

BOTANY

CODE-04

PAPER-I

MICROBIOLOGY, PATHOLOGY, PLANT GROUPS AND THEIR MORPHOLOGY ANATOMY, TAXANOMY EMBRYOLOGY OF ANGIOSPERMS

1. Microbiology- (Viruses and Bacteria)- their structure classification, reproduction and physiology Mode of infection of Viruses and bacteria. Role of microbes in industry and agriculture.
2. Pathology- Knowledge of common and important plant diseases caused by fungi and bacteria (Special reference to diseases common in Himachal Pradesh), mode of infection of fungi and control of disease.
3. Plant Groups- Classification, structure, reproduction, life history and economic importance of algae, fungi bryophytes Pteridophytes and Gymnosperms (including comparative study of various groups); a general knowledge of distribution of important general of principal sub-division of above groups in India (Emphasis of Western Himalayas).
4. Morphology, anatomy embryology and Taxonomy of Angiosperms- Morphology and Anatomy of Stem Root Leaf (excluding anomalous growth), Tissue and Tissue system. Structure of another flower Fertilization and development of seed. Classification of Angiosperms. Principles of nomenclature. Modern trends, in Taxonomy. A general knowledge of following families of Angiosperms;

Renunculaceae, Cruciferae, Malvaceae, Rubiaceae, Rosaceae Leguminosae, Cucurbitaceae, Umbelliferae, Compositae; Solanaceae. Labiales, Fabaceae, Liliaceae and Gramineae.

PAPER-II

CELL BIOLOGY, GENETICS AND EVOLUTION, PHYSIOLOGY, ECOLOGY AND ECONOMIC BOTANY

Cell Biology- Cell as a unit of structure and function, Ultrastructure of cell and its various organelles, Chromosomes. The physical and chemical structure, its behaviour during mitosis and Meiosis.

Genetics and Evolution- Pre and post Mendelian concept of Genetics. Development of gene concept. Genetic code Nucleic Acids, their structure and role in reproduction and protein synthesis, Mutation role of Mutations in Plant Breeding (wheat, gram, tobacco, cotton only) Organic Evolution- evidences and theories.

Physiology- Photosynthesis, Absorption and conduction of water, Transpiration mineral absorption. Role of Elements. Enzymes, Respiration, Fermentation Growth, Photoperiodism and Vernalization. Plant Hormones, their types and role. Dormancy of seeds.

Plant Ecology- Its scope, Plant communities, Plant succession, factors, applied ecology with special reference to pollution and conservation.

Economic Botany- Importance of Plants, Important Plant yielding food, fibre, wood and drug.