

Unit I**12h**

Medicinal and aromatic plants, A brief account on Phytochemical and Pharmacological aspects and uses of medicinal plants. Study of biosynthetic pathway of Atropine, Morphine Cardiac glycosides, Terpenes and Flavonoids. Definition of Functional foods and Nutraceuticals. Classification, Medicinal uses and health benefits of Nutraceuticals / Functional foods - Spirulina, Soya bean, Garlic, Turmeric, Tea and Coffee, Carotenoids, α and β Carotene, Lycopene, Xanthophyll and Flavonoids. Vegetable Bitters: Definition; bitter principles, actions and therapeutics.

Unit II**14h**

HERBAL EXTRACTS: Types of extracts; Extraction methods such as Maceration, Percolation, super critical fluid extraction, Distillation Methods; Methods for drying of extracts. Solvent extractions, Ointment bases, Suppository bases and Hardening agents: Lanolin, Beeswax, Cocoa Butter, Hard paraffin, Petroleum jelly. Flavours and Perfumers: Cardamom oil, Vanilla, Lemon oil, Orange oil, Sandal wood oil. Natural sweeteners: Definition of Nutritive and Non-nutritive sweeteners with examples, sweetness potency. Herbal drugs industry, International Scenario, Cultivation of medicinal and aromatic plants. Patent laws, proposed amendments as applicable to herbal/natural products and processes; drafting and filing a patent.

Unit III**14h**

Herbal Cosmetics: General method of preparation and evaluation of Herbal Cosmetics such as Skin care products. A brief account of Herb extracts or Herbal products of cosmetic importance such as Aloe vera, Neem, Henna, Acacia concinna pods, Citrus aurantium peel, Liquorice, Sandal wood, Olive oil, Wheat germ oil, Almond oil. Herbal products intended for treatment of GIT, CVS, Respiratory systems, CNS Examples of Disorders of a) GIT – Diabetes, Liver, Constipation, Diarrhoea, Dysentery. B) CVS – Hypertension, Angina c) RS – Bronchitis, Asthma, Tussive d) CNS – Pain, Fever, Anxiety Convulsions e) Musculo – Skeletal – Rheumatism, Cramps, f) Skin – Leucoderma g) GUS-Oedema, Urinary calculus, Leucorrhoea Dysmenorrhoea. Industrial and Research aspects of Pharmacognosy A brief account of some of the technologies developed by different research institutes and companies of both national and international status like CIMAP, RRL, CDRI, NBRI, CSIR. National centre for development of natural products (NCDNP).