

BOTANY

- 1. MORPHOLOGY** : Root, Stem Leaf, defensive mechanism inflorescence, flower, pollination, fertilization, seed & fruit production their dehiscence and dispersal.
- 2. ANATOMY** : (a) Cell, (b) Shoot and root apices, regions of growth, (c) Tissue system, (d) Stele and their types; differences between leaf and branch gaps, (e) Comparison of anatomical structures of root, stem and leaf, (f) Secondary growth and anomalous secondary growth, (g) Root-Stem transition.
- 3. CRYPTOGAMSALGAE:** Variations in the vegetative and reproductive structures of Chlorella Volvox, Hydrodictyon, Ulothrix, Oedogonium, Cosmarium, Chaetohora, Vaucheria, Chara, Ectocarpus, Fucus, Dictyota, Batrachospermum, Polysiphonia, Nostoc and Anabaena, Alternation of generations, Economic Importance of algae.
FUNGI : Variations in structure and reproductions of Phytophthora, Cystopus, saccharomyces, Penicillium, Erysiphae, Ustilago, Puccinia, Psalliota, Helminthosporium and Fusarium, Economic uses of Fungi, Lichen structure, reproduction and types.
BRYOPHYTES: Detailed study of vegetative and reproductive. Parts of Marchantia, Anthoceros and Sphagnum.
PTERIDOPHYTES: Detailed study of vegetative and reproductive structure, including their anatomy, of Lycopodium, Marselia and Isoetes.
- 4. GYMNOSPERMS** : Living, Cycas, Pinus and Gnetum
Fossil : A general study.
- 5. ANGIOSPERMS** : Principles of classification (artificial, natural and phylogenetic). Differences between monocot and dicot. Diagnostic characters of the following families : Poaceae, Lilliaceae, Musaceae, Arecaceae, Orchidaceae, Brassicaceae Cucurbitaceae, Tilliaceae, Malvaceae, Rutaceae, Fabaceae, Apiaceae, Lamiaceae, Apocynaceae, Asterceae and Euphorbiaceae.
- 6. PHYSIOLOGY** : Osmosis Imbibition, Absorption of water and solvents, Soil and their properties. Essential and non-essential elements, sand and water culture, Water loss, mechanism and ascent of sap including the theories, photosynthesis, respiration, fermentation nitrogen metabolism. Translocation of food, Germination, growth, growth hormon, mechanism of action of growth hormones in phototropic and geotropic curvatures, Movement.
- 7. ECOLOGY** : Definition, factors, succession, invasion, community, Association and interaction, Phytogeographical regions of India Detail idea about the floras of North-East India.

- 8. CYTOGENETICS :** Cell division, cell inclusion. Nucleus-
& PLANT structure and function, Chromosome,
BREEDING Polyploidy. Mendellism, Linkage and Crossing over,
mutation.
- 9. EVOLUTION :** Various theorie with reference to
BOTANY examples.
- 10.ECONOMIC :** Products and uses of the following
BOTANY plants : Rice, Wheat, Maize, Soyabeen, Pea, Ground-nut,
Mustard, Coconut, castor, Cotton, Jute, Cinchona, Atropa,
Balladona, Rauolfia, Tea and Sugarcane.