpses of Theatre* and three questions based on the novel, *The English Teacher* requiring very short answers based on the close reading of the prescribed novel and one-act plays shall be set and examinees will be expected to answer any FIVE. **(2x5=10 Marks)**

**Section–B:**

- II. THREE questions requiring brief descriptive answers based on character, tone, plot and theme(s) in the prescribed one-act plays will be set and examinees will be expected to attempt any TWO. **(6x2= 12 Marks)**

- III. THREE questions on central idea, theme, tone or style etc. of the prescribed novel will be set for the students to attempt any TWO of these questions. **(6x2= 12 Marks)**

**Section–C:**

- IV. ONE question requiring the students to write an essay on one of the three given topics will be set. **(1x8=8 Marks)**
- V. TWO essay type questions (one from the prescribed one-act plays and one from the prescribed novel) will be set for the students to answer any ONE of these questions. **(1x8= 8 Marks)**

**SEMESTER–VI  
ENGLISH (ELECTIVE)  
MODERN ENGLISH NOVEL**

**Time: 3 Hours**

**Max. Marks: 100**

**Texts Prescribed:**

1. *So Many Hungers* by Bhabani Bhattacharya
2. *The Power and the Glory* by Graham Greene
3. *Background to the Study of English Literature* by B. Prasad, Macmillan India Limited  
(Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III)

**Instructions for the Paper Setter and Distribution of Marks:**

The question paper will consist of three sections and distribution of marks will be as under:

Section A: 20 Marks

Section B: 48 Marks

Section C: 32 Marks

**Section–A**

**Note:** The examinees will be required to answer all the **TEN** questions set as per the following scheme:

1. Three very short-answer questions (approximately 5 lines each) from *So Many Hungers*
2. Three very short-answer questions (approximately 5 lines each) from *The Power and the Glory*
3. Four very short-answer questions (approximately 5 lines each) from *Background to the Study of English Literature* by B. Prasad. (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III) The questions shall deal with simple definitions and examples of literary terms introduced in the book. (10 x2=20 Marks)

### Section–B

**Note:** The examinees will be required to answer **EIGHT** questions set as per the following scheme:

1. The examinees will be required to answer **THREE** short-answer questions out of the **FOUR** questions set from the novel, *So Many Hungers*. Each answer should be written in about 10-15 sentences.
2. The examinees will be required to answer **THREE** short-answer questions out of the **FOUR** questions set from the novel, *The Power and the Glory*. Each answer should be written in about 10-15 sentences.
3. The examinees will be required to answer **TWO** short-answer questions out of the **FOUR** questions set from the prescribed book, *Background to the Study of English Literature*. (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III) Each answer should be written in about 10-15 sentences.

**Note:** Questions of both theoretical and practical nature requiring understanding of literary concepts and developments may be asked. At least two questions may be set on the analysis of passages/poems that clearly exhibit the use of literary devices discussed in the book.

(8x6=48 Marks)

### Section–C

The examinees will be required to answer any **two** questions (each of 16 marks) out of the three questions set as per the following scheme:

1. One essay type question (3 to 4 pages) from *So Many Hungers*
2. One essay type question (3 to 4 pages) from *The Power and the Glory*
3. One essay type question (3 to 4 pages) on the structure/ development of a genre as discussed in B. Prasad's book. (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III)

(2x16=32 Marks)

**SEMESTER–VI**

**FUNCTIONAL ENGLISH (VOCATIONAL)**

**OFFICE COMMUNICATION FOR BUSINESS**

**Time: 3 Hrs.**

**Total Marks: 100**  
**Theory Paper: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setter and Distribution of Marks:**

**Theory: 75 Marks**

The question paper will consist of three sections and distribution of marks will be as under:

**Section-A: 16 Marks**

**Section-B: 35 Marks**

**Section–C: 24 Marks**

**Practical: 25 Marks**

**SECTION–A**

**EIGHT** very short answer questions requiring students to define, describe, illustrate the concepts, or terms or else requiring the students to tick the most appropriate option or a substitute word out of those provided by the paper setter in the form of multiple choice will be set. The students will be required to attempt all the questions. **(8x2=16 Marks)**

**SECTION–B**

**SEVEN** questions of practical nature will be set to test various skills as required in writing notices, agenda and minutes and business correspondence etc. The students will be required to attempt any **FIVE** of these tasks/ questions. Data for use in these tasks may be provided by the examiner. However this is not a necessary condition. **(7x5=35 Marks)**

**SECTION–C**

**ONE** question (with internal choice) requiring students to present a likely telephonic conversation on a business topic in the written mode. **12 Marks**

**ONE** question (with internal choice) requiring students to write notes on description of products, services and process or customer complaint. **12 Marks**

**Objectives:**

- To equip learners with language proficiency in business/work situations.
- To equip learners with techniques of written communication in business situations.
- To expand vocabulary and develop reading comprehension of material related to business.
- To make learners aware of features of business communication through various modes.

**Course Contents:****UNIT–I****Business Communication:**

- The format of business letters and faxes: Different types of formats, address, opening and closing, subject, heading, subheading, numbering etc.
- Writing letters of application with curriculum vitae/resume, letters of invitation, reply of invitation, enquiry, conference arrangements, reference, announcing forthcoming events, products, visits, making booking for trade fairs, complaints and replies to complaints, apologies, thanks, etc.
- Writing office memos and notes.

**UNIT–II****Business Meetings:**

- Writing notices, agendas, resolutions, minutes of business meetings, preparing notes for a meeting.

**UNIT–III****Telephonic Interaction in Business:**

- Taking messages, making appointments, making enquiries regarding travel bookings, hotel bookings, services, business trading (stocks etc.), placing orders, receiving orders, apologizing, complaining, giving information, etc.

**UNIT–IV****Dealing with Clients and Customers:**

- Describing products and services
- Describing processes
- Persuading clients
- Negotiating and agreeing

**Suggestions for Teaching:**

Along with training in written communication in business, role play, simulation of business situations and playing tape recorded material (e.g. Interview, telephonic conversations) may be used to equip the learners with language proficiency required in work situations. The same may be tested in practical.

**SEMESTER–VI**

**FUNCTIONAL ENGLISH (VOCATIONAL)**

**(PRACTICAL)**

**Marks: 25**

There will be a practical task of 25 marks on different business tasks performed orally or in written mode. The external examiner for practical work shall also give due weightage to the training file of each student at the time of evaluation.

**Books Recommended:**

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *A Course in Grammar and Composition* by Geetha Nagaraj, Foundation Books, 2006.

**SEMESTER-VI**

**PUNJABI (COMPULSORY)**  
**ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

1. ਕਾਵਿ ਗੌਰਵ (ਪਹਿਲੇ ਛੇ ਕਵੀ)  
(ਸੰਪਾ. ਬਿਕਰਮ ਸਿੰਘ ਘੁੰਮਣ, ਕਰਮਜੀਤ ਕੌਰ),  
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ,  
(ਸ਼ੇਖ ਫਰੀਦ, ਸ਼ਾਹ ਹੁਸੈਨ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ, ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ,  
ਵਾਰਿਸ ਸ਼ਾਹ, ਸ਼ਾਹ ਮੁਹੰਮਦ)
2. ਧਰਤੀਆਂ ਦੇ ਗੀਤ (ਸਫ਼ਰਨਾਮਾ), ਬਰਜਿੰਦਰ ਸਿੰਘ ਹਮਦਰਦ,  
ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ
3. ਲੇਖ ਰਚਨਾ (ਵਿਦਿਅਕ ਅਤੇ ਸਭਿਆਚਾਰਕ ਵਿਸ਼ਿਆਂ ਬਾਰੇ)
4. ਸੰਖੇਪ ਰਚਨਾ
5. ਵਿਆਕਰਣ :  
(ੳ) ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ  
(ਅ) ਕਿਰਿਆ ਵਾਕੰਸ਼ : ਪਰਿਭਾਸ਼ਾ, ਬਣਤਰ ਤੇ ਪ੍ਰਕਾਰ  
(ੲ) ਕਾਰਕ ਅਤੇ ਕਾਰਕੀ ਸਬੰਧ

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ੰਸਾ ਸਾਹਿਤ |ਵਾਕਾਖਿਆ/|ਵਸ਼ਾ-ਵਸਤੂ/ਸਾਰ (ਦੋ ਵਿਚੋਂ ਇਕ) 10 ਅੰਕ
2. ਸਮਾਜ ਸਭਿਆਚਾਰ ਪਰਿਪੇਖ/ ਸਫ਼ਰਨਾਮੇ ਦੇ ਤੌਰ ਤੇ (ਦੋ ਵਿਚੋਂ ਇਕ) 10 ਅੰਕ
3. ਲੇਖ ਰਚਨਾ : ਤਿੰਨਾਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ ਉਤੇ 05 ਅੰਕ
4. ਸੰਖੇਪ ਰਚਨਾ 05 ਅੰਕ
5. ਨੰਬਰ 5 ਉਤੇ ਨਿਰਧਾਰਿਤ ਵਿਆਕਰਣ ਵਿਚੋਂ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ੰਸਾ 10 ਅੰਕ
6. ਉਪਰੋਕਤ ਲੜੀ ਨੰਬਰ 1 ਅਤੇ 2 ਦੀਆਂ ਪੁਸਤਕਾਂ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ  
5 ਪ੍ਰਸ਼ੰਸਾ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਦਾ ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ

5X2=10 ਅੰਕ

**SEMESTER-VI**

**PUNJABI (ELECTIVE)**

**ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ : 100

1. **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1700 ਈ. ਤਕ)**  
(ਸੰਪਾ. ਡਾ. ਧਰਮ ਸਿੰਘ, ਡਾ. ਹਿਰਦੇਜੀਤ ਸਿੰਘ ਭੋਗਲ),  
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007.  
ੳ) ਸਾਹਿਤਕ ਰੂਪ, ਧਾਰਾਵਾਂ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ  
ਅ) ਸਾਹਿਤਕ ਰੂਪ ਦੇ ਸਮੁੱਚੇ ਵਿਕਾਸ ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।  
(ਵਿਅਕਤੀਗਤ ਸਾਹਿਤਕਾਰ ਸੰਬੰਧੀ ਪ੍ਰਸ਼ਨ ਨਹੀਂ ਪੁੱਛਿਆ ਜਾਵੇਗਾ)  
ਉਪਰੋਕਤ ਦੋਹਾਂ ਭਾਗਾਂ ਵਿਚੋਂ ਦੋ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਪ੍ਰੀਖਿਆਰਥੀਆਂ ਨੇ ਇਕ ਇਕ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨਾ ਹੋਵੇਗਾ।  

20+20 = 40 ਅੰਕ
2. **ਸਾਹਿਤ ਅਤੇ ਹੋਰ ਅਨੁਸ਼ਾਸਨ**  
ਸਾਹਿਤ ਦੇ ਤੱਤ, ਸਾਹਿਤ ਅਤੇ ਸਮਾਜ, ਸਾਹਿਤ ਅਤੇ ਸ਼ਖਸੀਅਤ, ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ (ਤਿੰਨ ਵਿਚੋਂ ਦੋ)  

10+10 = 20 ਅੰਕ
3. (ੳ) **ਛੰਦ** : ਦੋਹਿਰਾ, ਸੋਰਠਾ, ਕਬਿੱਤ, ਕੋਰੜਾ, ਚੋਪਈ, ਸਿਰਖੰਡੀ, ਸਵੱਈਆ ਬੈਂਤ :  
ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ (ਚਾਰ ਵਿਚੋਂ ਦੋ)  

5+5 = 10 ਅੰਕ

  
(ਅ) **ਰੇਖਾ ਚਿੱਤਰ** ; ਨਾਟਕ, ਸਫ਼ਰਨਾਮਾ, ਨਿਬੰਧ, ਜੀਵਨੀ, ਸਵੈ-ਜੀਵਨੀ : ਪਰਿਭਾਸ਼ਾ,  
ਪ੍ਰਕਾਰ ਤੇ ਤੱਤ (ਦੋ ਵਿਚੋਂ ਇਕ)  

10 ਅੰਕ
4. **ਵਿਹਾਰਕ ਆਲੋਚਨਾ :**  
ੳ. ਵਿਹਾਰਕ ਆਲੋਚਨਾ : ਸਿੱਧਾਂਤਕ ਪੱਖ  
ਅ. ਵਿਹਾਰਕ ਆਲੋਚਨਾ (ਕਾਵਿ ਦੇ ਪ੍ਰਸੰਗ ਵਿਚ)  
(ਪੰਜਾਬੀ ਕਾਵਿ ਸੰਗ੍ਰਹਿ (1700 ਈ. ਤਕ)/ਸੰਪਾ. ਡਾ. ਗੁਰਸ਼ਰਨ ਕੌਰ ਜੱਗੀ ਤੇ  
ਮਾਨ ਸਿੰਘ ਢੀਡਸਾ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2007.  
ਹਰੇਕ ਕਵੀ ਦੇ ਪਹਿਲੇ ਪੰਜ-ਪੰਜ ਸ਼ਬਦ/ਬੰਦ/ਸਲੋਕ/ਪਦੇ/ਕਾਫ਼ੀਆਂ ਦੇ ਆਧਾਰ ਉੱਪਰ।  

20 ਅੰਕ

**SEMESTER-VI**

**FUNCTIONAL PUNJABI (VOCATIONAL)**  
**ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ (ਫੰਕਸ਼ਨਲ)**

**ਪੰਜਾਬੀ ਵਿਚ ਕੰਪਿਊਟਰ ਦੀ ਵਰਤੋਂ ਦਾ ਅਭਿਆਸ**

**ਕੁਲ ਅੰਕ : 100**

**ਸਮਾਂ : 2 ਘੰਟੇ**

**ਪ੍ਰੈਕਟੀਕਲ ਅੰਕ: 80**  
**ਮੌਖਿਕ ਪ੍ਰੀਖਿਆ : 20**

**ਪ੍ਰੈਕਟੀਕਲ**

**ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਲੇਖ, ਪੱਤਰ, ਨੋਟ ਆਦਿ ਕੰਪਿਊਟਰ ਰਾਹੀਂ ਤਿਆਰ ਕਰਕੇ ਪ੍ਰਿੰਟ-ਆਊਟ ਲੈਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ। (ਪ੍ਰੈਕਟੀਕਲ ਦੇ 80 ਅੰਕ ਹੋਣਗੇ)
2. ਵਿਦਿਆਰਥੀ ਕੋਲੋਂ ਕੰਪਿਊਟਰ ਅਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ ਬਾਰੇ ਮੌਖਿਕ ਪ੍ਰਸ਼ਨ ਵੀ ਪੁਛੇ ਜਾਣਗੇ। (ਮੌਖਿਕ ਪ੍ਰੀਖਿਆ ਦੇ 20 ਅੰਕ ਹੋਣਗੇ)।

- (ੳ) **ਪੰਜਾਬੀ ਵਰਡ ਪਰੋਸੈਸਿੰਗ** : ਸਿਸਟਮ ਖੋਲ੍ਹਣਾ, ਸਿਸਟਮ ਦੀ ਚੋਣ : ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਚੋਣ-ਅੰਮ੍ਰਿਤ ਲਿਪੀ, ਗੁਰਬਾਣੀ ਲਿਪੀ, ਗੁਰਬਾਣੀ ਕਲਮੀ, ਫਾਇਲ ਬਨਾਉਣੀ, ਸਮਗਰੀ ਦੀ ਪ੍ਰਕਿਰਤੀ ਅਨੁਸਾਰ ਪੰਨੇ ਦੀ ਸੈਟਿੰਗ, ਡਾਇਰੈਕਟਰੀ ਬਨਾਉਣੀ ਅਤੇ ਫਾਇਲ ਨੂੰ ਸੇਵ ਕਰਨਾ ।
- (ਅ) ਹਾਰਡ ਡਿਸਕ ਤੋਂ ਫਲੋਪੀ ਜਾਂ ਪੈਨ-ਡਰਾਈਵ ਅਤੇ ਜਾਂ ਫਲੋਪੀ ਤੇ ਪੈਨ-ਡਰਾਈਵ ਤੋਂ ਹਾਰਡ ਡਿਸਕ ਉਤੇ ਸਮੱਗਰੀ ਪੈਨ-ਡਰਾਈਵ 'ਤੇ ਤਬਦੀਲ ਕਰਨੀ, ਫੀਡ ਕੀਤੀ ਸਮਗਰੀ ਦਾ ਪ੍ਰੀਵਿਊ ਅਤੇ ਪ੍ਰਿੰਟ ਲੈਣਾ ; ਰੀਸੈਟਿੰਗ, ਕੁਰੈਕਸ਼ਨ ਅਤੇ ਡਬਲ ਸਕਰਿਪਟਿੰਗ ਦਾ ਅਭਿਆਸ ਕਰਨਾ, ਫੌਟ ਦਾ ਆਕਾਰ ਚੁਣਨਾ, ਫੀਡ ਕੀਤੀ ਸਮੱਗਰੀ ਦੇ ਭਾਗਾਂ ਨੂੰ ਇਕ ਥਾਂ ਤੋਂ ਦੂਜੀ ਥਾਂ ਲਿਜਾਣਾ ਅਤੇ ਪੈਰਾ ਸੈਟਿੰਗ ਕਰਨਾ ।
- (ੲ) ਪੰਜਾਬੀ ਦੀ ਵੈਬਸਾਈਟ ਖੋਲ੍ਹਣਾ, ਪੰਜਾਬੀ ਵਿਚ ਈ.ਮੇਲ ਭੇਜਣ ਦਾ ਅਭਿਆਸ ਕਰਨਾ ।

**SEMESTER-VI**

**BCG-102**

**ਮੁਢਲੀ ਪੰਜਾਬੀ**  
**(ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ ਤੇ ਸੱਭਿਆਚਾਰ)**  
**(In Lieu of Punjabi Compulsory)**

**Time: 3 Hrs.**

**Marks: 50**

**ਅੰਕਾਂ ਦੀ ਵੰਡ :-**

**ਭਾਗ ਓ:-** ਇਸ ਭਾਗ ਵਿੱਚ 15 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਵਲੋਂ ਕਿਸੇ 10 ਦੇ ਉੱਤਰ 30-40 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 2 ਅੰਕ ਹੋਣਗੇ।

**ਭਾਗ ਅ:-** ਇਸ ਭਾਗ ਵਿੱਚ 6 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਕਿਸੇ 3 ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ 400-500 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਦੇ 10 ਅੰਕ ਹਨ।

- 1. ਰਣਜੀਤ ਸਿੰਘ ਅਧੀਨ ਪੰਜਾਬ ਦਾ ਏਕੀਕਰਨ ਅਤੇ ਵਿਸਥਾਰ :-** 1790 ਵਿੱਚ ਪੰਜਾਬ ਦੇ ਰਾਜਨੀਤਿਕ ਹਾਲਾਤ, ਰਣਜੀਤ ਸਿੰਘ ਦਾ ਜੀਵਨ ਅਤੇ ਜਿੱਤਾਂ, ਅੰਮ੍ਰਿਤਸਰ ਦੀ ਸੰਧੀ, ਰਣਜੀਤ ਸਿੰਘ ਦੇ ਅੰਗਰੇਜ਼ਾਂ ਨਾਲ ਸਬੰਧ, ਸੈਨਿਕ ਪ੍ਰਬੰਧ, ਪੰਜਾਬ ਦਾ ਮਿਲਾਨ ਬ੍ਰਿਟਿਸ਼ ਰਾਜ ਵਿੱਚ।
- 2. ਰਾਜਨੀਤਿਕ ਜਾਗ੍ਰਿਤੀ ਅਤੇ ਸਮਾਜਿਕ-ਧਾਰਮਿਕ ਸੁਧਾਰ ਅੰਦੋਲਨ :-** 1857 ਦਾ ਵਿਦਰੋਹ ਅਤੇ ਪੰਜਾਬ, ਕੂਕਾ ਅੰਦੋਲਨ, ਗਦਰ ਅੰਦੋਲਨ, ਆਰੀਆ ਸਮਾਜ, ਨਿਰੰਕਾਰੀ ਤੇ ਨਾਮਧਾਰੀ, ਸਿੰਘ ਸਭਾ ਅੰਦੋਲਨ, ਗੁਰਦੁਆਰਾ ਸੁਧਾਰ ਅੰਦੋਲਨ ਅਤੇ ਅਕਾਲੀ।
- 3. ਵੰਡ ਅਤੇ ਸੁਤੰਤਰਤਾ :-** ਜਲਿਆਵਾਲਾ ਬਾਗ ਹੱਤਿਆਕਾਂਡ, ਅਸਹਿਯੋਗ ਅੰਦੋਲਨ, ਨੌਜਵਾਨ ਭਾਰਤ ਸਭਾ, ਸਿਵਲ ਨਾ ਫੁਰਮਾਨੀ ਅੰਦੋਲਨ, ਭਾਰਤ ਛੱਡੋ ਅੰਦੋਲਨ, ਮਹਾਨ ਸੁਤੰਤਰਤਾ ਸੈਨਾਨੀਆਂ ਦਾ ਯੋਗਦਾਨ-

# ਲਾਲਾ ਲਾਜਪਤ ਰਾਏ

# ਮਾਸਟਰ ਤਾਰਾ ਸਿੰਘ

# ਸ.ਕਰਤਾਰ ਸਿੰਘ ਸਰਾਭਾ

# ਸ. ਭਗਤ ਸਿੰਘ

# ਸ.ਊਧਮ ਸਿੰਘ

# ਸ. ਖੜਕ ਸਿੰਘ

**ਸਬੰਧਤ ਪੁਸਤਕਾਂ:-**

1. ‘ਰਣਜੀਤ ਸਿੰਘ’, ਨਰਿੰਦਰ ਕ੍ਰਿਸ਼ਨ ਸਿਨਹਾ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
2. ‘ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ’, ਸੀਤਾ ਰਾਮ ਕੋਹਲੀ, ਆਤਮਾਰਾਮ ਐਂਡ ਸੰਨਜ, ਪਬਲਿਸ਼ਰਜ਼ ਐਂਡ ਬੁੱਕ ਸੈਲਰਜ਼ ।
3. ‘ਸਿੱਖ ਹਿਸਟਰੀ’ 1469-1988 ਖੁਸ਼ਵੰਤ ਸਿੰਘ, ਨਵਯੁੱਗ ਪਬਲਿਸ਼ਰਜ਼, ਨਵੀ ਦਿੱਲੀ ।
4. ‘ਸਿੱਖ ਇਤਿਹਾਸ’ ਭਾਗ ਦੂਜਾ (1839-2004), ਖੁਸ਼ਵੰਤ ਸਿੰਘ ਅਨੁਵਾਦਕ ਡਾ. ਗੁਰਦਰਸ਼ਨ ਸਿੰਘ ਔਲਖ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ ਲੁਧਿਆਣਾ।
5. ‘ਸਿੱਖ ਇਤਿਹਾਸ’ (1526-1849) ਬਿਸ਼ਨ ਦਾਸ, ਮਲਹੋਤਰਾ ਬ੍ਰਦਰਜ਼ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ ।
6. ‘ਪੰਜਾਬ ਦੀਆਂ ਲਹਿਰਾਂ’ (1850-1910), ਸ਼ਮਸ਼ੇਰ ਸਿੰਘ ‘ਅਸ਼ੋਕ’, ਪ੍ਰਕਾਸ਼ਕ ਕਵਿਰਾਜ ਨਰਾਇਣ ਸਿੰਘ ਵੱਲਭ ਨਿਆਮਤ ਪੁਰੀ ।
7. ‘ਪੰਜਾਬ ਦਾ ਵਿਰਸਾ’, ਪ੍ਰਿਥੀਪਾਲ ਸਿੰਘ ਕਪੂਰ, ਨਿਉ ਬੁੱਕ ਕੰਪਨੀ, ਜਲੰਧਰ।
8. ‘ਸਿੱਖ ਇਤਿਹਾਸ’, ਕਨਿੰਘਮ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ ।
9. ‘ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ’ (1791-1966) ਸ਼ਿਵ ਗਜਰਾਨੀ, ਮਦਨ ਪਬਲੀਸ਼ਰਜ਼, ਪਟਿਆਲਾ ।

**SEMESTER-VI  
HINDI (ELECTIVE)**

यूक्यु फो/क, ३ वक/क/द क्यु] फुका/क य[कु रफक i क्ज Hkkf"kd 'kCnkoyh

l e; & 3 ?k. Vs

i w kkd% 100

uks/% ; g iz u&i = rhu Hkkxka ea foHkDr gkxka

[k.M&, d

इस भाग में दस प्रश्न पूछे जाएंगे। इसका पांच पंक्तियों में उत्तर देना होगा। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न दो अंक का है। कुल अंक 20 हैं।

[k.M&nks

इस भाग में 12 प्रश्न पूछे जाएंगे जिन में से 8 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 48 हैं।

[k.M&rhu

इस भाग में 4 प्रश्न पूछे जाएंगे। जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। प्रत्येक प्रश्न का उत्तर 5 पृष्ठों का होगा। कुल अंक 32 हैं।

fu/kkfjr i kB; dæ

1. गद्य विविधा: संपादक डॉ. विनोद कुमार तनेजा तथा हरीश सूद 'निश्चिन्त' प्रकाशक, गुरु नानक देव यूनिवर्सिटी, अमृतसर,
2. हिन्दी साहित्य का इतिहास: आधुनिक काल-निर्धारित परिक्षेत्र
  - भारतेन्दु युग: सामान्य परिचय
  - द्विवेदी युग: सामान्य परिचय
  - छायावाद: प्रमुख कवि तथा काव्यगत विशेषताएं
  - प्रगतिवाद: प्रमुख कवि तथा काव्यगत विशेषताएं
  - प्रयोगवाद: प्रमुख कवि तथा तारसप्तक का मूल्यांकन
  - नई कविता: अभिप्राय और प्रमुख विशेषताएं
  - उपन्यास तथा कहानी विधा विकास
  - हिन्दी आलोचना और आचार्य रामचंद्र शुक्ल
3. पारिभाषिक शब्दावली: अंग्रेजी से हिन्दी, हिन्दी से अंग्रेजी (प्रचलित वाक्यांश या अभिव्यक्तियां)(संलग्न)
4. निबंध: राजभाषा एवं राष्ट्रभाषा हिन्दी

fo"k; kupyly vad foHkktu

1. प्रथम खंड में पांच अंग्रेजी से हिन्दी, पांच हिन्दी से अंग्रेजी पारिभाषिक शब्दावली से संबंधित प्रश्न होंगे।
2. दूसरे खण्ड में चार प्रश्न सप्रसंग व्याख्याओं के होंगे। जिनमें से दो करनी अनिवार्य होंगी। चार प्रश्न पाठ्य-पुस्तक से होंगे। जिनमें से दो प्रश्न करने होंगे। दो प्रश्न इतिहास और दो निबंध से संबंधित होंगे। जिनमें से एक-एक प्रश्न का उत्तर अनिवार्य है। कुल आठ प्रश्नों के उत्तर देने हैं।
3. चतुसरे खण्ड में दो प्रश्न पाठ्य-पुस्तक से संबंधित होंगे और दो प्रश्न इतिहास से संबंधित होंगे। जिनमें से एक-एक का उत्तर अनिवार्य है।

dk; kly; h 'kCnkoyh

1.	Draft for approval	अनुमोदन के लिए मसौदा
2.	For early approval	शीघ्र आदेश के लिए
3.	For perusal	अवलोकन के लिए/देखने के लिए
4.	For favour of orders	आदेश के लिए
5.	For favourable action	अनुकूल कार्रवाई के लिए
6.	For signature	हस्ताक्षर के लिए
7.	Applicant details and Address	आवेदक का ब्यौरा एवं पता
8.	To see and Discuss	मिलें और विमर्श करें
9.	Forwarded and recommended	अग्रेषित और संस्तुत/सिफारिश की जाती है
10.	For Sympathetic consideration	सहानुभूतिपूर्वक विचार के लिए
11.	early orders are solicited	शीघ्र आदेश अपेक्षित है
12.	Minister has seen	मंत्री जी ने देख लिया है
13.	Need no comment	टिप्पणी की आवश्यकता नहीं है
14.	As early as possible	यथाशीघ्र
15.	Order has been communicated	आदेश भेज दिया गया है
16.	Saving Bank pass book	बचत बैंक खाता पास बुक
17.	Allowed	अनुमति दी
18.	Submitted for information	सूचना के लिए प्रस्तुत
19.	Submitted for orders	आदेश के लिए प्रस्तुत
20.	As amended/ as revised	यथा संशोधित/यथा पुनरीक्षित
21.	Approved as proposed	यथा प्रस्ताव/ प्रस्ताव के लिए अनुमोदित
22.	Await further action	आगे की कार्रवाई की प्रतीक्षा करें
23.	Discrepancy may be reconciled	विसंगति का समाधान कर लिया जाए
24.	Do the needful	आवश्यक कार्रवाई करें
25.	Await further action	अगली रिपोर्ट की प्रतीक्षा करें
26.	Further orders will follows	आगे और आदेश भेजे जाएंगे
27.	I agree	मैं सहमत हूँ
28.	Issue today	आज ही भेजिए/भेज दिया जाए
29.	Issue as amended	यथा संशोधित रूप में भेज दीजिए
30.	Issue reminder urgently	तुरन्त <u>अनुस्मारक/स्मरण-पत्र</u> भेजिए
31.	It is an offence	यह कानूनी अपराध है
32.	Keep with the file	इसे मिसिल/फाइल के साथ रखिए
33.	Matter is under consideration	मामला(विषय) विचाराधीन है
34.	Obtain formal sanction	औपचारिक संस्वीकृति/मंजूरी प्राप्त करें
35.	Office to note and comply	कार्यालय ध्यान दें और पालन करें
36.	All concerned to note	सभी संबंधित नोट करें/ध्यान दें
37.	Order may be issued	आदेश जारी कर दिया जाए
38.	Please discuss	चर्चा कीजिए

39.	Please speak	बात कीजिए
40.	Please report	विवरण दीजिए
41.	Please keep pending	कृपया इसे रोका जाए
42.	Please circulate and file	सभी को दिखाकर फाइल कर दीजिए
43.	Please inform immediately	तत्काल सूचित कर दीजिए
44.	Please expedite compliance	शीघ्र अनुपालन कीजिए
45.	Paper under consideration	विचाराधीन कागज/स्मरण पत्र भेज दें
46.	Passed for payment	भुगतान के लिए पास किया गया
47.	Reminder may be sent	<a href="#">अनुस्मारक/स्मरण-पत्र</a> भेज दें
48.	Sanctioned as proposed	प्रस्ताव के अनुसार मंजूर/यथा प्रस्ताव संस्वीकृत
49.	Seen, issue	देख लिया, जारी कर दिया जाए
50.	Seen and returned	देख कर वापस किया जाता है

**SEMESTER-VI**

**FUNCTIONAL HINDI (VOCATIONAL)**  
QD'kuy fgluh

j fM; k] njn'kU i d kj.k] vk/kfud njl pkj ek/; e vk] x | dh vU; fo/kk, j

l e; % 3 ?k/s

i wkkd % 60

- क) यह प्रश्न पत्र तीन भागों में बंटा हुआ है। पहले भाग में से दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न 1 अंक का है। कुल अंक 10 हैं।
- ख) इस भाग में से 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर दो पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।
- ग) इस भाग में चार प्रश्न पूछे जाएंगे जिन में से 2 प्रश्नों का उत्तर देना होगा। इन प्रश्नों का उत्तर 3-4 पृष्ठों तक सीमित होगा। प्रत्येक प्रश्न के 10 अंक हैं। कुल अंक 20 हैं।

fu/kkfj r i kB; Øe

d½ j fM; ks i d kj.k %

- रेडियो : परिचय और इतिहास
- रेडियो के शैक्षणिक कार्यक्रम
- रेडियो के विविध कार्यक्रम
- रेडियो का हिन्दी भाषा को सम्पर्क भाषा बनाने में योगदान
- रेडियो : प्रसारण विधि और सिद्धांत

[k½ njn'kU i d kj.k

- & दूरदर्शन : परिचय और इतिहास
- & दूरदर्शन : भारत में जालतंत्र
- & दूरदर्शन के शैक्षणिक कार्यक्रम
- & दूरदर्शन : प्रसारण विधि और सिद्धांत
- & रेडियो और दूरदर्शन : तुलनात्मक अध्ययन

x½ njl pkj ds vk/kfud ek/; e

?k½ x | dh vU; fo/kk, a % l S] kfUrd i {k

- आत्मकथा, जीवनी, यात्रावृत्त, रेखाचित्र और संस्मरण : अर्थ, परिभाषा और स्वरूप

M½ VsyhQku] bā/j dkk] byDVkfud esy] VsyhdkiYd ] bā/j uV] ekckby Qku] Qd cp] fVoVj vk] oVt vi

vd foHkktu

- प्रथम भाग में भाग 'ग' में से प्रश्न पूछे जाएंगे। 1×10=10
- द्वितीय भाग में भाग 'क' और 'ख' में से प्रश्न पूछे जाएंगे। 5×6=30
- तृतीय खंड में भाग 'घ' में से प्रश्न पूछे जाएंगे। 2×10=20

**SEMESTER–VI**

**FUNCTIONAL HINDI (VOCATIONAL)**  
QD'kuy fglnh

i z; ksx vksj ekf[kdh

i wkkd % 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग–पुस्तिका के होंगे।
- प्रयोग पुस्तिका का आकलन और मौखिक–परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा–नियमों के अनुसार की जाएगी।

i z; ksx ds fo'k; %

- कैमरे का सामना करना
- प्रसारण–प्रशिक्षण
- प्रसारण समय ध्यान देने योग्य बातें
- ध्वनि–प्रशिक्षण
- आलेख तैयार करना
- हिन्दी टंकण की विधि
- अंग्रेजी कुंजीपटल पर हिन्दी टंकण
- टंकण करते समय ध्यान देने योग्य बातें

**SEMESTER-VI**

**HINDI PATRAKARITA (VOCATIONAL)**

**हिन्दी पत्रकारिता (वोकेशनल)**

**इलैक्ट्रानिक मीडिया और पत्रकारिता**

**समय: 3 घण्टे**

**पूर्णांक 60**

- क) यह प्रश्न पत्र तीन भागों में बंटा हुआ है । पहले भाग में से दस प्रश्न पूछे जाएंगे । इस भाग के सभी प्रश्न अनिवार्य हैं । प्रत्येक प्रश्न 1 अंक का है । कुल अंक 10 हैं ।
- ख) इस भाग में से 10 प्रश्न पूछे जाएंगे । जिनमें से 5 प्रश्नों का उत्तर देना है । इन प्रश्नों का उत्तर दो पृष्ठों की सीमा का होगा । प्रत्येक प्रश्न 6 अंक का है । कुल अंक 30 हैं ।
- ग) इस भाग में से चार प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना होगा । इन प्रश्नों का उत्तर 3-4 पृष्ठों तक सीमित होगा । प्रत्येक प्रश्न के 10 अंक हैं । कुल अंक 20 हैं ।

**निर्धारित पाठ्यक्रम -**

- क) कम्प्यूटर और इण्टरनेट  
- कम्प्यूटर शब्दावली (अंग्रेज़ी से हिन्दी में)  
पहले 30 में से  
- कम्प्यूटर शब्दावली (हिन्दी से अंग्रेज़ी में)  
पहले 30 में से  
- कापी साथ संलग्न है ।
- ख) कम्प्यूटर : अर्थ, परिभाषा, गुण व प्रकार  
कम्प्यूटर की उपयोगिता तथा रूप-रेखा  
इण्टरनेट : परिचय/इतिहास  
इण्टरनेट : सम्पर्क सूत्रों का परिचय  
इण्टरनेट : ई-मेल, ई-मेल भेजने की प्रविधि  
बाडजर — इण्टरनेट एक्सप्लोरर : अभिप्राय

ग) पत्रकारिता और प्रेस कानून

मानहानि (Defamation)

न्यायालय की अवमानना (Concept of Court)

भारतीय सरकारी रहस्य अधिनियम, 1923

औषधि और चमत्कारिक उपचार कानून

एकांतता का कानून (The copy right act 1957)

प्रेस एवं पुस्तक पंजीकरण नियम, 1867

प्रेस एवं संसदीय विशेषाधिकार

श्रमजीवी पत्रकार कानून, 1955

### अंक विभाजन

- प्रथम खण्ड 'क' में से 10 प्रश्न पूछे जाएंगे ।  $1 \times 1 = 10$

- द्वितीय खण्ड 'ख' तथा 'ग' में से प्रश्न पूछे जाएंगे ।  $5 \times 6 = 30$

- तृतीय खण्ड 'ग' तथा 'ख' में से प्रश्न पूछे जाएंगे ।  $2 \times 10 = 20$

**SEMESTER-VI**

**HINDI PATRAKARITA (VOCATIONAL)**

**हिन्दी पत्रिकारिता**

**प्रयोग और मौखिकी**

**Marks: 40**

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग-पुस्तिका तैयार करनी होगी जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग-पुस्तिका के होंगे ।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा
- नियमों के अनुसार की जाएगी ।

**विषय:**

- कम्प्यूटर की आन्तरिक इकाई का ज्ञान ।
- कम्प्यूटर की बाह्य इकाई का ज्ञान ।
- हिन्दी के प्रमुख साफ्टवेयर की जानकारी ।
- कम्प्यूटर की केन्द्रीय संसाधन इकाई की जानकारी ।
- इंटरनेट एक्सप्लोरर के प्रयोग की विधि (Processor / C.P.U.)

**कम्प्यूटर शब्दावली**

हिन्दी से अंग्रेजी अंग्रेजी से हिन्दी

अंकाक्षर	Character	Abstracting Periodicals	सारीकरण पत्रिका
अंकाक्षर कुंजियां	Character Keys	Access Path	अभिगम पथ
अक्षर	Alphabet	Accession	अवाप्ति
अतिवृहत् श्रेणी एकीकरण	Very Large Scale Integartion	Accession Number	अवाप्ति संख्या
अनुकूलन	Compatibility	Accession Register	अवाप्ति पंजिका

<u>अनुक्रमणिका/अनुक्रमणी</u>	<b>Index</b>	<b>Advanced Technology</b>	उन्नत तकनीक
अनुक्रमणीकरण	<b>Indexing</b>	<b>Alphabet</b>	वर्ण
अनुक्रमणीकरण पत्रिका	<b>Indexing Periodical</b>	<b>Alphanumeric</b>	वर्णांकिक
अनुच्छेद	<b>Paragraph</b>	<b>Anaolog</b>	सदृश
अनुमोदन	<b>Approval</b>	<b>Analogy</b>	सादृश्य
अभिगम	<b>Access</b>	<b>Abort</b>	रुद्ध
अभिगम पथ	<b>Access Path</b>	<b>Apathy</b>	उदासीनता
अनुदेश	<b>Instruction</b>	<b>Application Software</b>	प्रयुक्ति सॉफ्टवेयर
अनुस्मारक	<b>Reminder</b>	<b>Approach</b>	उपगम/अभिगम
अभिज्ञापक	<b>Identifier</b>	<b>Approval</b>	अनुमोदन
अभिलेख	<b>Record</b>	<b>Architecture (Computer)</b>	कंप्यूटर संरचना
अवरोध	<b>Barrier</b>	<b>Arithmetic Logical Unit</b>	गणितीय तार्किक एकक
अवाप्ति	<b>Accession</b>	<b>Artificial Intelligence</b>	कृत्रिम मेधा
अवाप्तिकरण	<b>Accessioning</b>	<b>Assemble</b>	एकत्र
अवाप्ति पंजिका	<b>Accession Register</b>	<b>Assimilate</b>	आत्मसात
अवाप्ति संख्या	<b>Accession Number</b>	<b>Automatic</b>	स्वचालन
अष्टाधारी	<b>Octal</b>	<b>Average</b>	औसत
अष्टाधारी संख्या प्रणाली	<b>Octal Number System</b>	<b>Barriers</b>	अवरोध

अर्द्ध कंडक्टर आधारित	<b>Semi Conductor</b>	<b>Barriers of Information</b>	सूचना संचार के
ट्रांजिस्टर	<b>Based Transistor</b>	<b>Communication</b>	अवरोध
आंकिक	<b>Numerical</b>	<b>Batch Processing Technique</b>	बैच संसाधक तकनीक
आंतरिक	<b>Internal</b>	<b>Bibliographical Detail</b>	ग्रंथात्मक विवरण
आंतरिक स्मृति	<b>Internal Memory</b>	<b>Bibliography</b>	ग्रंथसूची
आख्या	<b>Title</b>	<b>Binary Digit</b>	द्विआधारी अंक
आत्मसात	<b>Assimilate</b>	<b>Binary System</b>	द्विआधारी प्रणाली
आत्मसातीकरण	<b>Assimilation</b>	<b>Book Selection Slip</b>	पुस्तक चयन पर्ची
आह्वान	<b>Call</b>	<b>Borrowing Library</b>	ऋणी पुस्ताकलय
आह्वान संख्या	<b>Call Number</b>	<b>Bridge Language</b>	पुल भाषा
इंगितार्थ	<b>Implication</b>	<b>Calculating Device</b>	गणक उपकरण
		<b>Call</b>	आह्वान
		<b>Call Number</b>	आह्वान संख्या
		<b>Capability</b>	सामर्थ्य
		<b>Cartridge</b>	कार्ट्रिज टेप

**SEMESTER-VI**

**PHYSICAL EDUCATION  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 60  
Practical Marks: 40**

**Note:- Question paper will be divided into three sections.**

**Section-A:** The candidates are required to attempt all the six questions. Each question carrying two marks. **6x2=12 Marks**

**Section-B:** The candidates are required to attempt seven out of twelve questions. Each question carrying four marks. **7x4=28 Marks**

**Section-C:** The candidates are required to attempt two out of four questions. Each question carrying ten marks. **10x2=20 Marks**

**Part-A**

1. Effect of exercises on muscular, respiratory and circulatory systems.
2. General concept of Vital capacity, Blood pressure, General and Specific conditioning.
3. Tournaments: Draw of fixture, types of tournaments.
  - (a) Knock Out
  - (b) League
  - (c) Combination Tournament
  - (d) Challenge Tournament
4. Organisation of Camps, Play days (Sports Meet)
5. Need and scope of coaching in India. Professional preparation of coaches. Qualifications and responsibilities of a coach.

**Part-B**

1. Meaning and Importance of Kinesiology.
2. Joints, Muscles, heir types and Movements.
3. Therapeutic Exercises, their classification and benefits.
4. Components of Physical Fitness, Speed, Strength, Endurance, Agility and Flexibility.
5. Training Methods; Circuit, Interval, Fartlek, Weight-Training and Cross Country.
6. Methods of Improving Strength, Speed, Endurance, Flexibility and Agility.

**Books Recommended:**

1. Singh Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi 2000.
2. Tandon D.K. et.al.: Scientific Basis of Physical Education and Sports, Friends Publication New Delhi, 2001.
3. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang G.S.,: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University Patiala 2000.
5. Kang G.S. and Deol, N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.

**SEMESTER–VI**

**PHYSICAL EDUCATION**

**(PRACTICAL)**

**Marks: 40**

Division of Marks: Athletics (12) + Games (12) + Ground Markings (3+3),  
Practical Note Book (5), Viva-Voce (5)

- Athletics Performance -----1500M, Javelin Throw for Boy  
800M, Javelin Throw for Girls
- Games (Boys & Girls) ----- Fundamentals, Rules, Performance  
Kabbadi  
Badminton

**FACULTY OF ARTS AND SOCIAL SCIENCES, ECONOMICS  
AND BUSINESS, HUMANITIES AND RELIGIOUS STUDIES  
& LANGUAGES**

**SYLLABUS**

**FOR**

**B.A. (Honours)**  
**(12+3 System of Education)**

**(Semester: III–VI)**

**Examinations: 2018–19**



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**GURU NANAK DEV UNIVERSITY**  
**AMRITSAR.**

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- (ii) Subject to change in the syllabi at any time.  
Please visit the University website time to time.

**INDEX FOR SEMESTER III–VI**

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**SEMESTER–III**

**POLITICAL SCIENCE**

**Any one of the following papers:**

**PAPER (I): INTERNATIONAL RELATIONS (1917–1945)**

**PAPER (II): PUBLIC ADMINISTRATION**

**PAPER (I): INTERNATIONAL RELATIONS (1917–1945)**

**Time: 3 Hours**

**Max.Marks:100**

**Note: Instructions for the Paper–Setters / Examiners.**

**Section–A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT–I**

**The Bolshevik Revolution**

- a) The Soviet Foreign Policy 1917–1921.
- b) Impact of the Bolshevik Revolution on Anti–Imperialist National Liberation Movement in Asia.
- c) International Relations before and after First World War
- d) Peace Process in the Post World War I:
- e) The Emergence of the League of Nations.

**UNIT–II**

**European Politics and the New Balance of Power**

- a) French quest for security and the German urge for equality.
- b) British Foreign Policy during inter-war Period
- c) Locarno–Pact and Kellogg–Briand Pact.

### SEMESTER–III

### POLITICAL SCIENCE

#### UNIT–III

#### The Great Depression and its impact on International Politics

- a) Rise of Fascism
- b) Rise of Militarism in Japan.
- c) Rise of Nazism.

#### UNIT–IV

#### I. Causes of the Second World War and the Emergence of United Nations

- a) Failure of the League of Nations.
- b) Alliance and Counter–alliances.
- c) The Politics of Appeasement.
- d) Soviet German (Molotov–Ribbentrop) Non–Aggression Pact, August 1939.
- e) The Genesis of the United Nations and its Objectives

#### Books Recommended:

1. A.C.Roy: International Relations Since 1910 (Calcutta, World Press, 1970)
2. E.H.Carr: The Twenty Year Crisis 1919–39: An Introduction to the Study of International Relations (London, Macmillan 1946).
3. E.H.Carr: International Relations Between two World Wars 1919–39 (London Macmillan 1947).
4. G.M.Gathorne: Short History of International Affairs 1920–39 (London, OUP, (1950).
5. Madan Lal Gupta, International Relations Since 1919, Allahabad, Chaitanya Publishing House, 1983.
6. Asit Kumar Sen, International Relations Since World War I, New Delhi, Chand and Co. Ltd., 1978).
7. R.P. Barston, Modern Diplomacy, New Delhi, Pearsons, 2006.
8. Joshua S. Goldstein, International Relations, New Delhi, Pearson Education, 2006.
9. John Allphin Moore, Jr. and Jerry Pubantz, The New United Nations, International Organization in the Twenty–First Century, New Delhi, Pearsons, 2008.
10. S.P. Verma, International System and the Third World, New Delhi, Vikas, 1988.
11. J.C. Johari, *International Relations and Politics*, Sterling, 2012
12. V. K. Malhotra, *International Relations*, Anmol 2012
13. John Baylis and Sreve Smith, *The Globalizations of World Politics*, Oxford, 2005
14. Pen Ghosh, *International Relations*, PHI 2009
15. Scot. P. Handler, *International Politics*, Sage, 2013
16. Palmer Pertains , *International Relations*, AIIBS, 2005
17. H.J. Morgenthau, *Politics Among Nations*, Kalyani, 2004
18. Kanth Bajpai & Siddharth Mallavarapn, *International Relations in India : Bringing theory Back Home*, Orient longman, 2005
19. Leter Calvocoresis, *World Politics (1945-2000)*, Pearson, 2006

**SEMESTER–III**

**POLITICAL SCIENCE**

**PAPER (II): PUBLIC ADMINISTRATION**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper–Setters / Examiners.**

**Each question paper will consist of two sections as follows:**

**Section–A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT–I**

Meaning, Scope and Utility, Distinction between Public Administration and Private Administration. New Public Administration, New Public Management.

**UNIT–II**

**Organisation:** Meaning, Principles of Organisation: Hierarchy; Unity of Command; Coordination. Delegated legislation, Administrative Adjudication. The Concept of Good Governance and its characteristics. Role of Chief Executive.

**UNIT–III**

**Civil Services:** Recruitment and Training, Their role in Nation Building; Minister–Secretary Relationship; Generalist–Specialist controversy.

**UNIT–IV**

**Budget:** Meaning, Importance, Principles of Sound Budgetary System. Parliamentary Control over Finance.

**SEMESTER–III**

**POLITICAL SCIENCE**

**Books Recommended:**

1. A. Awasthi and S.R. Maheshwari, *Public Administration* (Agra, Laxmi Narain, 2008, Both English and Hindi Editions).
2. Marshall L. Dimock, and Gladyso, Dimock, *Public Administration* (New Delhi, Oxford N and IEH, 1964).
3. F.M. Marx, *Elements of Public Administration* (New Delhi, Prentice Hall, 1964).
4. Nigro, F.A., *Modern Public Administration* (New York, Narper International Ed. 1965).
5. Bhattacharya, Mohit, 2001, *New Horizons of Public Administration*, Jawahar Publishers, New Delhi.
6. Henry Nicholos, 1975, *Public Administration and Public Affairs*, Prentice Hall, New York.
7. Marini, Frank (ed.), 1971, *Towards a New Public Administration*, Chandler Publisher, New York.
8. M.P. Sharma and B.L. Sadana, *Public Administration in Theory and Practice*, Allahabad, Kitab Mahal, 2004.
9. B.L. Fadia, *Public Administration: Administrative Theories and Concepts*, Agra, Sahitya Bhawan Publications, 2004.
10. Rumki Basu, *Public Administration: Concepts and Theories*, New Delhi, Sterling Publishers Pvt. Ltd., 2003.
11. A.R. Tyagi, *Public Administration: Principles and Practices*, Delhi, Atma Ram and Sons, 2001.
12. R.K. Sapru, *Administrative Theories and Management Thought*, New Delhi, PHI, 2008.
13. S.R. Maheswari, *Administrative Theories*, (2<sup>nd</sup> Revised Edition), New Delhi, Macmillan, 2006.
14. M.Laxmi kanth , *Public Administration*, Tata Mcgraw,2012
15. Hoshiar Singh & Pardeep Sachdeva, *Administrative Theory & Practice*, Pearson, 2011
16. Bidyut Chakraborty & Parkash Chand, *Public Administrative in a Globalising World*, Sage, 2012

**SEMESTER-IV**

**POLITICAL SCIENCE**

**Any one of the following options:**

**PAPER (I): INDIAN FOREIGN POLICY**

**PAPER (II): MODERN POLITICAL IDEOLOGIES**

**PAPER (III): CONTEMPORARY PUNJAB**

**OPTION PAPER (I): INDIAN FOREIGN POLICY**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper-Setters / Examiners.**

**Each question paper will consist of two sections as follows:-**

**Section-A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section-B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT-I**

1. Determinants of India's Foreign Policy; Its main principles and policy of Non-alignment.

**UNIT-II**

2. India and its Neighbours; Pakistan, Bangladesh and Nepal, Sri Lanka.

**UNIT-III**

3. India and US and Sino- Indian Relations.

**UNIT-IV**

4. India's Nuclear Policy.
5. India's attitude towards reconstruction of UNO, India's claim for permanent seat in Security Council.

**SEMESTER-IV**

**POLITICAL SCIENCE**

**Books Recommended:**

1. Bimal Prasad (Ed.), Indian Foreign Policy ; Continuity and Change (Delhi, Vikas, 1969)
2. Surendra Chopra (Ed.), Studies in India's Foreign Policy (Guru Nanak Dev University, Amritsar, 1980)
3. Nancy Jetly (Ed.), India's Foreign Policy: Challenges and Prospects (New Delhi; Vikas Publishers Pvt. Ltd., 1999).
4. V.P. Dutt, India's Foreign Policy in a Changing World (Delhi, Vikas Publishers Pvt. Ltd., 1999).
5. Lalit Man Singh and Dilip Lahri (et. al.); India's Foreign Policy, Agenda for 21st Century, Vol. I and Vol. II (New Delhi, Knonar Publishers Pvt. Ltd., 1998).
6. J. Bandyopadhaya: The Making of India's Foreign Policy Allied, Bombay, 1970.
7. S.S. Bindra: Indo-Pak Relations, Deep and Deep Publishers, New Delhi, 1981.
8. Harish Kapur: India's Foreign Policy, 1947-92, New Delhi Sage, 1994.
9. J. Bandyopadhyaya, *The Making of India's Foreign Policy*, 3<sup>rd</sup> Edition (New Delhi, Allied Publishers Pvt. Ltd., 2003).
10. Vatsala Shukla, *India's Foreign Policy in the New Millenium: The Role of Power* (Delhi, Atlantic Publishers and Distributors, 2005).
11. I.K. Gujral, *Continuity and Change: India's Foreign Policy*, New Delhi (Macmillan, 2006).
12. Jayanta Kumar Roy , *India's Foreign Relations 1947-2007*, Routledge, 2011
13. Satish Kumar, *India's National Security : Annual Review 2009*, Routledge,2010
14. Amar Nath Ram, *Two Decades of India's Look East Policy: Partnership forPeace, Progress & Prosperity*, Manohar, 2012.
15. V.N Khanna , *Foreign Policy of India*, Vikas, 2012

**Journals:**

16. *World Focus*
17. *Strategic Analysis*
18. *International Studies*

**SEMESTER-IV**

**POLITICAL SCIENCE**

**OPTION PAPER (II): MODERN POLITICAL IDEOLOGIES**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper-Setters / Examiners.**

**Each question paper will consist of two sections as follows:**

**Section-A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section-B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT-I**

**Liberalism:** (a) Classical and New; (b) Problems of Contemporary Liberalism; (c) Pluralism.

**UNIT-II**

**Socialism:** (a) Marxian Socialism; (b) Fabianism.

**UNIT-III**

(a) Anarchism; (b) Syndicalism and Guild Socialism; (c) Fascism.

**UNIT-IV**

(a) Modern Conservatism; (b) Gandhism.

**Suggested Readings:**

1. J. Bandhyopadhyaya, *Social and Political Thought of Gandhi*, Bombay, 1969.
2. George Lichtheim, *Marxism: An Historical and Critical Study*. (London, 1962).
3. Neelo's Sullivan, *Conservatism*, St. Martin's Press, Inc. 1975. Fifth Avenue, New York, 1976.
4. D.J. Manning, *Liberalism* (St. Martin's Press, New York, 1978).
5. Brian R. Nelson, *Western Political Thought*, New Delhi, Pearson Education, 2006.
6. W.C. Coker, *Recent Political Thought*, UK, Home Series, 1985 (Reprint).
7. Janet Coleman, *A History of Political Thought: From Middle Ages to the Renaissance*, UK: Blackwell Publishing, 2005.
8. M.P. Jain, *Political Theory*, Delhi, Authors Guild, 1989.
9. Neera Chandhoke, *State and Civil Society*, New Delhi, Sage Publications, 1995.
10. Andrew Heywood, *Key Concepts in Politics*, Palgrave, 2011
11. Anthony H. Birch, *The Concepts and Theories of Modern Democracy*, Routledge, 2013
12. Catriona Mckinnan, *Issues in Political Theory*, Oxford, 2009
13. Andrew Heywood, *Political Ideologies*, Polgrave, 2007
14. Michel Freedman, *The Oxford Handbook of Political Ideologies*, Oxford, 2013
15. N.D. Arora & S.S.Awasthy, *Political Theory and Political Thought*, Har- Anand, 2010

**SEMESTER- IV**

**POLITICAL SCIENCE**

**OPTIONAL PAPER (III): CONTEMPORARY PUNJAB**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper–Setters / Examiners.**

**Each question paper will consist of two sections as follows:**

**Section–A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT–I**

1. Partition, Migration and Rehabilitation.
2. Demographic Peculiarities: Religious, Caste, Gender and Occupational structure of Punjabi Society

**UNIT–II**

3. An Overview of Punjab Politics Since 1947
4. Politics of Factionalism and Regionalism

**UNIT–III**

5. Electoral Process and Party Politics Since 1967
6. Politics of Economic Populism in Punjab
7. Rise of Aam Aadmi Party in Punjab

**UNIT–IV**

8. Contemporary Issues of Punjab: Changing dynamics of Punjab Economy and Fiscal Crisis
9. Agrarian Crisis in Contemporary Punjab
10. Drug Addiction

**Suggested Readings:**

1. Amarjit Singh Narang, 'The Shiromani Akali Dal' in Pashaura Singh and Louis E. Fenech (eds.), *The Oxford Handbook of Sikh Studies*. United Kingdom: OUP pp.339-49, 2014.
2. Ashutosh Kumar and Jagroop Sekhon, 'Punjab Resurgence of the Congress' *EPW* Sept. 26. Pp.183-186, 2009.
3. Ashutosh Kumar, 2012 Assembly Elections in Punjab: Ascendance of a state level party' *Journal of Punjab Studies*: Vol 19 No. 2 pp. 255-273,

4. Ashutosh Kumar, 'Electoral Politics in Punjab: 1966-2004' *JPS* Vol.12-no.1 spring pp.111-128, 2005.
5. Government Of Punjab, *Human Development Report 2004*, 2004.
6. Harish K. Puri,, Parmjit Singh Judge and Jagroop Singh Sekhon (eds.), *Terrorism in Punjab: Understanding Grass-root Reality* . Delhi: Har-Anand , 1999.
7. Jagroop Singh Sekhon, "16<sup>th</sup> Parliamentary Elections: The Rise of Aam Aadmi Party in Punjab," *Vidhanmala*, Vol.7, No.1, pp 59-69, 2014.
8. Jagroop Singh Sekhon and Ashutosh Kumar, "2014 Elections in Punjab: Emergence of Aam Aadmi in Punjab," *Research Journal of Social Sciences*, Vol. 22, No.2, 2014.
9. Jagroop Singh Sekhon, "Farmers at the Borderbelt of Punjab: Fencing and Forced Deprivation," in Paramjit S. Judge (ed.), *Mapping Social Exclusion in India: Caste, Religion and Borderlands*, Delhi: Cambridge University Press, pp-237-252, 2014.
10. Jagroop Singh Sekhon, "Is the AAP a Game Changer in Punjab?," *The Hindu*, (The Hindu Centre for Politics and Public Policy), 2014.
11. Jagroop Singh Sekhon, 'Punjab Assembly Elections -2012' *Lokniti Newsletter*, April [www.lokniti.org](http://www.lokniti.org), 2012.
12. Lakhwinder Singh, 'Deceleration of Industrial Growth and Rural Industrialization: Strategy for Indian Punjab' *JPS* .Vol.12 No.2 pp. 271-284, 2005.
13. M.S. Randhawa, *Out of Ashes: An Account Of The Rehabilitation Of Refugees From West Pakistan In Rural Areas Of East Punjab*, Public Relation Department: Chandigarh, 1954.
14. Nirvikar Singh, 'Breaking the Mold: Thoughts on Punjab' Future Development' Keynote Address published by Punjabi University, Patiala, 2014.
15. P.S. Verma, 'The Punjab Congress' in J.S Grewal and Indu Banga (eds.),*Punjab in Prosperity and Violence. New Delhi*, 1998.
16. Paramjit Singh, "Economic Benefits and ecological cost of green revolution: a case study of Punjab" *Journal Of Economic And Social Development*, vol. VII. No. 1, 2011.
17. Parmjit S. Judge, *Religion, Identity and Nationhood: The Sikh Militant Movement*, Jaipur: Ravat Publications, 2005.
18. Parmjit S. Judge, *Social and Political Movements: Readings on Punjab*, Rawat, Jaipur (Co-edited with Harish K. Puri), 2000.
19. Parmjit S. Judge, *Social Change Through Land Reforms*, Jaipur : Rawat, 1999.
20. Parmjit S. Judge, *Insurrection To Agitation: Naxalite Movement in Punjab*, Bombay: Popular Prakashan, 1992.
21. Parmjit S. Judge, "Caste Conflicts in Punjab: An Examination of Recent Jat-Dalit Clash in a Village", *Man & Development*, XXVII (3) September, 2005.
22. Parmjit S. Judge, 2005, "For Khalistan and Sikh Tradition: Ethnonationalist Movement and its Discourse", in S. L. Sharma, Satish K. Sharma and Jayaram Panda (eds.) *Ethnic, Rural and Gender Issues in Contemporary North-West*, New Delhi: Anamika Publishers.
23. Parmjit S. Judge, "Emerging Trends in Social Conflicts in Punjab", *Guru Nanak Journal of Sociology*, 26 (1), April, 2005.

24. Parmjit S. Judge, "Symbols, Community and State: The Sikhs and the Operation Blue Star", *Punjab Journal of Politics*, 28 (1), Jan. – June, 2004.
25. Parmjit S. Judge, "Politics of Sikh Identity and its Fundamentalist Assertion", *Economic and Political Weekly*, 39(35), August 28, 2004.
26. Parmjit S. Judge, "Interrogating Changing Status of Dalits of Punjab" in Harish Puri (ed.) *Dalits in Regional Context*, Jaipur: Rawat, 2004.
27. Parmjit S. Judge "Displacement, Rehabilitation and the Deconstruction of Community", *Indian Social Science Review*, 5 (2), 2003.
28. Pritam Singh , 2007 'Punjab's Electoral Competition' *EPW* vol.42-6 Feb.10-16 pp. 466-67
29. Pritam Singh, ' Deepening Capitalism in Punjab's Rural Society: Unleashing Development, Degradation and Resistance' Annual Conference of the South Asian Anthropologists' Group, Goldsmith College, London, July 3, 2006.
30. Pritam Singh, *Federalism, Nationalism and Development: India and the Punjab Economy*. London and New York: Routledge, 2009.
31. Pritam Singh, *Economy, Culture and Human Rights: Turbulence in Punjab, India and Beyond*, Gurgaon: Three Essays Collective, 2010.
32. Radhika Chopra, *Militant and Migrant: The Politics and Social History of Punjab*, London New York New Delhi: Routledge, 2011.
33. Rahul Advani, *Factors driving Drug Abuse in Indian Punjab*, ISAS working paper no. 177, 24 September 2013, National University of Singapore, 2013.
34. Ranjit Singh Ghuman, 'The Sikh Community in Indian Punjab: Some Socio- Economic Challenges' *JPS* vol.19:1 pp.87
35. Ranjit Singh Ghuman, 'Socio-economic Crisis in Rural Punjab' *EPW* vol.43, no.7 Feb.16-22 pp.12-15, 2008.
36. Ranjit Singh Ghuman, Inderjit Singh and Lakhwinder Singh, "Structure of Rural Economy of Punjab" in 'Status of Local Agricultural Labour in Punjab' Report prepared by Department of Economics, Punjabi University, Patiala, 2007.
37. Sucha Singh Gill, 'Economic Distress and Suicides in Rural Punjab' *JPS* vol.12 No.2 pp. 219-238, 2005.
38. Surinder S. Jodhka, 'Caste and Democracy: Assertion and Identity Among Dalits of Rural Punjab' *Sociological Bulletin* vol.55, no.1 (January –April 2006) pp.4-23, 2006.
39. Surinder S. Jodhka, 'Return of the Region: Identities and Electoral Politics in Punjab' *EPW*, Vol. 40 No. 3 (Jan.15-21) pp.224-230, 2005.
40. Upinder Sawhney, *Fiscal Reforms At Sub- National Level: The Case Of Punjab*, accessed from: [http://www.nipfp.org.in/media/medialibrary/2013/04/wp05\\_nipfp\\_026.pdf](http://www.nipfp.org.in/media/medialibrary/2013/04/wp05_nipfp_026.pdf)

**SEMESTER-V****POLITICAL SCIENCE**

**Any one of the following options:**

**PAPER (I): RESEARCH METHODS IN SOCIAL SCIENCES**

**PAPER (II): INDIAN POLITICAL THINKERS**

**PAPER (III): POLITICAL SOCIOLOGY**

**OPTION PAPER (I): RESEARCH METHODS IN SOCIAL SCIENCES**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper-Setters / Examiners.**

**Each question paper will consist of two sections as follows:**

**Section-A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section-B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT-I**

The Nature of Scientific Research; Major Steps in Research Process; Selection and Formulation of a Research Problem; Research Design.

**UNIT-II**

Building Blocks of Scientific knowledge; Concepts, Hypothesis, Generalizations and Theories, Measurement in Social Sciences.

**UNIT-III**

Descriptive Statistics (Introduction only); Methods of Data Collection; Document Analysis: Primary and Secondary; Observation and Interviewing, Content Analysis.

**UNIT-IV**

**Survey Research:** Sampling, Questionnaires and Interviewing; Data Processing; Analysis and Interpretation; Report Writing.

**SEMESTER-V**

**POLITICAL SCIENCE**

**Books Recommended and References:**

1. Adams, Gerald R. and Schvaneveldt, Jay D. (1985), Understanding Research Methods, New York, Longman.
2. Ahuja, Ram (2007), Research Methods, Jaipur, Rawat Publications.
3. Berg, Bruce L. (1998), Qualitative Research Methods for the Social Sciences, Boston, Allyn and Bacon.
4. Black, James A. and Champion, Dean J. (1976), Methods and Issues in Social Research, New York, John Wiley and Sons.
5. Dawson, Catherine (2003), Practical Research Methods, New Delhi, UBS Publishers.
6. De Vaus, D.A. (1986), Surveys in Social Research, London: George Allen and Unwin.
7. Doby, John T. (1967), An Introduction to Social Research, New York, Appleton Century-Crofts.
8. Dwivedi, R.S. (1997), Research Methods in Behavioural Sciences, New Delhi, Macmillan India Ltd.
9. Dyke, Vernon, Van (1960), Political Science: A Philosophical Analysis, California, Stanford University Press.
10. Festinger, Leon and Katz, Daniel, eds. (1970), Research Methods in Behavioural Science, New Delhi, Amerind.
11. Galtung, Johan (1973), Theory and Methods of Social Research, Surrey, Great Britain, Unwin Brothers Ltd.
12. Ghosh, B.N. (1983), Scientific Methods and Social Research, New Delhi, Sterling Publishing Pvt. Ltd.
13. Goode, William J. and Hatt, Paul K. (1981), Methods in Social Research, Tokyo; McGraw Hill, Kogatusha.
14. Groves, Robert M. (2004), Survey Methodology, New Jersey: John Wiley and Sons.
15. Guy, Rebecca F., et. Al. (1987), Social Research Methods, Puzzles and Solutions, Massachusetts, Allyn and Bacon Inc.
16. Jones, E. Terrence (1971), Conducting Political Research, New York, Harper and Row Publishers.
17. Kerlinger, Fred N. (1973), Foundations of Behavioural Research, New York, Holt, Rinehart and Winston, Inc.
18. Kidder, Louise H. et. al. (1981), Research Methods in Social Research, Tokyo, Holt-Saunders Ltd.
19. Kumar, Ranjit (2005), Research Methodology, New Delhi, Dorling Kundersley (India), Pvt. Ltd., Pearson Education in South Asia, Prentice-Hall, Inc.
20. Lazarsfeld, Paul (1972), Qualitative Analysis: Historical and Critical Essays, Boston, Allyn and Bacon.
21. Manheim, Henry L. (1977), Sociological Research-Philosophy and Methods, Ontario: The Dorsey Press

**SEMESTER-V**

**POLITICAL SCIENCE**

22. Margret, C. and Elegert, Frank B. (1976), Political Analysts: An Introduction, London, Allynx Bacon.
23. McCall, G.J. and Simmons, J.L. (1969), Issues in Participant Observation: A Text and Reader, Massachusetts Addison, Wesley.
24. Miller, Delbert (1975), Handbook of Research Design and Social Measurement, New York, David Mckay.
25. Moore, Nick (1984), How to do Research, London: The Library Association Publishing Ltd.
26. Moser, Claus Sir and Kalton G. (1976), Survey Methods in Social Investigation, London: The English Language Book Society and Heinemann Educational Books.
27. Nachmias, David and Nachmias, Chava (1981), Research Methods in the Social Sciences, 2<sup>nd</sup> Edition, New York: St. Martin's Press, Inc.
28. Saravanavel, P. (1987), Research Methodology, Allahabad, Kitab Mahal.
29. Selltitz, Claire, et. al. (1976), Research Methods in Social Relations, New York, Holt, Rinechart and Winston.
30. Sills, David L. Ed. 1968, International Encyclopedia of the Social Sciences, Vol. 8, London, The Macmillan Co.
31. Smith, H.W. (1975), Strategies of Social Research: The Methodological Imagination, New Jersey, Prentice Hall, Inc., Englewood Cliffs.
32. Stacey, Margaret (1969), Methods of Social Research, New York, Pergamon Press Ltd.
33. Thakur, Davendra (1993), Research Methodology in Social Science, New Delhi, Deep and Deep Publications.
34. Welsh, William (1973), Studying Politics, London, Thomas Nelson and Sons. Ltd.
35. Wilkinson, T.S. and Bhandarkar, P.L. (1977), Methods and Techniques of Social Sciences, Bombay, Himalaya Publications.
36. www.Google.Com
37. Www. Socialresearchmethods.net
38. Young, P.V. (1984), Scientific Social Survey and Research, New Delhi, Prentice Hall.
39. Sanjay Kumar, *Measuring Voting Behaviors in India*, Sage, 2013
40. Ram Ahuja, *Research Methods*, Rawat, 2003
41. Jaspal Singh, *Methodology and Techniques of Social Research*, Kanishka , 2001
42. C.R Kothari, *Research Methodology : Methods of Techniques*, Wishwa Prakashan,2014
43. S.A Palekar, *Research Methods in Social Science*, Current Publications, 2007

**SEMESTER-V****POLITICAL SCIENCE****OPTION PAPER (II): INDIAN POLITICAL THINKERS****Time: 3 Hours****Max. Marks: 100****Note: Instructions for the Paper-Setters / Examiners.****Each question paper will consist of two sections as follows:-**

**Section-A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section-B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT-I****M.G. Gandhi:**

Ideal State, Satyagraha, Non-Violence, Theory of Trusteeship.

**UNIT-II****B.R. Ambedkar:**

- a) Political Ideas of B.R. Ambedkar
- b) Views on Untouchability
- c) Social Justice

**UNIT-III****J.P. Narayan:**

- a) Total Revolution
- b) Partyless Democracy

**UNIT-IV****M.N. Roy:**

- a) Radical Humanism
- b) M.N. Roy as Marxist

**SEMESTER-V**

**POLITICAL SCIENCE**

**Books Recommended:**

1. V.P. Verma; Indian Political Thought (Agra, L.N. Aggarwal, 2004).
2. Rai, Lala Lajpat: Writings and Speeches, Vol 2, Delhi, 1966.
3. Pantham Thomas and Deutsch, Kenneth L; *Political Thought in Modern India*, Sage Publication, New Delhi, 1986.
4. B.R. Nanda–Gokhale, Delhi, 1977.
5. D.G and Ambedkar D.V., *Speeches and Writings of Gopal Krishan Gokhale*, Vol. II, Political (Bombay, Asia Publishing House, 1966).
6. D.G and Ambedkar D.V., *Speeches and Writings of Gopal Krishan Gokhale*, Vol.–III, Educational (Bombay, Asia Publishing House, 1967).
7. Patwardhan R.P. and Ambekar D.V., *Speeches and Writings of Gopal Krishan Gokhale*, Vol–I., Economic (Bombay, Asia Publishing House., 1962).
8. Savarkar V.D, *Hindutva*, Veer Savarkar Prakashan, 5<sup>th</sup> Ed, 1969.
9. Vivekanand: *Gyan Yog*.
10. Hari Hara Das, *Political Thought in India*, New Delhi, Khanna Publishers, 2002.
11. Vishnu Bhagwan, *Indian Political Thought*, New Delhi, Atma Ram and Sons, 2006.
12. A. Appadorai, *Political Thought in India*, Delhi, Khanna Publishers, 2002.
13. Meera Kosambi, *Mahatma Gandhi and Prema Kantak : Exploring a Relationship, Exploring History*, Oxford, 2013
14. L.M Bhole, *Gandhi's Hind Swaraj*, Shipra, 2013
15. Parveen K Yadav, *Ambedkarism : Essays on Select Economic & Cultural Issues*, Routledge, 2013
16. V.P Verma , *Modern Indian Political Thought*, Laxmi Narayan Agarwal, 2005
17. M. Jayapalan, *Indian Political Thinkers*, Atlantic , 2010
18. Raj Kumar, *Modern Indian Political Thought*, Arise, 2006
19. D.K Mohanti, *Indian Political Tradition*, Anmol, 2004

**SEMESTER-V****POLITICAL SCIENCE****OPTION PAPER (III): POLITICAL SOCIOLOGY****Time: 3 Hours****Max. Marks: 100****Note: Instructions for the Paper-Setters / Examiners.****Each question paper will consist of two sections as follows:**

**Section-A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section-B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT-I**

Political Sociology: Definition, Scope and relationship with Sociology and Political Science.

**UNIT-II**

- a) Key Concepts: Community, Associations and Institutions; Class Theory of Karl Marx; Functionalist School of Talcott Parsons.
- b) (1) Political Parties, Pressure and Interest Groups; Their Role in Indian politics; (2) Political Participation; Its determinants.

**UNIT-III**

- (1) Political Socialisation; Meaning and Agencies; (2) Political Culture: Definition and Kinds; (3) Power, Authority and Legitimacy.

**UNIT-IV**

Socio-Economic basis of Indian Democracy; (2) Power Structure in India; (3) Social and Political changes in India in post-independence period.

## SEMESTER-V

### POLITICAL SCIENCE

#### Suggested Readings:

1. Alessandro, Pizzorno, Political Sociology, Penguin Harmondsworth, 1971.
2. M. Janowitz, Political Sociology in Encyclopaedia of Social Sciences, Free Press, McMillan, 1961.
3. S.M. Lipset, Political Man, Double Day, 1984.
4. W.G. Runciman, Social Science and Political Theory, Cambridge University Press, Cambridge, 1969.
5. R. Bendix and S.M. Lipset eds. Class, Status and Power, Routledge Kegan Paul, London, 1974.
6. H.H. Gerth and C. Wright Mills eds., From Max Weber: Essays in Sociology, Kegan Paul, London, 1964.
7. R. Dahl, Modern Political Analysis, Prentice Hall, 1965.
8. ICSSR, Studies in the Fourth General Elections.
9. Almond and Coleman, Politics of Developing Areas, Princeton University Press, 1960.
10. A.R. Desai, Essays on Modernisation of Underdeveloped Societies, Thacker and Co., Bombay, 1979.
11. L.I. Rudolph and S.H. Rudolph, Modernity of Tradition, University of Chicago Press, 1967.
12. Raymond Aron, Main Currents of Sociological Thought, Vols. 1 and 2, Penguin Books, 1968.
13. T.B. Bottomore, Elites and Society, Penguin Books, 1966.
14. T.B. Bottomore, Sociology, Unwin University Books, 1972.
15. S.P. Huntington, Political Order in Changing Societies, Yale University Press, 1968.
16. Barrington Moore, Social Origin of Dictatorship and Democracy, 1966.
17. Richard Braungart, Society and Politics.
18. Ali Ashraf and L.N. Sharma, Political Sociology.
19. Michel Rush and Phillip Althouse, Introduction to Political Sociology, Nelson, 1971.
20. Bipan Chandra, India Since Independence, New Delhi, Penguin, 2006.
21. Rajni Kothri, Caste in Indian Politics, Orient Blackswan, 2010
22. Sumit Sarkar, Caste in Modern India, Vol. II, Orient Blackswan, 2014
23. Ranbir Samattar & Suhit K. Sain, Political Tradition and Development Imperatives in India, Routledge, 2012
24. Akeel Bilgrani, Democratic Culture: Historical and Philosophical Essays (Critical Interventions in Theory & Praxis), Routledge, 2011
25. Keith Fabls, Political Sociology: A Critical Introduction, Rawat, 1999

**SEMESTER–VI**

**POLITICAL SCIENCE**

**Any one of the following options:**

**PAPER (I): WESTERN THINKERS**

**PAPER (II): MARX AND LENIN**

**OPTION PAPER (I): WESTERN THINKERS**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper–Setters / Examiners**

**Each question paper will consist of two sections as follows:–**

**Section–A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT–I**

**Plato:**

Theories of Justice and Platonic Justice: The prima–facie theories of Justice; Traditional, Radical and Pragmatic, Platonic Justice, an assessment.

Plato’s Theory of Ideas; Theory of Ideal State.

**UNIT–II**

**Plato:**

(1) Theory of Education (2) Theory of Communism (3) Plato’s Concept of Philosopher King.

**UNIT–III**

**Thomas Hill Green (1836–1882):** Concept of Freedom, Theory of Rights.

**Political Obligation:** Contribution of T.H. Green.

**UNIT–IV**

**John Stuart Mill (1806–1873):**

Concept of Liberty, Representative Government, Proportional Representation.

**SEMESTER–VI**

**POLITICAL SCIENCE**

**Books Recommended:**

1. G.H. Sabine: A History of Political Thought (Calcutta), Oxford and IBH Pub. Co., 1975.
2. Ernest Barker: The Political Thought of Plato and Aristotle, Dever Publications, New York, 1956.
3. C.L. Wayper: Political Thought, The English University Press, London, 1967.
4. F.M. Corford: The Republic of Plato, Oxford University Press, London, 1964.
5. R.B. McCullam: Mill on Liberty and Representative Government, Oxford, Blackwell, 1946.
6. Brian Nelson, Western Political Thought, New Delhi, Pearson Education, 2006.
7. Aeon J. Skoble and Tibor R. Machan, Political Philosophy, New Delhi, Pearsons, 2007.
8. J.C Johari, *Political Thought* Metro Politic, 2012.
9. Andrew Heywood, *Political Ideologies*, Palgrave, 2007.
10. Manoj Sharma, *Political Theory and Thought*, Anmal, 2004
11. N.D Arora & S.S. Awasthy, *Political Theory and Political Thought*, Har-Anand, 2010.

**SEMESTER–VI**

**POLITICAL SCIENCE**

**OPTION PAPER (II): MARX AND LENIN**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: Instructions for the Paper–Setters / Examiners.**

**Each question paper will consist of two sections as follows:–**

**Section–A:** The examiner shall set 10 questions. Candidates will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this section shall be 28 marks.

**Section–B:** The examiner shall set 8 questions, two from each unit. The candidate shall attempt 6 questions in all, one from each unit. Each question carries 12 marks. The total weightage of this section shall be 72 marks.

**UNIT–I**

**MARX:**

1. Scientific Socialism: Meaning, Utopian and Scientific; Salient aspects of Scientific Socialism; Evaluation.
2. Historical Materialism: Meaning, Basis and Evaluation.

**UNIT–II**

**MARX:**

1. Class struggle.
2. (a) Concept of State: Marxian Views on State;  
 (b) Marx concept of Class and Classless society, Concept of Stateless society;  
 (c) Theory of Surplus Value.

**UNIT–III**

**LENIN:**

1. (a) State and Revolution.  
 (b) Role of Party as Vanguard of Revolution.

**UNIT–IV**

**LENIN:**

1. Theory of Imperialism: The Highest Stage of Capitalism, its implications; Elaboration of the Theory: An Assessment of the Theory.
2. Lenin as a Revolutionary.

**SEMESTER–VI**

**POLITICAL SCIENCE**

**Books Recommended:**

1. C.L.Wayper, *Political Thought* (Bombay B.L.Publication, 1974).
2. Lenin, *State and Revolution* (Moscow; Progress Publishers).
3. Isian Berlin, Marx
4. Tom Bottomore, *Dictionary of Marxian Thought*, New Delhi, Pan Borth, 2005.
5. Lenin, *Capitalism as the Highest Stage of Imperialism*,
6. Raymond Aron, *Main Currents of Sociological Thought*, New Delhi, Penguins, 2005 (Reprint).
7. Francis Coker, *Recent Political Thought*,
8. Kolakowski, *Main Currents of Marxian Thought*, New Delhi, Oxford University Press, 1978.
9. Andrew Heywood, *Political Ideologies*, Palgrave, 2007
10. J.C Johri, *Political Thought*, Metro Politic, 2012
11. Michael Freedman , *The Oxford Handbook of Political Ideologies*, Oxford, 2013
12. Brian R Nelson, *Western Political Thought*, Pearson, 2006
13. N.D Arora & S.S. Awasthy, *Political Theory and Political Thought*, Har-Anand, 2010

**SEMESTER-III**

**HISTORY**

**Any one of the following options:**

**OPTION (I) ASHOKA**

**OPTION (II) AKBAR**

**OPTION (I)**

**ASHOKA**

**Time: 3 Hours**

**Max Marks: 100**

**Instructions for the Paper Setters:**

**Section-A:** The examiner will set **10** questions from entire syllabus and the candidate will attempt **6** questions carrying **6** marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of this Section will be **36** marks.

**Section-B:** The examiner will set **8** questions, **two** from each Unit. The candidate will attempt **4** questions selecting one from each Unit with at least 5 pages each. Each question will carry **16** marks. The total weightage of this Section will be **64** marks.

**Important Note:** Paper Setter must ensure that questions in **Section-A** do not cover more than one point, and questions in **Section-B** should cover at least 50 per cent of the theme.

**UNIT-I**

1. Sources; The political background and early life.
2. Expansion and consolidation of the empire.

**UNIT-II**

3. Central government.
4. Provincial administration.

**UNIT-III**

5. The Dhamma; Social Order
6. Economy and Art.

**UNIT-IV**

7. Relations with foreign Powers.
8. The decline of Mauryan Empire.

**Note: Wherever possible, candidate may illustrate answer with maps for which credit would be given.**

**Recommended Readings:**

1. Romila Thaper, *Ashoka and the Decline of the Mauryas*, OUP, Delhi, 1997.
2. \_\_\_\_\_., *Early India from the Origins to AD 1300*, Penguin, New Delhi, 2002.
3. Upinder Singh, *A History of Ancient India and Early Medieval India from the Stone Age to the 12<sup>th</sup> Century*, Longman, Delhi, 2009.
4. Irfan Habib and Vijay Singh Thakur, *Mauryan India*, Tulika, New Delhi, 2007.
5. R.C.Majumdar (Ed.), *The Age of Imperial Unity - The History of Culture of the Indian People*, Vol. II, Bharatiya Vidya Bhawan, Bombay, 1968 (8<sup>th</sup> Ed).
6. D.D. Kosambi, *An Introduction to the Study of Indian History*, Popular Book Depot, Bombay, 1956.
7. Radha Kumar Mookerji, *Ancient India*, Press (Pb.) Private Ltd., Allahabad, 1956.

**SEMESTER–III**

**HISTORY**

**OPTION (II)**  
**AKBAR**

**Time: 3 Hours**

**Max Marks: 100**

**Instructions for the Paper Setters:**

**Section–A:** The examiner will set **10** questions from entire syllabus and the candidate will attempt **6** questions carrying **6** marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of this Section will be **36** marks.

**Section–B:** The examiner will set **8** questions, **two** from each Unit. The candidate will attempt **4** questions selecting one from each Unit with at least 5 pages each. Each question will carry **16** marks. The total weightage of this Section will be **64** marks.

**Important Note:** Paper Setter must ensure that questions in **Section–A** do not cover more than one point, and questions in **Section–B** should cover at least 50 per cent of the theme.

**UNIT–I**

1. Sources; Bairam Khans Regency (1555–68).
2. Conflict with the Nobility (1560–67)

**UNIT–II**

3. Expansion of the Empire in North; Akbar’s Deccan Policy.
4. The Din–I–illahi and Akbar’s religious policy.

**UNIT–III**

5. The Land Revenue Administration of Akbar. The Mansabdari System.
6. The Jagirdary System.

**UNIT–IV**

7. The Central Government. The Provincial and Local Administration.
8. Patronage of literature, art and architecture.

**Note:** Wherever possible, candidate may illustrate answer with maps for which credit would be given.

**Recommended Readings:**

1. Satish Chandra, *Mughal India*, Har Anand Publications, New Delhi, 1999.
2. Irfan Habib (Ed.), *Akbar and his Times*, New Delhi, 1997.
3. \_\_\_\_\_, *Agrarian System of Mughal India (1526-1707)*, OUP, New Delhi, 2002.
4. \_\_\_\_\_, *Medieval India: A Study of a Civilization*, NBT, New Delhi, 2007.
5. Muzaffar Alam and Sanjay Subramanian (Eds.), *The Mughal State (1526-1750)*, OUP, New Delhi, 2000.
6. Shireen Moosvi, *People, Taxation and Trade in Mughal India*, OUP, New Delhi, 2010.
7. \_\_\_\_\_, *Economy of the Mughal Empire c. 1595: A Statistical Study*, OUP, New Delhi, 1986.
8. V.A. Smith, *Akbar the Great Mughal, 1542–1605*, S. Chand. & Co. New Delhi, 1966 (reprint).
9. A.L. Srivastava, *Akbar the Great*, Vol. I, Shiv Lal Aggarwal & Co., Agra, 1962.
10. Athar Ali, *The Mughal Nobility under Aurangzeb*, (Chapter II & III) Asia Publishing House, New Delhi, 1970 (reprint).
11. I.H. Qureshi, *The Administration of the Mughal Empire* (Chapter IV & XI) Janaki Prakashan, New Delhi, 1979 (reprint).
12. Ibn Hassan, *Central Structure of Mughal Empire*, Munshi Lal Manohar Lal, New Delhi 1970.

**SEMESTER-IV**

**HISTORY**

**Any ONE of the following options:**

**OPTION (I) RANJIT SINGH**

**OPTION (II) THE NATIONAL MOVEMENT**

**OPTION (I): RANJIT SINGH**

**Time: 3 Hours**

**Max Marks: 100**

**Instructions for the Paper Setter:**

**Section–A:** The examiner will set **10** questions from entire syllabus and the candidate will attempt **6** questions carrying 6 marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of this Section will be **36** marks.

**Section–B:** The examiner will set **8** questions, **two** from each Unit. The candidate will attempt **4** questions selecting one from each Unit with at least 5 pages each. Each question will carry **16** marks. The total weightage of this Section will be **64** marks.

**Important Note:** Paper Setter must ensure that questions in **Section–A** do not cover more than one point, and questions in **Section–B** should cover at least 50 per cent of the theme.

**UNIT-I**

1. Sources for the History of Maharaja Ranjit Singh
2. Political Condition of the Punjab at the close of 18<sup>th</sup> Century.

**UNIT-II**

3. Maharaja Ranjit Singh's Conquests of the Sikh Principalities; Conquests of the Rajput Principalities and the Afghan Strongholds.
4. The Trans–Indus Conquests and the North–West Frontier Policy.

**UNIT-III**

5. Relations with the British. Civil Administration
6. Land Revenue and Revenue Administration.

**UNIT-IV**

7. Military Organisation.
8. The Jagirdari System.

**Note:** Wherever possible, candidate may illustrate answer with maps for which credit would be given.

**Recommended Readings:**

1. N.K. Sinha, *Ranjit Singh*, Mukerjee & Co., Calcutta, 1975.
2. G.L. Chopra, *The Panjab as a Sovereign State*, Vishveshvaranand Vedic Research Institute, Hoshiarpur 1960.
3. Indu Banga, *Agrarian System of the Sikhs*, Monohar Publication, Delhi, 1978.
4. Fauja Singh, *Military System of the Sikhs*, Moti Lal Banarsi Das, New Delhi, 1978.
5. \_\_\_\_\_, *Some Aspects of State and Society under Ranjit Singh*, Master Publishers, New Delhi, 1912.
6. B.J. Hasrat, *Life and Times of Ranjit Singh*, Vishveshvaranand Vedic Research Institute, Hoshiarpur, 1977..
7. Khushwant Singh, *Ranjit Singh : Maharaja of the Punjab (1780–1839)*, George Allen & Unwin, London, 1962.
8. J.S. Grewal & Indu Banga, *Maharaja Ranjit Singh and His Times*, G.N.D. University, Amritsar, 1981.
9. J.S. Grewal, *The Reign of Maharaja Ranjit Singh*, Punjabi University, Patiala, 1982.
10. \_\_\_\_\_, *Maharaja Ranjit Singh*, G.N.D. University, Amritsar, 1982.

**SEMESTER-IV****HISTORY****OPTION (II): THE NATIONAL MOVEMENT****Time: 3 Hours****Max Marks: 100****Instructions for the Paper Setter:**

**Section-A:** The examiner will set **10** questions from entire syllabus and the candidate will attempt **6** questions carrying 6 marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of this Section will be **36** marks.

**Section-B:** The examiner will set **8** questions, **two** from each Unit. The candidate will attempt **4** questions selecting one from each Unit with at least 5 pages each. Each question will carry **16** marks. The total weightage of this Section will be **64** marks.

**Important Note:** Paper Setter must ensure that questions in **Section-A** do not cover more than one point, and questions in **Section-B** should cover at least 50 per cent of the theme.

**UNIT-I**

1. Emergence of the National Consciousness. Formation of the National Organization.
2. The early Moderates: Methods and Programme.

**UNIT-II**

3. Rise of extremist politics.
4. Emergence of Gandhi and Non Co-operation.

**UNIT-III**

5. Revolutionary Nationalism.
6. Rise and growth of Socialist and left wing politics.

**UNIT-IV**

7. Towards Puran Swaraj and the Civil Disobedience. The Quit India Movement.
8. Towards Independence and Partition.

**Note: Wherever possible, candidate may illustrate answer with maps for which credit would be given.**

**Recommended Readings:**

1. Bipan Chandra, Amles Tripathi & Barun De, *Freedom Struggle*, National Book Trust, New Delhi, 1977 (3<sup>rd</sup> Ed).
2. Bipan Chandra et al., *India's Struggle for Independence (1857-1947)*, Penguin New Delhi, 1988.
3. Bipan Chandra., *Essays on Indian Nationalism*, Har-Anand, New Delhi, 2005.
4. \_\_\_\_\_., *Indian National Movement: The Long Term Dynamics*, Vikas, New Delhi, 1991.
5. Sumit Sarkar, *Modern India (1885-1947)*, Oriewnt Longman, Delhi, 1983.
6. Sekhar Bandyopadhyay, *From Plassey to Partition: A History of Modern India*, Orient Longman, Hyderabad, 2004.
7. \_\_\_\_\_(Ed.), *National Movement in India: A Reader*, OUP, New Delhi, 2009.
8. Dietmar Rothermund, *The Phases of Indian Nationalism and Other Essays*, Nichiketa, Bombay, 1975.
9. J.R. McLane, *Indian Nationalism and the Early Congress*, Princeton University Press, Princeton, 1977.
10. Jim Massellos, *Nationalism on the Indian Sub–Continent; An Introductory History*, Thomson Nelson, Australia, 1972.
11. Anil Seal, *Emergence of Indian Nationalism: Competition and Collaboration in the later Nineteenth Century*, CUP, Cambridge, 1984.

**SEMESTER-V****HISTORY****THE FRENCH REVOLUTION (1789-1799)****Time: 3 Hours****Max. Marks: 100****Note: Each question paper will consist of two sections as follows:-**

**Section-A:** The examiner will set **TEN** questions and the candidates will attempt **Six** questions carrying **Six** marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of the section will be **36** marks.

**Section-B:** The examiner will set 8 questions, **two** from each Unit. The candidate will attempt **4** questions selecting one from each Unit with at least 5 pages each. Each question will carry **16** marks. The total weightage of this Section will be **64** marks.

**Important Note:** Paper Setters must ensure that questions in **Section-A** do not cover more than one point, and questions in **Section-B** should cover at least 50 per cent of the theme.

**UNIT-I****Topics:**

1. The Growth of revolutionary spirit in France,
2. Revolution in France and the destruction of the ancient regime.

**UNIT-II**

3. Achievements of the Constituent Assembly.
4. The Counter revolutionary activities.

**UNIT-III**

5. The Jacobins and the Girondins.
6. The Reign of Terror (1793-94).

**UNIT-IV**

7. Re-establishment of constitutional regime (1794-95).
8. The rise of Napoleon Bonaparte.

**Note: Wherever possible, candidate may illustrate their answer with maps for which they would get credit.**

**SEMESTER–V**

**HISTORY**

**Books Recommended:**

1. Gershey K Leo, French Revolution and Napoleon. The Central Books Depot; Allahabad, 1973 (reprint).
2. J.M. Thomson, The French Revolution, Basil Blackwell, Great Britian, 1943.
3. H.V.L. Fisher, A History of Europe, Vol. II, Fontana Series, 1977 (reprint).
4. M.J. Syndenham, The French Revolution, University Paper Book Methuen and Co. Ltd., London, 1969.
5. George Rude, Revolutionary Europe, 1789–1815, Fontana, 1979 (reprint).

**SEMESTER–VI****HISTORY****RUSSIAN REVOLUTION OF 1917 AND  
RUSSIAN RECONSTRUCTION UNDER LENIN.****Time: 3 Hours****Max. Marks: 100****Note: Each question paper will consist of two sections as follows:–**

**Section–A:** The examiner will set **TEN** questions and the candidates will attempt **Six** questions carrying **Six** marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of the section will be **36** marks.

**Section–B:** The examiner will set 8 questions, **two** from each Unit. The candidate will attempt **4** questions selecting one from each Unit with at least 5 pages each. Each question will carry **16** marks. The total weightage of this Section will be **64** marks.

**Important Note:** Paper Setters must ensure that questions in **Section–A** do not cover more than one point, and questions in **Section–B** should cover at least 50 per cent of the theme.

**UNIT–I**

1. The February Revolution.
2. The Bolsheviks and the October Revolution.

**UNIT–II**

3. The consolidation of the Bolshevik Regime.
4. The Civil War.

**UNIT–III**

5. The Impact of Revolution.
6. The War Communism.

**UNIT–IV**

7. The economic policy.
8. The new state and society.

**Note: Wherever possible, candidate may illustrate their answer with maps for which they would get credit.**

## **SEMESTER–VI**

### **HISTORY**

#### **Books Recommended:**

1. E.H. Carr, *The Belshevic Revolution 1917–1923*, Vols. 1–3, Macmillian London 1978 (reprint).
2. Leon Trotsky, *The History of Russian Revolution*, Translated by Max Eastmant, Victor Collanoz, London 1965.
3. M.T.Flornaky, *Russian A Short History*, Macmillan, London, 1971 (2<sup>nd</sup> Ed.).
4. G. Golikov, *The October Revolution*, Moscow, 1966.
5. Linet B Coohn, *Russia in Revolution, 1890–1918*.
6. Woindenfeld & Neiholson, 1966.
7. A.G.Major, *Russia: Tsarist and Communist*, Princeton University Press, 1961.

**SEMESTER–III****PSYCHOLOGY****HISTORY AND SCHOOLS OF PSYCHOLOGY****Time: 3 Hours****M. Marks: 100****Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section–A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 2 marks, total weightage of the section being 20 marks.

**Section–B:** It will consist of short answer type questions with answers to each question up to two pages in length. 6 questions will be set by the examiner and 4 will be attempted by the candidates. Each question will carry 12 marks, total weightage of the section being 48 marks.

**Section–C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 16 marks, total weightage of the section being 32 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

Origin of Modern Psychology as a Science. Contributions of Muller, Helmholtz, Wundt, Pavlov and Ebbinghaus

Beginning of Psychophysical experiment: Contributions of Weber and Fechner,  
Classical Psychophysical methods–Method of average error, Method of limits and method of Constant stimuli

Origin, contents, critical analysis of functional and structural Psychology.

Origin, contents and critical analysis of Behaviorism and Gestalt psychology.

Origin, contents and critical analysis of Psychoanalysis and Neo–Psychoanalysis (Adler, Jung and Erickson).

**Books Recommended:**

1. Boring, E.G. (1969) History of Experimental Psychology, 2<sup>nd</sup> Edition.
2. D. Amato, M.R. (1970) Experimental Psychology, Tata Mc Graw Hill, New Delhi.
3. Marx M.H. & Hillix, W.A.(1978) Systems and Theories of Psychology, Tata McGraw- Hill Publishing Co. Ltd.. New Delhi.
4. Schulz, D.P.A (1971) History of Modern Psychology, New York: Academic Press.
5. Strange, J.R. (1965) Abnormal Psychology, Mc Graw Hill Book, New York.
6. Woodworth, R.S. (1976) Contemporary Schools of Psychology, London Methuen.
7. Brennan, J. F. (2005) History and Systems of Psychology, Perarsons Education.

**SEMESTER-IV****PSYCHOLOGY****SOCIAL PSYCHOLOGY****Time: 3 Hours****Max Marks: 100****Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section-A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 2 marks, total weightage of the section being 20 marks.

**Section-B:** It will consist of short answer type questions with answers to each question up to two pages in length. 6 questions will be set by the examiner and 4 will be attempted by the candidates. Each question will carry 12 marks, total weightage of the section being 48 marks.

**Section-C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 16 marks, total weightage of the section being 32 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Introduction:** Nature, Scope, need and problems of Social Psychology; Relationship between Psychology, Social Psychology, Sociology and Cultural anthropology.

**Social Interaction and Social Attraction Communication:** Verbal and Non Verbal

**Group Dynamics and Leadership:** Groups and their kinds (open and closed groups, primary and secondary groups, in groups and out groups) Formation of Groups, Leadership, leadership qualities.

Meaning and Nature of social control, Propaganda and public opinion, prejudices.

**Corruption:** Advance impact of Corruption on society

**Attitude:** Concept & nature of attitudes, Formation of Attitudes, Attitude Change Cognitive Dissonance theory and Balance theory

**Books Recommended:**

1. Myers, D.G. (1999): Social Psychology, 6th Ed. Mc Graw Hill Boston. USA.
2. Baron, R. A, Byrne, D. & Kantowitz, B. H. (1980): Psychology understanding Behaviour, Holt, Rinehart, USA.
3. Gerrig, R. J. & Zimbardo, P. G. (2005): Psychology and Life, Pearson Education, New Delhi.
4. Baron, R. A., Byrne, D. & Branscombe, N. R. (2006): Social psychology. Pearson Education, New Delhi.
5. Baron, Robert A. & Byrne, D. (2007) Social Psychology, 11th Edition, Education Donn.
6. Franjoi, S. L. (2000) Social Psychology, Mc Graw Hill.

**SEMESTER–V**

**PSYCHOLOGY**

**PSYCHOLOGICAL TESTING**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section–A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 2 marks, total weightage of the section being 20 marks.

**Section–B:** It will consist of short answer type questions with answers to each question up to two pages in length. 6 questions will be set by the examiner and 4 will be attempted by the candidates. Each question will carry 12 marks, total weightage of the section being 48 marks.

**Section–C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 16 marks, total weightage of the section being 32 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Syllabus and Courses of Reading:**

**History of Psychological Testing:**

**Basic Principles:** Definition of Psychological test, objectivity, a representative population sample, Sampling of traits and functions.  
Construction and standardization of tests

**Intelligence and Academic Achievement:**

**Validity** – Nature of Types.

**Reliability** – Nature of Types.

Factors affecting validity and reliability.

**Interpretation of test scores:** Qualitative and quantitative types of norms and standards.

**Books Recommended:**

- |    |                         |   |
|----|-------------------------|---|
| 1. | Anastasi A (2007)       | Psychological Testing 2 <sup>nd</sup> impression, Pearson Education                   |
| 2. | Cronbach. Lee J. (1970) | Essentials of Psychology Testing 3 <sup>rd</sup> edition, Harper and ROW              |
| 3. | Freeman, F.S.(1971)     | Theory and Practice of Psychological Testing 3 <sup>rd</sup> print, Oxford Publishing |

**SEMESTER-VI  
PSYCHOLOGY**

**APPLIED PSYCHOLOGY**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:**

The question paper will consist of three sections: A, B and C.

**Section-A:** It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 2 marks, total weightage of the section being 20 marks.

**Section-B:** It will consist of short answer type questions with answers to each question up to two pages in length. 6 questions will be set by the examiner and 4 will be attempted by the candidates. Each question will carry 12 marks, total weightage of the section being 48 marks.

**Section-C:** It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 16 marks, total weightage of the section being 32 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

**Unit-I**

Nature, history and scope of applied psychology, Educational Psychology-Nature and scope, Effective teaching and classroom management-characteristics of effective teachers, Teaching Methods, Classroom management, disciplining and communication. Introduction to special education for exceptional children

**Unit-II**

**Counselling:** Concept, goals and ethical issues of counselling, characteristics of effective counsellor, counselling process, Counselling in Schools, Counselling for addictive behaviour, Career Counselling

**Unit-III**

**Organizational Behaviour:** Nature, history and scope, Understanding and adapting to work environment, Dynamics of organizational behaviour, work stress and its management organizational change

**Unit-IV**

**Health Psychology:-** Nature, scope and development of Health Psychology . The role of health psychologists in society, the role of Psychology to deal with AIDs, Psychosomatic disorder (Ulcers, migraine pain & Asthma) Cardiovascular diseases

**Books Recommended:**

1. Robbins, S. P. & Judge, T. A. Organizational Behaviour, Ninth edition, New Delhi: Prentice hall of India
2. Allen, F. (2011) Health Psychology and Behaviour: Tata Mc Graw Hill Edition
3. Weiten, W & Lloyd, M. A. (2007) Psychology Applied to Modern Life. Thomson Detmar Learning
4. Wool Fork, A. Mishra, G. & Jha, A. K. (2012) Fundamentals of Educational Psychology Pearson Education
5. Rao, S. N. (1984) Coounselling Psychology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.

### **SEMESTER–III**

### **GEOGRAPHY**

#### **THE NATURE OF GEOGRAPHY**

**Time: 3 Hours**

**Max. Marks: 100**

**Notes:**

1. A compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1.

**Objectives:**

- To introduce the students to the philosophical and methodological foundations of the subject and its place in the world of knowledge;
- To familiarise them with the major landmarks in development of geographic thought at different periods of time.

**Course Contents:**

#### **UNIT–I**

The basic objective of geography; relevance of geography to societal problems; the role of a geographer in planning.

The place of geography in classification of sciences dealing with empirical reality.

Empirical/ theoretical approach in geography.

#### **UNIT–II**

Geography as the study of : (i) distributions, (ii) man–environment relationship, (iii) areal differentiation, and (iv) spatial organisation.

Environmental determinism versus possibilism.

#### **UNIT–III**

Relationship between geography and history; dualism between physical and human geography, dualism between regional and systematic geography.

Time and genesis in geography.

#### **UNIT–IV**

The concept of regions with special reference to natural regions and specific regions.

Behavioural geography.

Quantitative revolution in geography.

**Books Recommended:****Essential Readings:**

1. Husain, Majid : *Evolution of Geographical Thought*, Rawat, Jaipur, 1984
2. Martin, G.J. & James, P.E. : *All Possible Worlds – A History of Geographical Ideas*, John Wiley, New York, 1993.

**Further Readings:**

1. Dikshit, R.D. : *Geographical Thought: A Contextual History of Ideas*, Prentice Hall, New Delhi, 2000.
2. Hartshorne, Richard : *Perspectives on the Nature of Geography*, Rand, Mc Nally and Co., Chicago, 1959.
3. Minshull, R. : *The Changing Nature of Geography*, Hutchinson University Library, London, 1970.

**Pedagogy:**

- Students of geography may be encouraged to interact with their counterparts from other disciplines and discuss the nature of the subject.
- The students may be encouraged to collect information on any theme amenable to geographical interpretation.

**SEMESTER-IV****GEOGRAPHY**

**Any one of the following options:**

**Option (i): POPULATION GEOGRAPHY (An Elementary Course)**

**Option (ii): URBAN GEOGRAPHY (An Elementary Course)**

**Option (i): POPULATION GEOGRAPHY**  
**(An Elementary Course)**

**Time: 3 Hours**

**Max. Marks: 100**

**Notes:**

1. A compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1.
3. Special credit will be given to suitable use of maps.

**Objectives:**

The course is meant to provide an understanding of spatial and structural dimensions of population and the emerging issues. The course is further aimed at familiarising the students with global and regional level problems and also equip them for comprehending the Indian situation.

**Course Contents:**

**UNIT-I**

Nature and scope of population geography, factors affecting distribution of population; present world pattern of population distribution. Density of population – various types of densities and their significance; broad spatial patterns of density of population in the world.

**UNIT-II**

Growth of population – Determinants of population growth; trends of population growth in developed and developing countries of the world.

Migration – Types, causes and consequences.

**UNIT-III**

Sex composition – Its determinants and world patterns.

Occupational structure – A comparative study of developed and developing countries. Literacy – its determinants and world patterns.

**UNIT-IV**

Urbanization – Definition, process of urbanization; comparative study of urbanization in developed and developing countries.

**Books Recommended:**

**Essential Readings:**

1. Chandna, R.C. : *A Geography of Population*, Kalyani Publishers, 1996.
2. Clarke, J.I. : *Population Geography*, Pergamon Press, Oxford, Latest Edition.

**Further Readings:**

1. Chandna, R.C. : *Jansankhya Bhoogol*, Kalyani Publishers, New Delhi, 1996.
2. Crook, N. : *Principles of Population and Development*, Pergamon, New York, 1997.
3. Demko, G.J., H.M. Rose : *Population Geography, A Reader*, McGraw Hill Co., New York, & G.A. Schnell 1970.
4. Jones, H .R. : *Population Geography*, Harper and Row, London, 1981.
5. Sundaram, K.V. & Nangia, S. (Eds.) : *Population Geography*, Heritage, New Delhi, 1986.
6. Trewartha, G.T. : *The Less Developed Realm – A Population Geography*, McGraw– Hill, New York, 1972.
7. Trewartha, G.T. : *The More Developed Realm : A Geography of its Population*, Pergamon Press, Oxford, 1979.
8. Trewartha, G.T. : *A Geography of Population : World Patterns*, John Wiley & Sons Inc. New York, 1969.
9. Zelinsky, Wilbur : *A Prologue to Population Geography*, Prentice Hall, New Jersey, 1966.

**Pedagogy:**

Use maps and atlases.

Students should be encouraged to read Population Clock.

Consult census publications.

Organised field work.

Organise discussions on population issues.

## **SEMESTER-IV**

### **GEOGRAPHY**

#### **Option (ii): URBAN GEOGRAPHY (An Elementary Course)**

**Time: 3 Hours**

**Max. Marks: 100**

#### **Notes:**

1. A Compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each UNIT. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1.

#### **Objectives:**

- To understand the process of urbanisation and origin, growth and classification of urban settlements with relevant theories and models;
- To examine the changing economic base and structure of the contemporary cities;
- To relate urbanisation process and the evolution of the urban system;
- To examine the contemporary urban issues and suggest new urban planning and urban policy.

#### **Course Contents:**

##### **UNIT-I**

Definition, nature and scope of urban geography.

Definition of urban places.

Evolution of city through historical times: Ancient, medieval, modern.

##### **UNIT-II**

Site and situation of cities; definition, importance, types.

Size and spacing of cities.

Ecological Processes: Centripetal and centrifugal forces, types of ecological processes.

##### **Unit-III**

Internal structure of cities : Theories of internal structure and their evaluation, concentric zone theory, sector theory, multiple nuclei theory.

##### **UNIT-IV**

City – region relations.

Umland of cities: Definition, bases of demarcation, attributes.

Rural – urban fringe: attributes and demarcation.

**Books Recommended:****Essential Readings:**

1. Carter, Harold : *The Study of Urban Geography*, Edward Arnold, London, Latest Edition.
2. Krishan, Gopal : *Nagar Bhugol*, Punjab State University Text Book Board, Chandigarh, 1974.
3. Mayer, H.M. and Kohn, L.F. (Eds.) : *Readings in Urban Geography*, University of Chicago Press, Chicago, 1967.
4. Sidhartha, K. Mukherjee, S. : *Urbanization & Urban Systems*, Kissalaya Publication, New Delhi, 2000.
5. Rama Chandran : *Urbanization & Urban System*, Kalyani Publishers, India.

**Further Readings:**

1. Johnson, H.J. : *Urban Geography: An Introductory Analysis*, Pergamon Press, London, 1967.
2. Knox, Paul : *Urban Social Geography: An Introduction*, Longman, London, 1982.

**Pedagogy:**

- Awareness to data sources such as from Census of India, Town Planning organisations, and their application to understand and evaluate the spatial patterns and the processes of urbanisation should be highlighted in the class. This needs to be in the form of selected case studies.
- Study of urban morphology and urban functions with special reference to selected towns need to be encouraged.
- Atlases and maps of NATMO and Census should be consulted and students should be given opportunity to participate in group discussions.

**SEMESTER-V****GEOGRAPHY****APPLIED GEOGRAPHY****Time: 3 Hours****Max. Marks: 100****Notes:**

1. A compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1.

**Objectives:**

To understand the prevalent issues in environment, society and economy and to provide a geographical interpretation with special reference to India

**Course Contents:****UNIT-I**

Applied geography: Meaning and concepts:

Meaning, nature and scope and significance of applied geography. Concept of planning region.

Regionalisation

scheme with reference to economic regionalisation.

**UNIT-II**

Industrial location theory of Weber and its application in industrial planning.

Central Place Theory and its application in location of central places.

Agricultural Location Theory and its application in agricultural location.

Growth Pole Theory and its application in regional development planning.

**UNIT-III**

Applied Geography: Method, Techniques and Contributions.

Cartographic techniques of dot, choropleth, graduated circle. Population and landuse mapping.

Quantitative methods and techniques of crop combination; functional classification of urban centres.

**UNIT-IV**

Field surveys for rural and urban landuse.

Rural landuse studies; urban and regional planning; industrial planning; nature of resource management and planning.

**Books Recommended:**

**Essential Readings:**

1. Carter, H. : The Study of Urban Geography, Arnold–Heinemann, New Delhi, 1979.
2. Chorley, R.J. & P. Hagget (Ed.) : Models in Geography, Methuen & Co., London, 1967.
3. Jones, Alun : Fieldwork in Geography, Longman, Green Co., London, 1968.
4. Stamp, L.D. : Applied Geography, Penguin Books, England, 1960.
5. Singh, R.L. (Ed.) : Applied Geography, National Geographical Society of India, Department of Geography, B.H.U., Varanasi, India.

**Further Readings:**

1. Dawson, J.A. : Geography, Teach Yourself Books, Hodder and Stoughton, UK.
2. Misra, R.P. and others : Regional Development Planning in India, Vikas, New Delhi.
3. Misra, V.C. & others : Essays in Applied Geography, University of Sagar, India.
4. Sen Gupta, P. & Sadasyuk Galina : Economic Regionalization of India, Problems and Approaches, Registrar General Census of India.
5. Singh, Jasbir & Dhillon, S.S. : Agricultural Geography, Tata McGraw Hill, New Delhi, 1994.

**Pedagogy:**

Exposure to media;

National Five Year Plan documents and publications related to planning.

Field work related to land–use and other socio–economic issues.

**SEMESTER–VI****GEOGRAPHY**

**Any One of the following options**

- Option (i) : AGRICULTURAL GEOGRAPHY (An Elementary Course)**  
**Option (ii) : POLITICAL GEOGRAPHY (An Elementary Course)**  
**Option (iii) : ENVIRONMENTAL GEOGRAPHY (An Elementary Course)**

**Option (i): AGRICULTURAL GEOGRAPHY**  
**(An Elementary Course)**

**Time: 3 Hours**

**Max. Marks: 100**

**Notes:**

1. A Compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each UNIT. The students will be required to attempt one question from each UNIT. These will be in addition to the compulsory question at serial number 1.

**Objectives:**

- To familiarise the students with the concepts and development of agriculture;
- To examine the role of agricultural determinants towards changing cropping patterns, intensity, productivity, diversification and specialisation. The course further aims to familiarise the students with the application of various theories, models and classification schemes of cropping patterns and productivity.
- Its objective is also to discuss environmental, technological and social issues in agricultural sector with special reference to India.

**Course Content****UNIT–I**

Nature, scope and significance of agricultural geography.

General landuse classification.

Physical determinants of agricultural landuse: Relief, climate, soils.

**UNIT–II**

Social and cultural determinants of agricultural landuse, land tenure, size and fragmentation of holdings and labour.

Economic determinants of agricultural landuse: Marketing facilities, transport facilities, tariff and import restrictions, price incentives, credit.

### UNIT-III

A critical review of Whittlesey's agricultural classification.

Characteristics and world patterns of the following:

Subsistence types of agriculture: Nomadic herding, shifting cultivation, rudimentary sedentary tillage, intensive subsistence tillage, subsistence crop and livestock farming.

### UNIT-IV

Commercial types of agriculture: livestock ranching, commercial plantation farming, commercial grain farming, mixed farming, commercial dairy farming.

### Books Recommended:

#### Essential Readings:

1. Alexander, J.W. : *Economic Geography*, Prentice Hall, Englewood Cliffs, latest Edition.
2. Husain, M. : *Agricultural Geography*, Inter-India Publications, New Delhi, 1979.
3. Singh, J. & Dhillon, S.S. : *Agricultural Geography*, Tata McGraw Hill Publishing, New Delhi, 1994.

#### Further Readings:

1. Morgan, W.B. & Munton, R.J.C. : *Agricultural Geography*, Methuen, London, 1971.
2. Symons, L. : *Agricultural Geography*, G. Bell & Sons, London, 1964.

#### Pedagogy:

The teacher should impress the students the overall importance of agriculture in the global perspective. The world is fast changing and its impact is felt on agriculture. Population is increasing and demand of agricultural products is also on the increase. Contrary to it, the farm lands are decreasing, that necessitates infusion of technology in agricultural sector. It is causing environmental pollution. The teacher should interact with students on above mentioned issues. Examples from neighbouring areas may be given to the students for better perceptions.

## **SEMESTER–VI**

### **GEOGRAPHY**

#### **Option (ii): POLITICAL GEOGRAPHY (An Elementary Course)**

**Time: 3 Hours**

**Max. Marks: 100**

#### **Notes:**

1. A Compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each UNIT. The students will be required to attempt one question from each UNIT. These will be in addition to the compulsory question at serial number 1.

#### **Objectives:**

- To familiarise the students with the geographical factors which have a bearing on the political/administrative organisation of space,
- To enhance awareness of multi-dimensional nature of geo-political space.

#### **Course Content:**

##### **UNIT–I**

Nature and scope of political geography, phases in the development of political geography. Physical elements of political geography: Location, size and shape, relief, climate, and seas and oceans.

##### **UNIT–II**

Economic elements of political geography: Basic natural resources; food and power, minerals, industry, trade and transportation.

Human-cultural elements of political geography: Ethnographic structure of nations, language, religion, population, quantity and quality.

##### **UNIT–III**

Concepts of frontiers and boundaries: Classification of boundaries.

Global distribution of political power: Views of Mackinder, Mahan and Spykman and their contemporary relevance.

##### **UNIT–IV**

International tension: Identification of tension areas and factors contributing to tensions in different areas with special examples from Middle East and Indian Ocean.

Political Geography of the Indian Ocean.

**Books Recommended:****Essential Readings:**

1. De Blij, H.J. : *Systematic Political Geography*, John Wiley, New York, 1968.  
Glassner, M.
2. Dikshit, R.D. : *Political Geography: A Contemporary Perspective*, Tata McGraw Hill, New Delhi, 1996.

**Further Readings:**

1. Muir, R. : *Modern Political Geography*, Macmillan, London, 1981.
2. Prescott, J.R.V. : *Political Geography*, Methuen, London, 1992.
3. Prescott, J.R.V. : *The Geography of Frontiers & Boundaries*, Aldine Pvt. Ltd., Chicago, 1965.
4. Sharma, R.C. : *Political Geography of the Indian Ocean*.
5. Valkenberg, S.V. : *Elements of Political Geography*, Prentice Hall of India, & Stotz, Carl, L. New Delhi, 1963.

**Pedagogy:**

- Fieldwork to understand the political/administrative boundary configuration and people's problems and perceptions.
- Consult political maps (large scale, small scale)
- Atlases and archival records,
- Collect relevant newspaper items for group discussion,
- Prepare pin-up board for display of important events of geopolitical nature.

**SEMESTER–VI****GEOGRAPHY****Option (iii): ENVIRONMENTAL GEOGRAPHY  
(An Elementary Course)****Time: 3 Hours****Max. Marks: 100****Notes:**

1. A Compulsory question containing short answer type questions shall be set covering the whole syllabus. This question will have 10 parts of 2 marks each (total 20 marks).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each UNIT. The students will be required to attempt one question from each UNIT. These will be in addition to the compulsory question at serial number 1.

**Objectives:**

- To understand the significance of environment and its interrelationship with man.
- To understand the importance of soil and factors responsible for erosion.
- The importance of energy sources, forest and wild life and their preservation be studied.

**Course Content:****UNIT–I**

**Environment and Geography:** Relationship between geography and environment; definition and scope of environmental geography; significance of environmental studies.

**The Environment:** Characteristics, components and functioning; concept of healthy environment. **(6 + 6 = 12 Lectures)**

**UNIT–II**

**The Soil System:** origin and composition; horizons, texture, chemistry, factors influencing soil types; soil erosion, soil conservation; and soil pollution.

**Energy:** Energy flow in the ecosystem; environmental impact of both conventional and non–conventional energy sources. **(6 + 4 = 10 Lectures)**

**UNIT–III**

**Forests:** Significance; world reserves; deforestation; and conservation strategies.

**Wildlife:** Wildlife and environment relationship, regional distribution; conservation of wildlife; and wildlife in India. **(5 + 5 = 10 Lectures)**

### UNIT-IV

**Population and Environment:** Basic issues, environmental impact of population growth and agenda for action.

**Global Environmental Issues:** Water contamination; atmospheric pollution; acid rain; noise pollution; and control strategies.

Legislative strategies, environmental issues and the international community; Rio-de-Janeiro Earth Summit of 1992; selected environmental protection laws in India;

Environmental Protection Act, National Environmental Tribunal Act, Wildlife Protection Act, Forest Conservation Act, Air Act, Water Act. **(6 + 6 + 6 = 18 lectures)**

#### Books Recommended:

##### Essential Readings:

1. Adam, W.M.(1990) : *Green Development: Environment & Sustainability in the Third World*, Routledge, London.
2. Chandna, R.C.(1998) : *Environment Awareness*, Kalyani Publishers, New Delhi. Clarendon Press, Oxford.
3. Goudie, A.S. (1993) : *The Human Impact on Environment*, Blackwell, Oxford.

##### Essential Readings:

1. Chandna, R.C. (1999) : *Vatavaran Sikhya*, (Punjabi), Kalyani Publishers, New Delhi.
2. Chandna, R.C. (1999) : *Paryavaran Shiksha Ki Ruprekha*, (Hindi), Kalyani Publishers, New Delhi.
3. Ehrlich, Paul, R. et. al : *Ecoscience – Population, Resources and Environment*, (1977) Freeman and Co., San Francisco.
4. Goudie, A.S. (1992) : *Environmental Change, Contemporary Problems in Geography*, Clarendon Press, Oxford.
5. Pickering, K.T. (1994) : *An Introduction to Global Environmental Issues*, Routledge, London.
6. Singh, Savinder (1991) : *Environmental Geography*, Paryag Pustak Bhawan, Allahabad.
7. Strahler, A.N. & Strahler, L.A. : *Geography and Man's Environment*, John Wiley & Sons, New York.
8. Carter, Harold : *The Study of Urban Geography*, Edward Arnold, London, Latest Edition.
9. Chorley, R.J. & P. Hagget (Ed.), 1967. *Models in Geography*, Methuen & Co., London.

#### Pedagogy:

- The interaction of teacher and student is must on issues related to envornment, energy resources, forest and soil preservation.
- A filed visit to those areas where soil erosion is a serious problem be arranged and methods of preservation be taught.

**SEMESTER: III–VI**

**ECONOMICS (COMMON PAPERS)**

**NOTE:-**

**The student who wishes to opt for B.A. (Hons.) in Economics will take one option in Semester–III, IV, V, VI out of ten options not already opted for.**

**Each optional paper carries 100 Marks.**

**SEMESTER: III–VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER–I: MONEY AND BANKING**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I–IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT–I**

**Money:** Nature, Kinds, Functional, Near Money, Broader Definition of Money. Measures of money supply in India.

**Demand for Money:** Quantity and cash balance theories of money, Keynesian theory of money, Don Patinkin, Friedman and Gurley Shaw approaches.

**UNIT–II**

Structure and rate of interest approaches. Structure of interest rates and interest rate policy in India.

IS and LM functions. Neutrality of money, integration of theory of value and theory of money.

**UNIT–III**

Commercial banks: their systems and functions, credit creation and structure of commercial banks in India.

Central banking: functions and techniques of monetary management. Non–banking financial institutions: role and functions.

**UNIT–IV**

Monetary policy in India: objectives, instruments and limitations of credit control by the policy in India.

International Monetary Co-operation: International Monetary Fund, International Bank for Reconstruction Developments – International Finance Corporation. International Development Association and Asian Development Bank.

**Suggested Readings:**

1. Locket, D.C.: Money and Banking McGraw Hill, New York, 1976.
2. Thorn, R.S.: Introduction to Money and Banking Harper and Raw New York, 1976.
3. Laidler, D.E.W. : The Demand for money Theories and Evidence, Dum – Downelly,
4. Gupta, S.B.: Monetary Planning in India, Oxford Univ. Press, Delhi, 1976.

**SEMESTER: III-VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER-II: PUBLIC FINANCE**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Principles of Public Finance: Subjective and Objective Criteria. Theories of Public Expenditure: Wagner and Keynes. Theory of Social Goods: distinction between public, private and merit goods.

Canons of public expenditure; Classification of public expenditure: obligatory and optional expenditure, revenue and capital expenditure, development and non-development expenditure, plan and non-plan expenditure, productive and unproductive expenditure. Public expenditure and economic growth.

**UNIT-II**

Effects of public expenditure on production, distribution, social over head capital, stability and Innovation. Criteria of Public expenditure.

Theory of public revenue: Theories of Taxation Benefits Principle; Cost of Service Principle; Ability to Pay Theory; Principle of Equity. Effects of taxation.

**UNIT-III**

Analysis of major taxes: income tax, expenditure tax, corporation tax, wealth tax, excise duties, sales tax, customs duties. The concept of taxable capacity. Taxation in a developing economy. Fiscal incidence: theories of tax shifting, Concepts of impact and incidence. Measurement of incidence.

Public Debt: Role of Public Debt. Different forms of public debt. Burden of Public debt, Classical theory of public debt. Reduction of public debt. Debt management.

#### **UNIT-IV**

Budgetary Policy: Functional and economic classification of budgets and their uses. Performance budgets. Budget as an instrument of mobilisation and canalisation of resources and redistribution of income and wealth.

Balance and unbalanced budgets.

Fiscal Federalism: Principles of federal finance. Development Financial: Functional Finance vs Development. Finances.

Mobilisation of financial resources for planned development. Centre-state financial relations. FRBM.

#### **Suggested Readings:**

1. Musgrave R.A.: Theory of Public Finance
2. Taylor Philip: The Economics of Public Finance.
3. Buchanan, J.M.: The public Finance.
4. Baltin, H.: Public Finance.
5. Herber, B.P.: Modern Public Finance
6. U.N.: Government Budgeting and Economic Planning in developing countries.

**SEMESTER: III–VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER–III: HISTORY OF ECONOMIC THOUGHT**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT–I**

**Mercantilism:** Main ideas and principles: Petty, Hume and Cantillon; Physiocracy: Natural Order, Net product and Tableau Economique.

**The Classical School:** Adam Smith and Ricardo – Value, Distribution, International Trade; J.S. Mill on Markets; Malthusian theory of population and gluts.

**UNIT–II**

**The Socialists and the Historical School:** Saint Simon; Sismondi and Proudhon – Critics of classicism; The German and the British Historical School.

**Marxian Economics:** Marxian philosophy; Theory of value and surplus value; theory of development and business cycles; Marx and underdeveloped economies.

**UNIT–III**

**The Austrian and the Marginalist School:** Gossen; J.B. Clark; Carl Merger; Jevons; Wieser, Bohm–Bawerk and the marginalist revolution; Salient features of subjectivism and marginalism. The Neo-classical School and Marshallian Economics: Wicksteed and Wicksell on theory of distribution and theory of capital; Marshallian value and distribution.

**UNIT–IV**

Institutional and Welfare economics: Vilfredo Pareto; Thorstein Veblen; Hobson; A.C. Pigou and K. Arrow.

Keynesian and Post Keynesian Economics: Consumption function; multiplier; theory of interest and investment; business cycles; Keynes vs classicals; Patinkin and Friedman on quantity theory of money; Hayek and Hicks as business cycles; Kaldor and Joan Robinson on growth and distribution.

**Suggested Readings:**

1. Haney: History of Economic Thought, Surjeet Publications, Delhi, 1979.
2. Blaug, M.: Economic Theory in Retrospect, Cambridge Uni. Press, 1997.
3. Schumpeter, J.: History of Economic Analysis, George Allen & Unwin, London, 1967.
4. Roll. E.: History of Economic Thought.
5. Gide and Rist: A History of Economic Doctrines, Oxford Univ., Calcutta, 1973.

**SEMESTER: III-VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER-IV: INTERNATIONAL ECONOMICS**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

**The Pure Theory of International Trade:** Theories of Absolute Advantage. Comparative Advantage and Opportunity costs. Heckscher Ohlin Theory. Factor Price Equalization. Gains from trade, their measurement and distribution. Terms of trade, Secular deterioration hypothesis.

**UNIT-II**

**Commercial Policy:** The theory of Tariffs. Optimum and effective rate of tariff, Non-tariff barriers to trade.

Inter-relationship between trade aid and economic development.

The forms of economic integration among nations, the theory of customs union.

**UNIT-III**

Meaning, concept and the Process of adjustment in the balance of payments. The concept of Foreign Trade multiplier.

Concept of equilibrium exchange rate, theories for determination of exchange rate, Fixed vs. Flexible exchange rate.

**UNIT-IV**

Current problems of Trade and finance of developing countries. Role of Multinational corporations in the developing countries.

Problems of International liquidity, I.M.F., SDRs. Proposals for international monetary reforms.

New international Economic order, Euro-dollar and Euro-currency market and developing countries, East Asia: Success and Crisis.

**Books Recommended:**

1. Sodersten, B.O.: International Economics, IInd Edition, Macmillan Press Ltd., London, 1972.
2. Ingran, James, C.: International Economic Problems, John Willey and Sons, New York, 1978.
3. Lewis, W. Arthur: The Evolution of International Economic Order, Princeton Univ. Press, 1978.
4. Salvatore, D.: International Economics, New York, Macmillan, 1983.
5. Aggarwal, M.R.: International Insitutions and Development in Developing Countries, Deep & Deep Publications, New Delhi, 2001.
6. Anne-O-Krueger: Trade Policies in Developing Countries in Johnes and P.B. Kennen (Ed.) Handbook of International Economics, Vol. I, 1984.

**SEMESTER: III-VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER-V: INDUSTRIAL ECONOMICS**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

**Nature and Scope of Industrial Economics:** Framework and Problems; concepts and organisation of firm-ownership, control and objectives of the firm; optimum firm and conciliation of optima.

**Market Structure:** Meaning and Measurement; Sellers' concentration; Product differentiation; Entry condition and Economies of Scale; Market Structure, size and profitability.

**UNIT-II**

**Market Conduct:** Theories of industrial location – Weber and Sargent Florence; Factors affecting location. Product pricing – Theory and evidence; Investment expenditure: theory and methods of evaluating investment expenditure. Theories and evidence on mergers and diversification.

**Market Performance:** Growth of the firm and constraints; size, growth and profitability; Productivity and Capacity utilization – Concept and measurement.

**UNIT-III**

**Industrial Finance:** Short vs. long term, and internal vs. external sources of firm's finance; firm's financial and capital structure; Financial ratios; debt-equity ratio; Role of commercial and industrial development banks; firms' finance and capital markets.

**Advertising Expenditure:** Nature and type of advertising; models of optimum advertising allocations in firms; market structure, advertising expenditure and profitability; Effects of firm's advertising.

#### **UNIT-IV**

**Innovation and R&D:** Concepts, importance and measurement; market structure and innovation and R&D; Diffusion of industrial technologies; transfer of technology from lab to industry and commercialization of innovations; international transfer of technology.

Industrial Structure and Economic development; process of industrialization – rationale, objectives, strategies and policies; Employment implications of industrialization; public policy and industrialization, industrial development and policy in India (questions in the context of Indian economy shall be asked.).

#### **Suggested Readings:**

1. Devine P.J.et. al.: An Introduction to Industrial Economics, George Allen & Unwin, London, 1985.
2. Hay D.A.: Industrial Economics: Theory and Evidence, Oxford Univ. Press, London, 1979.
3. Barthwal R.R.: Industrial Economics: An Introductory Text, Wiley Eastern, New Delhi, 1980.
4. Richardson, Harry W.: Elements of Regional Economics, Harmondsworth, Penguin, 1973.
5. J.B. Stowell, Frank: Regional Economic Policy.
6. Gadgil, D.R.: The Industrial Evolution of India in Recent Times, Oxford Univ. Press, Delhi, 1979.
7. Kuchhal, S.C.: The Industrial Economy of India, Chaitanya, Allahabad, 1969.
8. Hazari, R.K.: The Structure of the private section. A study of the concentration Ownership and Control, Asia Publications, Bombay, 1967.
9. Malyarov: The Role of the State in the Socio-Economic Structure of India, 1981, Vikas Publishing House, New Delhi, 1983.
10. Government of India, Various Issues: Economic Survey.
11. Kelkar, V.L. and V.V. Bhanoji Rao: Indian Development Policy Imperatives.

**SEMESTER: III-VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER-VI: ECONOMICS OF AGRICULTURE**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Economics of Agriculture: its nature & Scope; Need for separate study of Agricultural Economics; Role of agriculture in economic development. Nature and problems of agricultural development in developing economies.

Inter-dependence of agriculture and industry, Resources in agriculture: Land, its characteristics, factors effecting productivity of land, Importance of land in agriculture; Labour and its characteristics, efficiency of labour; capital and its characteristics.

**UNIT-II**

Transforming traditional agriculture– Schultz’s approach, ‘The poor but efficient hypothesis’, Doctrine of zero value of labour in agriculture, Market approach v/s command approach, Lewis, Ranis and Fei models.

Mellor’s and Boserup’s theories of agriculture development, Terms of trade between agriculture and industry. Economic development and declining importance of agriculture.

**UNIT-III**

Systems of farming, Land reforms: The theoretical issues, Farm size and productivity relationship, Risk and uncertainty in agriculture.

Agricultural price policy in India, New Agricultural Strategy and green revolution, Supply response in agriculture.

#### **UNIT-IV**

Problems of small farmers and agricultural labourers in India Agricultural credit, Source of credit, Role of moneylenders, Problems of agricultural credit, Rural indebtedness. Agricultural marketing, marketable surplus, surplus labour and its utilization, Agricultural Taxation.

#### **Suggested Readings:**

1. Mellor, J.W.: The Economics of Agricultural Development, New York, Cornell University, 1968.
2. Schultz, T.W. : Transforming Traditional Agriculture, Lyall Book Depot, 1970
3. Southworth, M.H. and Johnston, B.F. (eds): Agricultural Development and Economic Growth.
4. Khusro, A.M.: Readings in Agricultural Development.
5. Chaudhari, Primit: Reading in Indian Agricultural Development.
6. Raj, K.N.: Report of the Committee on Agricultural Taxation of income and Wealth.
7. The Indian Society of Agricultural Economics: The Comparative Experience of Agricultural Development in Developing Countries of Asia & the South-East Since World War-II.
8. Singh, S.P. (Ed): Underdevelopment to Developing Economics, Bombay, Oxford University Press, 1978.

**SEMESTER: III-VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER-VII: AGRICULTURAL MARKETING**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Definition and Scope of agricultural marketing, Marketed and marketable surplus, factors affecting marketable surplus, Size distribution of marketable surplus.  
Nature of demand and supply of agricultural commodities, Process of agricultural marketing, Functions of marketing.

**UNIT-II**

Mobilisation of agricultural surplus, terms of trade between agriculture and industry, Problems to agricultural marketing, Measures to improve agricultural marketing.  
Income & Price elasticities of agricultural commodities, cob-webb model, Movement of the surplus to the markets, Public Distribution System.

**UNIT-III**

Structure and functioning of agricultural markets, Legal framework of agricultural marketing, marketing margin, Financing of Agricultural Marketing.  
Marketing efficiency, need for an efficient system of agricultural marketing, measures to improve marketing efficiency, Criteria for judging efficiency of system of agricultural marketing, efficiency of agricultural marketing in India, measures to improve efficiency of agricultural marketing in India.

**Unit-IV**

Foodgrains marketing system in Indian, Forward trading, State intervention in Foodgrains marketing. Role of different agencies (F.C.I. state Agencies, state Department), Buffer stocks.  
Role and importance of market intelligence, Marketing of major-agricultural commodities in India (Foodgrain, commercial crops). MSP, Role of price policy, main elements of price policy. Price expectations and price undertainties, price stabiilsation measures.

**Suggested Readings:**

1. Memoria, C.B.: Principles and Practice of Marketing in India 1979.
2. Jain, S.C.: Principles and Practice of Agricultural Marketing in India.
3. Noore, J.R.Johl, S.S. & Khusro A.M.; Indian Foodgrains Marketing, 1973.
4. Piston, C.: Agricultural Economic- Policy.
5. Shepherd, C.S.: Marketing Farm products-Economics Analysis (Chapters 9, 10, 11).

**SEMESTER: III-VI**

**ECONOMICS (COMMON PAPERS)**

**PAPER-VIII: ECONOMICS OF PUBLIC ENTERPRISES**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Public Enterprises: Concepts, characteristics, difference between public and private enterprises. Historical perspective of public sector in India.

Role in socio-economic development and relation of public enterprises. Multiple objectives of public enterprises. Clash and complementarity in objectives.

**UNIT-II**

Growth of Public Enterprises in India: Role of public sector financial institutions in the financing of public enterprises. Sources of funds of public enterprises. Debt and equity.

Problems of management of working capital. Management of inventory, credit and cash financing of working capital.

**UNIT-III**

**Pricing in Public Sector:** Basis and types of pricing policies, machinery of price fixation. Marginal cost and full cost pricing, Discriminatory pricing. Role of B.L.C. and P.

**Working of Public Enterprises in India** – Accountability of public enterprises. Control, audit, annual reports, consumer organization, public accountability.

#### **UNIT-IV**

**Efficiency and Performance Evaluation:** Profitability of public enterprises. Causes of poor financial performance of public sector in India. Performance budgeting.

Industrial relations and its importance. Industrial relations policy. Industrial disputes – causes, effects and machinery for settlement. Workers Participation in Management. Disinvestment in public enterprises – Rationale and scope.

#### **Suggested Readings:**

1. Narain Laxmi: Principles and Practice of Public Enterprises Management, Ajanta Publications, New Delhi, 1981.
2. Gupta K.P. (ed) Organisation and Management of Public Enterprises.
3. Govt. of India: Public Enterprise Survey.
4. Sinha K.K.: Economics of Public Enterprises.
5. R. Turvey: Economic Analysis of Public Enterprises.
6. V.V. Ramanathan: Structure of Public Enterprises in India.

**SEMESTER: III-VI****ECONOMICS (COMMON PAPERS)****PAPER-IX: COMPUTER APPLICATIONS FOR ECONOMISTS****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

Computer Organisation: simple model of a computer to illustrate how it executes algorithms. Data representation of integer, error detecting and correcting codes, real, binary, octal, hexadecimal, ASCII, BCD, EBCDIC.

**UNIT-II**

Algorithm developments; linear program analysis.

Flow chart, decision tables, fields, records and history of 'C', need for PDLC, description of different phases of PDLC, feature of programming languages (C), data types, control structures.

**UNIT-III**

Errors and types of errors, Measures of central, tendency, frequency distribution, correlation and regression tests of significance.

Vectors, matrices, file processing, searching and sorting algorithms, matching, summarizing.

**UNIT-IV**

Direct access, storage retrieval, operation on files, types of files and different file organisation techniques.

System security, simple I/O statements, documentation and storage estimation.

**Recommended Texts:**

1. Dr. K.S. Kahlon and Dr. Gurvinder Singh: Programming in C.
2. E. Balagurusami: Programming in ANSI C, Tata Mc Graw Hill, 1983.
3. Dijkstra, N.W.: A Short Introduction to the Art of Programming (Computer Society of India).
4. Rajaraman, V.P.: Computer Oriented Numerical Methods, Prentice Hall of India, New Delhi, 1983.
5. Schaum Series: Programming in C, Tata Mc Graw Hill Publishing Co. Ltd., New Delhi, 2000.

**SEMESTER: III-VI****ECONOMICS (COMMON PAPERS)****PAPER-X: INTRODUCTION TO ECONOMETRICS****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters/Examiners:-**

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

**UNIT-I**

**Basic Estimation Theory:** Definition and scope of econometrics. Relationship of econometrics with economic statistics and mathematical statistics, Different stages involved in an econometric research programme, Specifications and estimation of an econometric model, Sources and assumptions of disturbance terms.

Evaluation of the parameter estimates. Random variables and probability distribution. Basic facts about estimation. Unbiasedness, efficiency and consistency. Maximum likelihood estimation.

**UNIT-II**

**Testing of Hypothesis:** Basic concept. Type I and II errors. Simple and composite hypotheses. Z, t,  $\chi^2$  and F tests.

**Single Equation Models:** Estimation and Problems: Simple linear regression model and the general linear model (in matrix form), testing the significance of individual coefficients and groups of coefficients through ANOVA-technique, Chow's test.

**UNIT-III**

Problems of heteroscedasticity, autocorrection and multicollinearity – their nature, consequences, detection and remedial measures.

Dummy variables: Concept and various uses. The dummy variable trap, Interpretation of slope and intercept Dummies.

#### **UNIT-IV**

Distributed Lagged models. Partial adjustment model, Koyck transformation. Statistical estimation of simple demand and supply functions.

Concept of production functions; statistical estimation of Cobb-Douglas and CES, production functions; some macroeconomic functions like consumption function, investment functions and the demand for money function.

#### **Recommended Texts:**

1. Hogg, R.V.: Introduction to Mathematical Statistics, 3<sup>rd</sup> ed. Macmillan, New York, 1970.
2. Hogg, R.V. & E.A. Tanis: Probability & Statistical Inference, Pearson Education, Asia, 6<sup>th</sup> Ed., 2001.
3. Kendall, M.G. and A. Stuart (eds): Advanced Theory of Statistics Volumes I and II, Griffin & Co., London, 1976.
4. Johnston, J.: Econometric Methods, 20 McGraw Hill, New York, 1972.
5. Kmenta J: Elements of Econometrics, Macmillan, New York, 1971.
6. D.N. Gujarati: Basic Econometrics, 4<sup>th</sup> Ed., Tata McGraw Hill, 2004.
7. Koutsoyiannis, A: Theory of Econometric, ELBS with Macmillan, Hong Kong, 1984.

**SEMESTER-III  
PHILOSOPHY  
HISTORY OF PHILOSOPHY**

**Time: 3 Hours**

**Max. Marks: 100**

**Note: I. Ten questions are to be set in all.  
II. Five questions are to be attempted in all.  
III. All questions carry equal Marks.**

**Section-I**

**GREEK PHILOSOPHY:** An introduction to the Metaphysical doctrines of the Pre-Socratic thinkers, Plato and Aristotle.

**Section-II**

**RATIONALIST PHILOSOPHERS:** Metaphysical and Epistemological Theories of Descartes, Spinoza and Leibnitz

**Section-III**

**EMPIRICIST PHILOSOPHERS:** Epistemological Theories of Locke, Berkeley and Hume.

**Recommended Readings:**

1. Collins, James, *Interpreting of Modern Philosophy*, Princeton University Press, Princeton, 1973.
2. Fuller, B.A.G., *A History of Philosophy*, Oxford, New Delhi, 1989.
3. Folckenberg, Richard, *History of Modern Philosophy; from Nicolas of Cosa to the present time*, Progressive, Calcutta, 1977.
4. Russell, Bertrand, *History of Philosophy*.
5. Sahakian, William, *History of Philosophy*, Barnes, New York, 1970.
6. Thilly, Frank, *A History of Philosophy*, Central Book Depot, Allahabad, 1965.

**SEMESTER-IV  
PHILOSOPHY**

**SPECIAL STUDY OF ANY ONE OF THE FOLLOWING: SHANKARA, GURU  
NANAK, AUROBINDO, MAHATMA GANDHI.**

**Time: 3 Hours**

**Max. Marks: 100**

**Opt. Note: Ten questions are to be set. Any five questions are to be attempted.**

**(i) SHANKARACHARYA:**

Advaitavada, Mayavada, Brahman, Atman, View of Reality, Avidya, Adhyasa and Nature of World.

**(ii) GURU NANAK:**

Metaphysics: Mulmantra, Cosmology, Ontology; Ethics: Supreme Ideal, Jivan Mukti, Path of Spiritual Vision and Five Khands.

**(iii) SRI AUROBINDO:**

Nature of Man: Concept of Super Mind, Man in relation to Mind; Spiritual Evolution: The Problem of Matter, Life and Mind; Nature of the World and Reality; Spiritual Monism.

**(iv) MAHATMA GANDHI:**

Concept of Truth, Non-Violence, Satyagraha, Antyodaya, Sarb Dharam Sambhave, Ends and Means, Trusteeship and Swaraj, Gandhi on Gita (Chapters 3 to 5).

**Recommended Readings:**

1. Gupta, S.N. Das, *History of Indian Philosophy*, Vol. I, Kitab Mahal, Allahabad, 1969.
2. Mahadevan, T.M.P., *Contemporary Indian Philosophy*, Sterling, New Delhi, 1985.
3. -----, *The Philosophy of Advaita with Special reference to Bharatrihari-*
4. Mcleod, W.H., *Guru Nanak and the Sikh Religion*, Oxford University, Delhi, 1976.
5. Prabhu, R.K. and U.R.R., *The Mind of Mahatma Gandhi*, Navajivan Publishing House, Ahmedabad, 1969.
6. Ramachandran, G. & T.K., Mahadeva (Ed.), *Mahatma Gandhi: His Relevance to Our Times*
7. Sher Singh, *Philosophy of Sikhism*, Shiromani Gurdwara Parbandhak Committee, Amritsar, 1986.
8. Sri Aurobindo, *The Life Divine*, Sri Aurobindo Ashram, Pondicherry, 1982.
9. Talib, G.S., *Guru Nanak: Personality and Vision*, Gurdas Kapur, Delhi, 1969.

**SEMESTER-V**

**PHILOSOPHY**

**WESTERN METAPHYSICS**

**Time: 3 Hours**

**Max. Marks: 100**

- Note:**
1. Ten questions are to be set in all.
  2. Five questions are to be attempted in all.
  3. All questions carry equal marks.

1. Nature of Substance: Greek View, Descartes, Spinoza, Leibnitz
  - a. Interactionism of Descartes
  - b. Parallelism of Spinoza
  - c. Pre-established Harmony of Leibnitz.
2. Theories of the Relationship between Universals and Particulars: Realism and Nominalism (St. Augustine).
3. Free-Will and Determinism Controversy:
  - a. Indeterminism
  - b. Determinism
  - c. Self-Determinism
4. Nature of Self
5. Proofs for the Existence of God: Ontological, Cosmological, Teleological and Moral Arguments.
6. Theory of Causation; Synthetic a-priori judgement of Kant

**Recommended Readings**

1. Galloway, G., *Philosophy of Religion*, T&T Clark, Edinburgh, 1960.
2. Hick, John, *Philosophy of Religion*, Prentice Hall, New Delhi, 1978.
3. Hacking, Willian Ernest, *Types of Philosophy*, Charles Scribner, New York, 1920.
4. Thilly, Frank, *A History of Philosophy*, Central Book Depot, Allahbad, 1965.
3. Titus, H.H., *Living Issues in Philosophy*, Eurasia, New Delhi, 1968.

**SEMESTER-VI  
PHILOSOPHY**

**SPECIAL STUDY OF ANY OF THE FOLLOWING WESTERN PHILOSOPHERS:  
PLATO, KANT, AND SARTRE**

**Time: 3 Hours**

**Max. Marks: 100**

- Note:**
1. Ten questions are to be set in all.
  2. Five questions are to be attempted in all.
  3. All questions carry equal marks.

**PLATO**

1. Opinion and Knowledge
2. Theory of Ideas/ Universals/ Forms
3. Nature of Soul
4. Theory of Justice
5. Theory of State
6. Theory of Education

**KANT**

1. Noumena, Phenomena; Space and Time as forms of Intuition.
2. Forms of Judgments
3. Categories and Understanding
4. Synthetic a-priori Judgments
5. Constitutive and Regulative Reason
6. Antinomies

**SARTRE**

1. Existentialism as Philosophy
2. Being-in-Itself and Being-for-Itself
3. Authenticity and Bad Faith
4. Human Freedom
5. Consciousness and Temporality
6. Facticity

**Recommended Readings:**

1. Das, Rosvitary, *Kant's Critique of Pure Reason*, Progressive Publishers, Calcutta, 1977.
2. Plato's Dialogues.
3. Sartre, Jeav Paul, *Being and Nothing; A Phenomenological Essay an Ontology*, Washington Square, New York, 1972.
4. Waruck, Mary, *Existentialism*, Oxford University, London, 1970.
5. W.T.Stace, *Critical History of Greek Philosophy*, Macmillon.

**SEMESTER-III**

**SANSKRIT**

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1x10 = 10

**SEMESTER-IV**

**SANSKRIT**

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1x10 = 10 v d

**SEMESTER-V**

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nōdj 5 ea 'kq) foHkFDr iNn tk; A  
5x2 = 10

4 dkjdka ds uke nōdj 2 dkjdka dks I knkgj.k Li "V djus ds fy, dgk tk; A  
2x5 = 10

¼[k½ y?kfl ) kUrdkēph ds L=h iR; ; idj.k ea I s 10 ey 'kCnka ds I kFk L=hi R; ;  
nōdj 5 ds L=hi R; ; kUr 'kCn fy[kok; s tk; A  
5x2 = 10

y?kfl ) kUrdkēph ds L=h iR; ; idj.k ea I s 10 L=hi R; ; kUr 'kCn nōdj 5 ds  
ey 'kCn rFkk iR; ; iNn tk; A  
5x2 = 10

III i kB; Øe ea fu/kkfjr fo"k; ka ea I s 4 fo"k; nōdj , d ij I Ḍdr ea fucl/k fy[kus ds  
fy; s dgk tk; A  
1x20 = 20

**SEMESTER-VI**

**SANSKRIT**

mi fu"kn~ rFk ofnd I kfgR;

I e; &3 ?k. Vs  
i kB; Øe &

i wkkd&100

¼d½ ¼[k.M v½ & mi fu"kn~ I kfgR; fuEu i kB; Øe fu/kkġr gS &  
(i) dBks fu"kn~ & vuþkn , oa 0; k[; k ¼6 ea I s 4 'yk d½

4x10 = 40

(ii) dBks fu"kn~ I s I Ec) iz u ¼2 ea I s 1 mġkj ½

20

¼[k½ ¼[k.M b½ & ofnd I kfgR; dk bfrgkl fuEu i kB; Øe fu/kkġr gS &

40

onkx & ¼f'k{kk] dYi] 0; kdj .k] fu#Dr] T; kfr"kJ NU nA½ & I keku; i fjp; mi fu"kn~  
I kfgR; & fo"k; oLrq ¼dBks fu"kn~ dks NkM d j vl; i æq[k mi fu"knka dk I keku;  
i fjp; A½

iz ui = fuekZk funġk &

I dBks fu"kn~ I s 6 el= ndj 4 dk vuþkn , oa 0; k[; k i N h tk; A

4x10 = 40

II dBks fu"kn~ I s I Ecfl/kr 2 iz u ndj , d dk mġkj i N k tk; A

1x20 = 20

III ofnd I kfgR; dk bfrgkl \* ds fu/kkġr i kB; Øe I s 4 iz u ndj 2 dk mġkj i N k  
tk; A

2x20 = 40

**Books Recommended for Study**

1. Sanskrit Drama : A.B. Keith
2. Classical Sanskrit Literature : A.B. Keith
3. संस्कृत साहित्य की रूपरेखा : चन्द्रशेखर पाण्डेय

**SEMESTER–III****ENGLISH****HISTORY OF ENGLISH LITERATURE****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setter and Distribution of Marks:**

History of English Literature carrying 100 marks will consist of five questions, including the short answer questions. Candidates will have to attempt all the five questions. Each question will carry 20 marks.

The short answer questions will comprise 12 parts and the candidates are required to attempt any five, selecting at least one from each period. The remaining four questions, having internal choice will be from the four periods of English Literary history i.e. the Renaissance, the Neo–classical, the Romantic and the Victorian.

**1. The Renaissance 1500–1660:**

The Sub–periods: Elizabethan, Jacobean and Commonwealth; General Political, Economic, Social and Religious background; the Renaissance–humanism; the Reformation, Puritanism–Literary background; The Elizabethan theatre the rise of drama, the mysteries and the miracles. The moralities, the interludes; classical influences; the first experiments– the University wits, revenge, tragedy, romantic comedy, history play, tragicomedy; sonnet and lyric in the sixteenth century; the long poem; allegory; the metaphysical;

**2. The Neo–Classical Period 1660–1798:**

The Sub–periods; the Restoration, Augustan, age; the restoration of monarchy and the Restoration of theatre in England. Restoration comedy, comedy of manners; the mock heroic; satire in prose; Battle of the Books; the periodical essays, the transition poets; the graveyard poets; the rise of the English novel; the novel of the sentiment the ‘Gothic novel.

**3. The Romantic Period 1798–1832:**

The Romantic Movement; concepts of nature, reason and imagination, the writing of Lyrical Ballads; reactions to French Revolution, enthusiasm and revolution, reactions to the eighteenth century) literary tradition; the Renaissance wonder; me return to nature; idealism; introversion, romantic irony the popularity of the lyric and ode; the decline of drama; the historical novel; women's writings.

**4. The Victorian Period 1832–1900:**

The Victorian temper; the establishment of the Empire theory of evolution; vitalism; science and religion; faith and doubt; the oxford Movement; Factory Acts; Urbanization; Laissez faire; the utilitarian; Chartism; the belief in progress; the growth of socialist movement; the working class; the Suffragette Movement; decadence; realism; naturalism; Pre-Raphaelitism.

**Books Recommended:**

1. Abrams, M.H., A Glossary of Literary Terms. Wadsworth Cengage, 8<sup>th</sup> Ed. 2008.
2. Evans I., A Short History of English Literature. ELBS, Penguin Books, 1970.

**SEMESTER-IV**

**ENGLISH**

**ENGLISH POETRY**

**Time: 3 Hours**

**Max. Marks: 100**

- Note:**
- (i) The candidates will be required to answer five questions including Q.No.1 which will be compulsory.
  - (ii) The first question will be a reference question with lines/passages from poetry. The candidates will be required to attempt five out of twelve (one on each poet prescribed) passages.
  - (iii) There may be questions on comparative study of two poems with identical themes, derivation of the characteristics of a poet on the basis of the poems prescribed from study and development of theme; imagery and style.

**English Poetry:** A study of the twelve poets through the following selections:

1. **W.B. Yeat's:**  
Adam's Curse  
September-1913.
2. **William Shakespeare:**  
Shall I compare thee to a Summer's day ?  
When in disgrace with Fortune and me eyes.  
When to the Sessions of Sweet Silent thought.  
When in the Chronicle of wasted time.  
Let me not to the marriage of true minds.
3. **John Donne:**  
The Good-Morrow  
Sweetest love I do not go  
A Valedication : Forbidding Mourning.  
Death be not proud
4. **John Milton:**  
On His Twenty Fourth Birthday  
On his Blindness
5. **John Dryden:**  
To the University of Oxford, 1674.  
To the Memory of Mr. Oldham
6. **Alexander Pope:**  
From Winds of Forest  
From An Essay on man

7. **S.T.Coleridge:**  
Frost at Midnight  
Kubla Khan
8. **William Wordsworth:**  
My heart leaps up  
She dwelt among the untrodden ways  
A slumber did my spirit steal.  
The world is too much with us.  
The Solitary Reaper.
9. **George Gordon Lord Byron :**  
She walks in beauty.  
My days of love are over.  
So will go no more a roving.
10. **Alfred, Lord Tennyson :**  
Tithonus.  
Songs from "The Princess"  
Break, Break, Break.  
Crossing the Bar.
11. **Robert Browning :**  
The Lost Mistress.  
Home Thoughts, From Anroad.  
Two in the Compagna.  
My Last Duchess.
12. **W.M. Auden:**  
The Unknown Citizen  
Lay Your Sleepy Head

**SEMESTER-V****ENGLISH****ENGLISH NOVEL****Time: 3 Hours****Max. Marks: 100****Instructions for the paper setter and distribution of marks:**

**Nine** essay type questions (**three questions on each novel**) will be set. The examinees will be required to answer any **five** choosing at least one question on each novel. Each question will carry **20** marks.

**Course Contents:**

1. The Mayor of Caster Bridge by Thomas Hardy
2. A Farewell to Arms by Ernest Hemmingway
3. The Shadow lines by Amitav Ghosh

**SEMESTER-VI****ENGLISH****ENGLISH DRAMA****Time: 3 Hours****Max. Marks: 100****Instructions for the paper setter and distribution of marks:**

**Nine** essay type questions (**three questions on each play**) will be set. The examinees will be required to answer any **five** choosing at least one question on each play. Each question will carry 20 marks.

**(20x5=100 Marks)****Course Contents:**William Shakespeare: *Macbeth*John Osborne: *Look Back in Anger*John Galsworthy: *Justice*

**SEMESTER-III**

**HINDI**

**आधुनिक काव्य तथा काव्य नाटक**

समय: 3 घण्टे

कुल अंक: 100

ध्यातव्य :-

- क. प्रश्नपत्र तीन खण्डों में विभक्त हैं। प्रथम खण्ड में से 10 प्रश्न पूछे जायेंगे। इन प्रश्नों का उत्तर अधिकतम पचास शब्दों/पांच पंक्तियों में देना होगा। सभी प्रश्न अनिवार्य होंगे। प्रत्येक प्रश्न 2 अंकों का है तथा कुल अंक 20 होंगे।
- ख. द्वितीय खण्ड में 12 प्रश्न पूछे जाएंगे जिनमें से आठ प्रश्नों का उत्तर देना अनिवार्य होगा। इन प्रश्नों का उत्तर अधिकतम दो पृष्ठों अथवा 250 शब्दों की सीमा का होगा। प्रत्येक प्रश्न 6 अंकों का होगा। कुल अंक 48 होंगे।
- ग. तृतीय खण्ड में 4 प्रश्न पूछे जाएंगे जिनमें से दो प्रश्नों का उत्तर देना अनिवार्य होगा। प्रत्येक प्रश्न का उत्तर अधिकतम पांच पृष्ठों अथवा 1000 शब्दों तक सीमित होगा। प्रत्येक प्रश्न 16 अंकों का होगा। कुल अंक 32 होंगे।

निर्धारित पुस्तकें:

1. सर्वेश्वरदयाल सक्सेना, प्रतिनिधि कविताएँ, राजकमल प्रकाशन, नई दिल्ली।

अध्ययन के लिए चयनित कविताएं:

1. अक्सर एक व्यथा, एक सूनी नाव, स्मृति, रसोई, पिछड़ा आदमी, अपनी बिटिया के लिए दो कविताएं, काठमाण्डू में भोर, तुम्हारे लिए, लू शुन और चिड़िया, धीरे-धीरे, अन्त में।
2. एक कंट विषपायी, दुष्यंत कुमार, लोकभारती प्रकाशन, इलाहाबाद।

अध्ययन के लिए निर्धारित परिक्षेत्र:

निर्धारित प्रश्न:

1. सर्वेश्वर दयाल सक्सेना : व्यक्तित्व और कृतित्व  
सर्वेश्वर दयाल सक्सेना के काव्य की साहित्यिक विशेषताएं  
सर्वेश्वर दयाल सक्सेना के काव्य में मध्यवर्गीय चेतना  
नई कविता के संदर्भ में सर्वेश्वरदयाल सक्सेना का काव्य  
सर्वेश्वरदयाल सक्सेना की काव्य भाषा
2. दुष्यंत कुमार : व्यक्तित्व और कृतित्व  
एक कंठ विषपायी में वर्णित पौराणिकता और आधुनिकता  
एक कंठ विषपायी : शीर्षक की सार्थकता  
एक कंठ विषपायी की मूल संवेदना  
एक कंठ विषपायी की भाषा संरचना

दृष्टव्य:

- प्रथम खण्ड में सम्बन्धित पुस्तकों, लेखकों तथा युग की जानकारी सम्बन्धी सामान्य प्रश्न होंगे।
- द्वितीय खण्ड में सप्रसंग व्याख्याएं तथा टिप्पणियों से संबंधित प्रश्न होंगे। ऐसे छः प्रश्न सर्वेश्वरदयाल सक्सेना की कविताओं से तथा छः प्रश्न कनुप्रिया में से होंगे।
- तृतीय खण्ड में दो-दो प्रश्न प्रत्येक पुस्तक, पुस्तक के लेखक तथा उनके युग तथा विधा-विशेष के परिप्रेक्ष्य से होंगे।

**SEMESTER-IV**

**HINDI**

**गद्य-साहित्य: निबंध संस्मरण तथा अनुवाद**

समय: 3 घण्टे

कुल अंक: 100

**ध्यातव्य:-**

- क. प्रश्नपत्र तीन खण्डों में विभक्त है। प्रथम खण्ड में से 10 प्रश्न पूछे जायेंगे। इन प्रश्नों का उत्तर अधिकतम पचास शब्दों/पाँच पंक्तियों में देना होगा। सभी प्रश्न अनिवार्य होंगे। प्रत्येक प्रश्न 2 अंकों का है तथा कुल अंक 20 होंगे।
- ख. द्वितीय खण्ड में 12 प्रश्न पूछे जाएंगे जिनमें से आठ प्रश्नों का उत्तर देना अनिवार्य होगा। इन प्रश्नों का उत्तर अधिकतम दो पृष्ठों अथवा 250 शब्दों की सीमा का होगा। प्रत्येक प्रश्न 6 अंकों का होगा। कुल अंक 48 होंगे।
- ग. तृतीय खण्ड में 4 प्रश्न पूछे जाएंगे जिनमें से दो प्रश्नों का उत्तर देना अनिवार्य होगा। प्रत्येक प्रश्न का उत्तर अधिकतम पाँच पृष्ठों अथवा 1000 शब्दों तक सीमित होगा। प्रत्येक प्रश्न 16 अंकों का होगा। कुल अंक 32 होंगे।

**निर्धारित पुस्तकें:**

अध्यापक पूर्ण सिंह के निबंध, सम्पादक, प्रो. हरमहेन्द्र सिंह बेदी एवं डॉ. सुधा जितेन्द्र, निर्मल पब्लिकेशंस, दिल्ली।  
महादेवी वर्मा का गद्य साहित्य , संपादक- प्रो. डॉ. सुधा जितेन्द्र , पब्लिकेशन ब्यूरो , पंजाबी यूनिवर्सिटी , पटियाला।  
केवल पाँच संस्मरण- सूर्यकांत त्रिपाठी निराला, सुभद्राकुमारी चौहान , चीनी फेरी वाला , भक्तिन , घीसा  
विभिन्न ज्ञानानुशासनों, व्यापार, वाणिज्य, चिकित्सा, शरीर विज्ञानरुद्ध से सम्बन्धित पारिभाषिक शब्दावली। कुल 100 शब्द पाठ्यक्रम में से होंगे जिनकी सूची संलग्न है।

**नोट:**

प्रथम खण्ड में निर्धारित ज्ञानानुशासनों से 10 शब्दों का अंग्रेजी से हिन्दी और दस का हिन्दी से अंग्रेजी में अनुवाद करना अपेक्षित होगा। प्रत्येक ज्ञानानुशासन की शब्द संख्या बराबर होगी।

द्वितीय खण्ड में सात प्रश्न निबंध से होंगे उनमें से पाँच का उत्तर देना अनिवार्य होगा और शेष पाँच प्रश्न पथ के साथी से होंगे। उनमें से तीन प्रश्न करने अनिवार्य होंगे। प्रश्न व्याख्याओं तथा टिप्पणियों के रूप में होंगे।

तृतीय खण्ड में दो प्रश्न निबंधों से तथा दो प्रश्न संस्मरणों से होंगे। इनमें निबंधकार तथा लेखिका के साहित्यिक परिचय ; विशेष विधाओं के संदर्भ सम्बन्धी सामान्य प्रश्न होंगे।

- अनुवाद शब्दावली के लिए तत्सम्बन्धी पुस्तकें; पेनीसीआरु तथा बीकनरुद्ध निर्धारित है। लेखक एच.एम.लाल सूद, दीपक पब्लिशर्स, जालंधर।

*B.A. (HONOURS) 12+3 SYSTEM OF EDUCATION (Semester System) (Session 2018-19)*  
*(Faculty of Languages)*

**पारिभाषिक शब्दावली**

Acceptance	Admissible
Apparatus	Auxilliary
Breakage	Competitor
Compliance	Comptroller
Defacto	Dereliction
Discrepancy	Exchequer
Ex-Officio	Facilitate
Gadget	Honorarium
Imbalance	Imprest
Jeopardize	Licence
Mercantile	Omission
Sanction	Sponsor
Prima Facie	

अनुमोदन निरसन	अवस्फीति अधिकर्म	बकाया
औपनिवेशिक	संकलित करना	जब्त होना या करना मसौदा
सुवाह्य	प्रदूषण	आसन्न
आचरण-संहिता	कोष, निधि कार्यविधि	भेजना, रवाना करना
संवेदन प्रेरणा	जीविका	बीजक

Agile	Exposure	
Anaemia	Hepatitis	
Anatom	Herb	
Aquatic	Irritant	
Biesct	Immunize	
Borax	Jaundice	
Calorie	Lancet	
Deoderize	Listless	
Diabetes	Molar	
Disinfect	Monomania	
Etiology	Nucleus	
Restive	Pyorrhoea	
श्व्वास-प्रक्रिया	Quack	
प्रतिरोधी-शक्ति	अंग, अवयव	पागलपन, उन्माद
शुद्ध-विशुद्धता	संतान	सहज ज्ञान, सहजबोध
रक्तवाहिनी	नेत्र-विषयक	अतःप्रजनन
पशु-चिकित्सक	खनिज	संवेग
पीड़ाहारी मरहम	कुपोषण	पक्षालक
अनुभूति	शरीर-विज्ञान	श्व्वासनली शोध
अनिद्रा रोग	अविलेय	इन्द्रिय बोध
देह-गठन	दृष्टि पटल	अजीर्णता
	भय, भांति	

SEMESTER-V

HINDI

कुल अंक 100

प्रश्नपत्र में 10 प्रश्न होंगे।

कुल अंक 100

प्रश्नपत्र में 10 प्रश्न होंगे।

- क. प्रश्नपत्र तीन खण्डों में विभक्त है। प्रथम खण्ड में से 10 प्रश्न पूछे जायेंगे। इन प्रश्नों का उत्तर अधिकतम पचास शब्दों/पांच पंक्तियों में देना होगा। सभी प्रश्न अनिवार्य होंगे। प्रत्येक प्रश्न 2 अंकों का है तथा कुल अंक 20 होंगे।
- ख. द्वितीय खण्ड में 12 प्रश्न पूछे जाएंगे जिनमें से आठ प्रश्नों का उत्तर देना अनिवार्य होगा। इन प्रश्नों का उत्तर अधिकतम दो पृष्ठों अथवा 250 शब्दों की सीमा का होगा। प्रत्येक प्रश्न 6 अंकों का होगा। कुल अंक 48 होंगे।
- ग. तृतीय खण्ड में 4 प्रश्न पूछे जाएंगे जिनमें से दो प्रश्नों का उत्तर देना अनिवार्य होगा। प्रत्येक प्रश्न का उत्तर अधिकतम पांच पृष्ठों अथवा 1000 शब्दों तक सीमित होगा। प्रत्येक प्रश्न 16 अंकों का होगा। कुल अंक 32 होंगे।

सामान्य साहित्यिक परिचय

- उत्तर कांड (पहले तीस पद्य) : गीता प्रेस, गोरखपुर।
- रसखान रचनावली (पहले तीस पद्य), वाणी प्रकाशन, दिल्ली।
- पंजाब की हिन्दी कविता (आधुनिक) सम्पादक मोहन सपरा, प्रकाशक : प्रैस एवं पब्लिकेशन विभाग, गुरु नानक देव यूनिवर्सिटी, अमृतसर, कवि क्रम 13, 17.

तुलसी, रसखान तथा निर्धारित दो कवियों का सामान्य साहित्यिक परिचय : व्यक्तित्व/कृतित्व रखा गया है।

प्रश्नपत्र में 10 प्रश्न होंगे।

- प्रथम खण्ड में निर्धारित पाठ्यक्रम में से सामान्य प्रश्न पूछे जाएंगे।
- दूसरे खण्ड में 6 प्रश्न सप्रसंग व्याख्याओं के होंगे जिनमें से चार प्रश्न अनिवार्य हैं। निर्धारित पाठ्यक्रम में से 6 प्रश्नों में से कम से कम चार प्रश्नों का उत्तर देना अनिवार्य होगा।
- तृतीय खण्ड में तुलसी, रसखान तथा निर्धारित दो कवियों पर सामान्य प्रश्न होंगे।

**SEMESTER-VI**

**HINDI**

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- क. प्रश्नपत्र तीन खण्डों में विभक्त है। प्रथम खण्ड में से 10 प्रश्न पूछे जायेंगे। इन प्रश्नों का उत्तर अधिकतम पचास शब्दों/पांच पंक्तियों में देना होगा। सभी प्रश्न अनिवार्य होंगे। प्रत्येक प्रश्न 2 अंकों का है तथा कुल अंक 20 होंगे।
- ख. द्वितीय खण्ड में 12 प्रश्न पूछे जाएंगे जिनमें से आठ प्रश्नों का उत्तर देना अनिवार्य होगा। इन प्रश्नों का उत्तर अधिकतम दो पृष्ठों अथवा 250 शब्दों की सीमा का होगा। प्रत्येक प्रश्न 6 अंकों का होगा। कुल अंक 48 होंगे।
- ग. तृतीय खण्ड में 4 प्रश्न पूछे जाएंगे जिनमें से दो प्रश्नों का उत्तर देना अनिवार्य होगा। प्रत्येक प्रश्न का उत्तर अधिकतम पांच पृष्ठों अथवा 1000 शब्दों तक सीमित होगा। प्रत्येक प्रश्न 16 अंकों का होगा। कुल अंक 32 होंगे।

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काव्य सिद्धान्तों/सम्प्रदायों का सामान्य परिचय।  
शब्द शक्तियों : अमिधा, लक्षणा तथा व्यंजना के प्रमुख भेदोपभेद सहित परिचय।  
बिम्ब :: स्वरूप और भेद  
प्रतीक : अर्थ एवं भेद

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- हिन्दी : संपर्क भाषा , राजभाषा और राष्ट्रभाषा के संदर्भ में (राजभाषा के रूप में स्वीकृति तथा समस्याएं/सीमाएं)
- पत्रलेखन

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- प्रथम खण्ड में 'क' और 'ख' भाग से पांच-पांच सामान्य प्रश्न पूछे जाएंगे।
- द्वितीय खण्ड में 'क' और 'ख' के भाग के छः-छः प्रश्न पूछे जाएंगे जिनमें से चार-चार प्रश्नों का उत्तर देना अनिवार्य होगा।
- तीसरे खण्ड में 'क' और 'ख' भाग से दो-दो प्रश्न पूछे जाएंगे जिनमें से एक-एक प्रश्न का उत्तर देना अनिवार्य होगा।

### SEMESTER-III

#### PUNJABI

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 100

ਨੋਟ: ਪ੍ਰਸ਼ਨ ਨਿਮਨ-ਲਿਖਤ ਅਨੁਸਾਰ ਤਿੰਨ ਭਾਗਾਂ ਵਿਚ ਪੁੱਛੇ ਜਾਣਗੇ।

**ਭਾਗ-ਏ:** ਇਸ ਭਾਗ ਵਿਚ 10 ਸੰਖੇਪ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਬਹੁਤ ਸੰਖੇਪ ਹੋਵੇਗਾ। ਉੱਤਰ 5 ਸਤਰਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਸਾਰੇ ਸਵਾਲ ਹੱਲ ਕਰਨੇ ਜ਼ਰੂਰੀ ਹਨ। ਹਰੇਕ ਸਵਾਲ ਦੇ 2 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 20 ਅੰਕ ਹਨ।

**ਭਾਗ-ਬੀ :** ਇਸ ਭਾਗ ਵਿਚ 12 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ । ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 8 ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹਨ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ 2 ਪੰਨਿਆਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 6 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 48 ਅੰਕ ਹਨ।

**ਭਾਗ-ਸੀ:** ਇਸ ਭਾਗ ਵਿਚ ਲੇਖ-ਨੁਮਾ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਹਰੇਕ ਦਾ ਉੱਤਰ 5 ਪੰਨਿਆਂ ਵਿਚ ਦਿੱਤਾ ਜਾਏਗਾ। ਪ੍ਰੀਖਿਅਕ ਵਲੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਦੋ ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 32 ਅੰਕ ਹਨ।

#### ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

1. (ੳ) ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਕਾਲ ਨਿਰਧਾਰਣ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ।  
(ਅ) ਵਿਚਾਰਧਾਰਕ ਪ੍ਰਵਿਰਤੀਆਂ।
2. (ੳ) ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਾਵਿ ਦੇ ਵਿਕਾਸ ਪੜਾਅ ਅਤੇ ਨਵੀਨ ਪ੍ਰਵਿਰਤੀਆਂ।  
(ਅ) ਪੰਜਾਬੀ ਗਲਪ (ਨਿੱਕੀ ਕਹਾਣੀ ਤੇ ਨਾਵਲ) ਦੇ ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਨਵੀਨ ਪ੍ਰਵਿਰਤੀਆਂ।  
(ੲ) ਪੰਜਾਬੀ ਨਾਟਕ ਤੇ ਰੰਗਮੰਚ ਦੇ ਵਿਕਾਸ ਪੜਾਅ ਅਤੇ ਨਵੀਨ ਪ੍ਰਵਿਰਤੀਆਂ।

**SEMESTER-IV**

**PUNJABI**

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ:100

ਨੋਟ: ਪ੍ਰਸ਼ਨ ਨਿਮਨ-ਲਿਖਤ ਅਨੁਸਾਰ ਤਿੰਨ ਭਾਗਾਂ ਵਿਚ ਪੁੱਛੇ ਜਾਣਗੇ।

**ਭਾਗ-ਏ:** ਇਸ ਭਾਗ ਵਿਚ 10 ਸੰਖੇਪ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਬਹੁਤ ਸੰਖੇਪ ਹੋਵੇਗਾ। ਉੱਤਰ 5 ਸਤਰਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਸਾਰੇ ਸਵਾਲ ਹੱਲ ਕਰਨੇ ਜ਼ਰੂਰੀ ਹਨ। ਹਰੇਕ ਸਵਾਲ ਦੇ 2 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 20 ਅੰਕ ਹਨ।

**ਭਾਗ-ਬੀ:** ਇਸ ਭਾਗ ਵਿਚ 12 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 8 ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹਨ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ 2 ਪੰਨਿਆਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 6 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 48 ਅੰਕ ਹਨ।

**ਭਾਗ-ਸੀ:** ਇਸ ਭਾਗ ਵਿਚ ਲੇਖ-ਨੁਮਾ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਹਰੇਕ ਦਾ ਉੱਤਰ 5 ਪੰਨਿਆਂ ਵਿਚ ਦਿੱਤਾ ਜਾਏਗਾ। ਪ੍ਰੀਖਿਅਕ ਵਲੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਦੋ ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 32 ਅੰਕ ਹਨ।

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

1. (ੳ) ਸੂਫੀਮਤ : ਪ੍ਰਕਿਰਤੀ, ਪਰਿਭਾਸ਼ਾ ਤੇ ਵਿਕਾਸ ।  
(ਅ) ਕਿਸੇ ਇਕ ਪੰਜਾਬੀ ਸੂਫੀ ਕਵੀ ਦੀ ਚੋਣਵੀਂ ਰਚਨਾ ਦਾ ਅਧਿਐਨ : **ਕਾਫੀਆਂ** ਸ਼ਾਹ ਹੁਸੈਨ ।
2. (ੳ) ਕਿੱਸਾ ਕਾਵਿ : ਪ੍ਰਕਿਰਤੀ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਤੇ ਵਿਕਾਸ ।  
(ਅ) ਕਿਸੇ ਇਕ ਕਿੱਸੇ ਦਾ ਅਧਿਐਨ : **ਮਿਰਜ਼ਾ ਸਾਹਿਬਾਂ : ਪੀਲੂ** (ਸੰਪਾ. ਪਿਆਰ ਸਿੰਘ ਅਤੇ ਮਾਨ ਸਿੰਘ ਅੰਮ੍ਰਿਤ) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ ।
3. (ੳ) ਵਾਰਤਕ : ਵਾਰਤਕ ਦੇ ਤੱਤ, ਸ਼ੈਲੀ, ਵਿਕਾਸ ਅਤੇ ਵਾਰਤਕ ਦੇ ਰੂਪ ।  
(ਅ) ਪੁਰਾਤਨ ਅਤੇ ਨਵੀਨ ਪੰਜਾਬੀ ਵਾਰਤਕ ਵੰਨਗੀਆਂ ਦਾ ਇਕ ਚੋਣਵਾਂ ਸੰਗ੍ਰਹਿ **ਵਾਰਤਕੀ** (ਸੰਪਾ. ਡਾ. ਅਮਰਜੀਤ ਸਿੰਘ ਕਾਂਗ, ਡਾ. ਤੇਜਵੰਤ ਸਿੰਘ ਮਾਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ ।

**SEMESTER-V**

**PUNJABI**

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ-100

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰਜ਼ ਅਤੇ ਪ੍ਰੀਖਿਅਕਾਂ ਲਈ ਹਦਾਇਤਾਂ**

ਨੋਟ: ਪ੍ਰਸ਼ਨ ਨਿਮਨ-ਲਿਖਤ ਅਨੁਸਾਰ ਤਿੰਨ ਭਾਗਾਂ ਵਿਚ ਪੁੱਛੇ ਜਾਣਗੇ।

**ਭਾਗ-ਏ :**

ਇਸ ਭਾਗ ਵਿਚ 10 ਸੰਖੇਪ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਬਹੁਤ ਸੰਖੇਪ ਹੋਵੇਗਾ। ਉੱਤਰ 5 ਸਤਰਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਸਾਰੇ ਸਵਾਲ ਹੱਲ ਕਰਨੇ ਜ਼ਰੂਰੀ ਹਨ। ਹਰੇਕ ਸਵਾਲ ਦੇ 2 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ ਅੰਕ 20 ਹਨ।

**ਭਾਗ-ਬੀ :**

ਇਸ ਭਾਗ ਵਿਚ 12 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 8 ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹਨ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ 2 ਪੰਨਿਆਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 6 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 48 ਅੰਕ ਹਨ।

**ਭਾਗ-ਸੀ :**

ਇਸ ਭਾਗ ਵਿਚ ਲੇਖ-ਨੁਮਾ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਹਰੇਕ ਦਾ ਉੱਤਰ 5 ਪੰਨਿਆਂ ਵਿਚ ਦਿੱਤਾ ਜਾਏਗਾ। ਪ੍ਰੀਖਿਅਕ ਵਲੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਦੋ ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 32 ਅੰਕ ਹਨ।

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

1. (ੳ) ਲੋਕਧਾਰਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਤੇ ਖੇਤਰ  
(ਅ) ਸਾਹਿਤ ਤੇ ਲੋਕ ਸਾਹਿਤ, ਲੋਕ ਸਾਹਿਤ ਦੇ ਰੂਪ ਤੇ ਉਹਨਾਂ ਦਾ ਵਰਗੀਕਰਨ  
(ੲ) ਸਭਿਆਚਾਰ, ਪਰਿਭਾਸ਼ਾ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ  
(ਸ) ਲੋਕਧਾਰਾ ਤੇ ਸਭਿਆਚਾਰ
2. (ੳ) ਗੁਰਮਤਿ ਸਿਧਾਂਤ ਤੇ ਵਿਚਾਰਧਾਰਾ  
(ਅ) ਇੱਕ ਬਾਣੀ ਦਾ ਅਧਿਐਨ : ਆਸਾ ਦੀ ਵਾਰ (ਗੁਰੂ ਨਾਨਕ)
3. (ੳ) ਵਾਰ ਕਾਵਿ : ਪ੍ਰਕਿਰਤੀ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਤੇ ਵਿਕਾਸ  
(ਅ) ਕਿਸੇ ਇੱਕ ਵਾਰ ਦਾ ਅਧਿਐਨ : ਚੱਠਿਆਂ ਦੀ ਵਾਰ (ਪੀਰ ਮੁਹੰਮਦ)

**SEMESTER-VI**

**PUNJABI**

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ-100

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰਜ਼ ਅਤੇ ਪ੍ਰੀਖਿਅਕਾਂ ਲਈ ਹਦਾਇਤਾਂ**

ਨੋਟ: ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਨਿਮਨ-ਲਿਖਤ ਅਨੁਸਾਰ ਤਿੰਨ ਭਾਗਾਂ ਵਿਚ ਪੁੱਛੇ ਜਾਣਗੇ।

**ਭਾਗ-ਏ**

ਇਸ ਭਾਗ ਵਿਚ 10 ਸੰਖੇਪ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ ਬਹੁਤ ਸੰਖੇਪ ਹੋਵੇ। ਉੱਤਰ 5 ਸਤਰਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਸਾਰੇ ਸਵਾਲ ਹੱਲ ਕਰਨੇ ਜ਼ਰੂਰੀ ਹਨ। ਹਰੇਕ ਸਵਾਲ ਦੇ 2 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ ਅੰਕ 20 ਹਨ।

**ਭਾਗ-ਬੀ**

ਇਸ ਭਾਗ ਵਿਚ 12 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 8 ਪ੍ਰਸ਼ਨ ਹਲ ਕਰਨੇ ਹਨ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦਾ ਉੱਤਰ 2 ਪੰਨਿਆਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ। ਹਰੇਕ ਸਵਾਲ ਦੇ 6 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 48 ਅੰਕ ਹਨ।

**ਭਾਗ-ਸੀ**

ਇਸ ਭਾਗ ਵਿਚ ਲੇਖ-ਨੁਮਾ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਹਰੇਕ ਦਾ ਉੱਤਰ 5 ਪੰਨਿਆਂ ਦਾ ਹੋਵੇ। ਪ੍ਰੀਖਿਅਕ ਵਲੋਂ 4 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਦੋ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 16 ਅੰਕ ਹਨ। ਇਸ ਭਾਗ ਦੇ ਕੁਲ 32 ਅੰਕ ਹਨ।

**ਪਾਠ-ਕ੍ਰਮ**

1. ਸੰਕਲਪ: ਉਦਾਤ, ਬਿੰਬ, ਧੁਨੀ, ਤ੍ਰਾਸਦੀ, ਵਕ੍ਰੋਕਤੀ
2. ਆਲੋਚਨਾ ਵਿਧੀਆਂ: ਮਾਰਕਸਵਾਦੀ, ਰੂਪਵਾਦੀ, ਸੰਰਚਨਾਵਾਦੀ
3. ਪਰਿਭਾਸ਼ਕ ਸ਼ਬਦਾਵਲੀ:
  1. ਚਿੰਨ੍ਹ (Sign), ਚਿੰਨ੍ਹਕ (Signifier), ਚਿੰਨ੍ਹਿਤ (Signified)
  2. ਪ੍ਰਤੀਕ (Simbol)
  3. ਲਾਂਗ ਭਾਸ਼ਾ (Langue)
  4. ਪੈਰੋਲ (Parole)
  5. ਲੜੀਦਾਰ ਸੰਬੰਧੀ (Paradigmatic Relation)

6. ਕੜੀਦਾਰ ਸੰਬੰਧੀ (Syntegmatic Relation)
7. ਇਕਾਲਕ (Synchronic)
8. ਦੁਕਾਲਕ (Diachronic)
9. ਰੂਪਾਵਲੀ (Paradigm)
10. ਭਾਸ਼ਾਈ ਯੋਗਤਾ (Linguistics Competence)
11. ਭਾਸ਼ਾਈ ਨਿਭਾਅ (Linguistics Performance)
12. ਸ਼ੈਲੀ (Style)
13. ਸਜੋੜ (Coherance)
14. ਪੇਸ਼ਬੰਦੀ (ਅਗਰਭੂਮੀ) (For Grounding)
15. ਪ੍ਰਸੰਗ ਸਥਿਤੀ (Context Of Situation)
16. ਸੰਰਚਨਾ (Structure)
17. ਪ੍ਰਣਾਲੀ/ਪ੍ਰਬੰਧ (System)
18. ਪ੍ਰਕਾਰਜ ਵੰਡ (Functional Distribution)
19. ਪੂਰਕ ਵੰਡ (Complimentary Distription)
20. ਖੁੱਲ ਬਦਲ (Free Variation)
21. ਕਿਰਤ/ਪਾਠ (Text)
22. ਪ੍ਰਵਚਨ (Discourse)
23. ਭਾਸ਼ਾਈ ਚਿੰਨ੍ਹ (Linguistics Sign)
24. ਸਭਿਆਚਾਰਕ ਚਿੰਨ੍ਹ (Cultural Sign)