MB-03
BIOLOGY AND DIVERSITY OF LOWER PLANTS: CRYPTOGAMES

Max. Marks - 80

Units	Topics
I	**Microbiology** a. **Archaebacteria and eubacteria:** General account; ultrastructure, nutrition and reproduction; biology and economic importance; cyanobacteria - salient features and biological importance. b. **Viruses:** Characteristics and ultrastructure of virions; isolation and purification of viruses; chemical nature, replication, transmission of viruses; economic importance. c. **Phytoplasma:** General characteristics and role in causing plant diseases.
II	**Phycology:** Algae in diversified habitats (terrestrial, freshwater, marine); thallus organization; cell ultrastructure; reproduction (vegetative, asexual, sexual); criteria for classification of algae: pigments, reserve food, flagella; classification, salient features of Protochlorophyta, Chlorophyta, Charophyta, Xanthophyta, Bacillariophyta, Phaeophyta and Rhodophyta; algal blooms, algal biofertilizers; algae as food, feed and uses in industry.
III	**Mycology:** General characters of fungi; substrate relationship in fungi; cell ultrastructure; unicellular and multicellular organization; cell wall composition; nutrition (saprobic, biotrophic, symbiotic); reproduction (vegetative, asexual: sexual); heterothallism; heterokaryosis; parasexuality; recent trends in classification. Phylogeny of fungi; general account of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina, Deuteromycotina; fungi in industry, medicine and as food; fungal diseases in plants and human; Mycorrhizae; fungi as biocontrol agents.
IV	**Bryophyta:** Morphology, structure, reproduction and life history; distribution; classification; general account of Marchantiales, Junger-maniales, Anthoceratales. Sphagnales, Funariales and Polytrichales; economic and ecological importance.
V	**Pteridophyta:** Morphology, anatomy and reproduction; classification; evolution of stele; heterospory and origin of seed habit; general account of fossil pteriodophyta; introduction to Psilopsida, Lycopsida, Sphenopsida and Pteropsida.