

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2015-16
CLASS:-B.SC.-I SEM
PAPER-I A: DIVERSITY OF MICROBES (THEORY)

Algae: Phaeophyceae–*Ectocarpus*, *Sargassum*; Rhodophyceae–*Polysiphonia*.

Viruses, Bacteria and Fungi: General account of viruses and mycoplasma; bacteria–structure, nutrition reproduction and economic importance; Basidiomycotina–*Puccinia*, *Agaricus*; general account of Lichens.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2015-16
CLASS:-B.SC.-II SEM
PAPER-I A: DIVERSITY OF MICROBES (THEORY)

Structure and Function of Nucleus; Ultrastructure; nuclear membrane; nucleolus.

Chromosome Organization: Morphology; centromere and telomere; chromosome alterations; deletions, duplications, translocations, inversions; variations in chromosome number, aneuploidy, polyploidy; sex chromosomes.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2015-16
CLASS:-B.SC.-II SEM
PAPER-I A: DIVERSITY OF MICROBES (THEORY)

Genetic Inheritance: linkage analysis; allelic and non-allelic interactions. 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.

Mutations spontaneous and induced; transposable genetic elements; DNA, damage and repair.

SYLLABUS FOR REMEDIAL CLASSES

SESSION: - 2015-16

CLASS:-B.SC.-III SEM

**Paper-III A: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS-I
(THEORY)**

Evolution of the seed habit, General features of gymnosperms and their classification; Evolution and diversity of Gymnosperms including fossil and living gymnosperm, Geological time scale and fossilization.

Morphology of vegetative and reproductive parts; Anatomy of root, Stem and leaf; Reproduction and life cycle of Ginkgo. Angiosperms: Origin and evolution.

SYLLABUS FOR REMEDIAL CLASSES

SESSION: - 2015-16

CLASS:-B.SC.-IV SEM

**PAPER-IV B: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS-II
(THEORY)**

Angiosperm taxonomy; Brief history, Aims and fundamental components (alpha-taxonomy, Omega-taxonomy, Holotaxonomy); Identification, keys. Taxonomic literature.

Classification of angiosperms; Salient features of the systems proposed by Bentham and Hooker, Engler and Prantl.

Diversity of flowering plants as illustrated by members of the families: Euphorbiaceae, Orchidaceae and Poaceae

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2015-16
SEMESTER-VI BOTANY ECOLOGY AND UTILIZATION OF PLANTS

Population Ecology: Growth curves, ecotypes, ecads. Community Ecology: indices of alpha, beta and gamma diversity, life forms

Biogeographical Regions of India Landscape Ecology: Definition & concept, effect of patch size and shape on biodiversity, dynamics of land use.

Beverages: Tea and coffee. Rubber

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2015-16
B.Sc. (BIO-TECHNOLOGY) (SEMESTER-II)
Botany-B

Systems of classification: Salient features of Bentham & Hooker's, Hutchinson and Engler & Prantl's system of classification, (Details of Bentham & Hooker's system only). Criteria for primitive and advanced nature of families and flower. Evolutionary status of Ranunculaceae, Compositae, Orchidaceae. **Classification of seed-breeder**, foundation, certified and truthfully labeled seeds (TFLs). Seed testing (seed germination and seed viability test) and seed certification.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2015-16
M.Sc. Botany (Semester-IV) BOT C624 – Analytical Techniques

Principles and application of light, phase contrast, fluorescence scanning and transmission electron microscopy, cytophotometry and flow cytometry, fixation and staining.

Principles of biophysical methods used for analysis of biopolymeric structure, X-ray diffraction fluorescence UV/CD, visible NMR and ESR spectroscopy, hydrodynamic methods, Atomic absorption and plasma emission spectroscopy.

Principles and techniques of nucleic acid: hybridization and Cot curves; Sequencing of proteins and nucleic acids.

SYLLABUS FOR REMEDIAL CLASSES

SESSION: - 2016-17

CLASS:-B.SC.-II SEM

PAPER-I A: DIVERSITY OF MICROBES

Structure and Function of Nucleus; Ultrastructure; nuclear membrane; nucleolus

Chromosome Organization: Morphology; centromere and telomere; chromosome alterations; deletions, duplications, translocations, inversions; variations in chromosome number, aneuploidy, polyploidy; sex chromosomes.

SYLLABUS FOR REMEDIAL CLASSES

SESSION: - 2016-17

CLASS:-B.SC.-IV SEM

Paper-IV B: STRUCTURE, DEVELOPMENT AND REPRODUCTION IN FLOWERING PLANTS-II

Flower: A modified shoot; structure, development and varieties of flower; functions; 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; 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.

SYLLABUS FOR REMEDIAL CLASSES

SESSION: - 2016-17

M.Sc. Botany (Semester-IV) BOT C624 – Analytical Techniques

Principles and application of light, phase contrast, fluorescence scanning and transmission electron microscopy, cytophotometry and flow cytometry, fixation and staining.

Principles of biophysical methods used for analysis of biopolymeric structure, X-ray diffraction fluorescence UV/CD, visible NMR and ESR spectroscopy, hydrodynamic methods, Atomic absorption and plasma emission spectroscopy.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2017-18
CLASS:-B.SC.-II SEM
PAPER-II A: CELL BIOLOGY (THEORY)

Structure and Function of Nucleus Ultrastructure; nuclear membrane; nucleolus.

Chromosome Organization: Morphology; centromere and telomere; chromosome alterations; deletions, duplications, translocations, inversions; variations in chromosome number, aneuploidy, polyploidy; sex chromosomes.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2017-18
CLASS:-B.SC.-II SEM
PAPER-II B: GENETICS (THEORY)

Genetic Inheritance: Mendelism; laws of segregation and independent assortment; linkage analysis; allelic and non-allelic interactions.

Gene expression: Structure of gene; transfer of genetic information; transcription, translation, protein synthesis, tRNA; ribosome; regulation of gene expression in prokaryotes and eukaryotes; proteins, 1D, 2D, and 3D structure.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2017-18
CLASS:-B.SC.-IV SEM
SUBJECT: PAPER-IV A: DIVERSITY OF SEED PLANTS AND THEIR
SYSTEMATICS-I

Evolution of the seed habit, General features of gymnosperms and their classification; Evolution and diversity of Gymnosperms including fossil and living gymnosperm, Geological time scale and fossilization.

Morphology of vegetative and reproductive parts; Anatomy of root, Stem and leaf; Reproduction and life cycle of Ginkgo. Angiosperms: Origin and evolution.

SYLLABUS FOR REMEDIAL CLASSES
SESSION: - 2017-18
CLASS:-B.SC.-IV SEM
SUBJECT: PAPER-IV B: DIVERSITY OF SEED PLANTS AND THEIR
SYSTEMATICS-II

Angiosperm taxonomy; Brief history, Aims and fundamental components (alpha-taxonomy, Omega-taxonomy, Holotaxonomy); Identification, keys. Taxonomic literature.

Classification of angiosperms; Salient features of the systems proposed by Bentham and Hooker, Engler and Prantl.

Diversity of flowering plants as illustrated by members of the families: Euphorbiaceae, Orchidaceae and Poaceae

