

Topic Cover

1. Introduction of Pharmacognosy

- Historical development, modern concept and scope of Pharmacognosy. Significance of Pharmacognosy in various systems of medicine practiced in India viz: Ayurveda, Unani, Homeopathic and Siddha.

2. Quality control of crude drugs

- Quality control of herbal drugs as per WHO, AYUSH and Pharmacopoeial guidelines- Extractive values, ash values, chromatographic techniques (TLC, HPTLC and HPLC) for determination of chromatographic markers. Determination of heavy metals, insecticides, pesticides and microbial load in herbal preparations

3. Basic Metabolic pathway/Biogenesis

- Formation of primary and secondary metabolites. Study of Calvin cycle, TCA cycle, Shikimic acid pathway, Embden-Mayerhoff pathway, acetate hypothesis, isoprenoid pathway. Biosynthesis of carbohydrates, lipids and volatile oils.

4. Plant Tissue culture

- History and scope of plant tissue culture, growth media, plant growth regulators: callus and suspension culture, Biotransformation, immobilization, hairy root culture. Transgenic plants and their applications, plant tissue culture as source of secondary metabolites.

5. Volatile oil and Lipids

- Biological sources, morphology, chemical constituents, adulterants and uses of: Black pepper, turpentine, mentha, coriander, cardamom, cinnamon, cassia, lemon peel, orange peel, lemon grass, citronella, cumin, caraway, dill, spearmint, clove, anise, star anise, fennel, nutmeg, eucalyptus, chenopodium, ajowan, sandal wood.
- Biological sources, salient morphological features, chemical constituents, and uses of: Plantago, bael, chalmooogra oil, neem oil, shark liver oil, cod liver oil, guggul lipids.