PHARMACOGNOSY- Sources of Drugs: Cultures as sources of drugs, Biological, marine, mineral and plant tissue

Classification of Drugs: Morphological, chemical and pharmacological classification of drugs, taxonomical

Study of medicinally important plants belonging to the families with special reference to: Apocynacae, Papaveraceae, Solanaceae, Cruciferae, Rutaceae, Labiatae, Graminae, Umbelliferae, Liliaceae, Rubiaceae, Leguminosae

Cultivation, Collection, Processing and Storage of Crude Drugs: Factors influencing cultivation of medicinal plants, mutation and hybridization with reference to medicinal plants, Polyploidy, Plant hormones and their applications, Types of soils and fertilizers of common use Pest management and natural pest control agents

Quality Control of Crude Drugs: Physical, Adulteration of crude drugs and their detection by organoleptic, chemical and biological methods and properties, microscopic

Introduction to Active Constituents of Drugs: Isolation, classification, properties

Systematic Pharmacognostic study of the followings: Carbohydrates and derived products: Sterculia and Tragacanth, agar, Starch, guar gum acacia, Honey, pectin, Isabagol

Lipids: Rice Bran oil, Bees wax, Shark liver oil and Wool fat, Castor oil, Linseed oil, Cocoa butter, Lard, Codliver oil, Kokum butter, Hydnocarpus oil

Resins: Study of Drugs Containing Resins and Resin Combinations like Colophony, ginger, podophyllum, turmeric, jalap, cannabis, benzoin, capsicum, balsam of Peru, myrrh, balsam of Tolu, asafetida

Tannins: Gall and myrobalan, Study of tannins and tannin containing drugs like Gambier, black catechu

Volatile Oils: Gaultheria, General methods of obtaining volatile oils from plants, Sandal wood, Study of volatile oils of Mentha, Coriander, Palmarosa, Cinnamon, Musk, Cassia, Valerian, Lemon peel, Cardamom, Orange peel, Chenopodium, Lemon grass, Eucalyptus, Citronella, Caraway, Nutmeg, Dill, Spearmint, Fennel, Clove

Phytochemical Screening: Preparation of extracts, amino acids in plant extracts, Screening of alkaloids, cynogenetic glycosides, anthraquinones, tannins and polyphenols, saponins, flavonoids and leucoanthocyanidins, cardenolides and bufadienolides

Fibers: Polyester and asbestos, glass-wool, Study of fibers used in pharmacy, cotton, silk, wool, nylon

Study of the biological sources, cultivation, collection, commercial varieties, chemical constituents, substitutes, adulterants, uses, diagnostic macroscopic and microscopic features and specific chemical tests of following groups of drugs

Glycoside Containing Drugs:

Saponins: Liquorice, ginseng, senega, dioscorea, sarsaparilla, Cardioactive glycosides: Digitalis, squill, thevetia, strophanthus, Anthraquinone cathartics: Aloe, cascara, senna, rhubarb, Others: Psoralea, gentian, quassia, saffron, chirata
Alkaloid Containing Drugs: Pyridine-piperidine: Tobacco, areca and lobelia Tropane: Belladonna, hyoscyamus, datura, duboisia, coca and withania Quinoline and Isoquinoline: Cinchona, ipecac, opium Indole: Ergot, rauwolfia, catharanthus, nux-vomica and physostigma Imidazole: Pilocarpus Steroidal: Veratrum and kurchi Alkaloidal Amine: Ephedra and colchicum Glycoalkaloid: Solanum Purines: Coffee, tea and cola, pancreatin, Biological sources, papain, trypsin, preparation, pepsin, Diastase

Studies of Traditional Drugs: Lehyas and Bhasmas, Common vernacular names, Chumas, botanical sources, Tailas, morphology, Gutikas, chemical nature of chief constituents, Asvas, pharmacology, Introduction to ayurvedic preparations like Arishtas, indigenous drugs: Amla, The holistic concept of drug administration in traditional systems of medicine , Kantkari, Nagarmotha and Neem, Satavari, Gymnema, Shilajit, Tylophora, Bhilawa, Palash, Guggal, Kalijiri, Bach, Rasna, Methi, Lahsun, Punamava, Ashoka, Chitrack, Apamarg, Atjuna, Gokhru, Shankhapushpi, Brahmi, Adusa

General Techniques of Biosynthetic Studies and Basic Metabolic Pathways/ Biogenesis:

Terpenes: diterpenes, monoterpenes, triterpenoids, sesquiterpenes Carotenoids: ß-carotenes, Xanthophylls of medicinal importance, vitamin A, a-carotenoids Glycosides: diosgenin and sarasapogenin, Digitoxin, hecogenin, digoxin, sennosides Alkaloids: Ergot and Vinca alkaloids, Atropine and related compounds, Ephedrine, Quinine, Papaverine, Reserpine, Morphine

Lignans, quassanoids and flavonoids. Role of plant-based drugs on National economy: A brief account of plant based industries and institutions involved in work on medicinal and aromatic plants in India, Plant bitters and sweeteners, Rauwolfia and plants containing laxatives, Utilization and production of phyto-constituents such as quinine, Aloe, Valerian, Ginseng, Liquorice, calcium sennosides, Ipecac, podophyllotoxin, cinchona, diosgenin, Papain, alkaloid containing plants, solasodine, and tropane alkaloids, tropane, sandalwood oil, taxol (Taxussps) digitalis, mentha oil, lemon grass oil, vetiver oil, geranium oil and eucalyptus oil, diosgenin (disocorea), World-wide trade in medicinal plants

Plant Tissue Culture: Historical development of plant tissue culture, Applications of plant tissue culture in pharmacognosy, types of cultures, growth and their maintenance, nutritional requirements

Marine pharmacognosy: Standardization and quality control of herbal drugs, Novel medicinal agents from marine source, WHO guidelines for the standardization of herbal drugs, Herbal cosmetics, Natural allergens and photosensitizing agents and fungal toxins, Herbs as health foods.