

BOTANY

1. Origin of life : Basic Ideas on origin of earth and origin of life.
2. Biological Evolution : General account of biochemical and biological aspects of evolution and speciation.
3. Cell Biology : Cell structure, function or organelles. Mitosis, meiosis, significance of meiosis, differentiation, senescence and death of cells.
4. Tissue System : Origin, development, structure and function of primary and secondary tissues.
5. Genetic : Law of inheritance, concept of gene and genetic code, linking, crossing over, gene mapping, mutation and polyploidy, hybrid vigour, sex determination, genetics and plant improvement.
6. Plant diversity : Structure and function of plant form from evolutionary, aspect (Viruses to angiosperms including license and fossils).
7. Plant Systematic : Principle of nomenclature, classification and identification, modern approaches in plant taxonomy.
8. Plant growth and development : Dynamics of growth, growth movement and growth substances, factor of morphogenesis, mineral nutrition, water relation, elementary knowledge of photosynthesis, respiratory metabolism, Nitrogen metabolism, Nuclei acids and protein synthesis, enzymes, secondary metabolites, isotopes in biological studies.
9. Method of reproduction and seed Biology : Vegetative, asexual and sexual methods of reproduction, physiology of flowering, pollination and fertilization, sexual incapability, development, structure, Dormancy and germination of seed.
 - (a) Plant Physiology : Including transpiration, absorption of water, respiration, photosynthesis assimilation and photoperidism etc.
 - (b) Plant Pathology : Knowledge of disease of rice, wheat, sugarcane, potato, mustard, groundnut and cotton crops, principle of biological control, crown gall.
10. Plant and Environment : Biotic Components, ecological adaptations, types of vegetation Zones and forests in India, deforestation, forestation, social forestry, soil erosion, wasteland, reclamation, biodiversity conservation, NTFPs, joint forest management, micro-planning and landscape ecology.

11. Botany-A Human concern : Importance of germplasm resources, endangered, threatened and endemic taxa, cell tissue organ and protoplast culture, propagation and enrichment of genetic diversity, plants as sources of food, fodder, forage, fibres, fatty oils drugs, wood and timber, paper rubber beverages, spice essential oils and resins, gums dyes insecticides, pesticides and ornamentation.
 12. Biomass as a source of energy, bio-fertilize, technology in agro-horticulture medicine and industry.
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