

Unit I

Introduction to different dosage forms. Their classification with examples – their relative applications, familiarization with new drug delivery systems. Introduction to pharmacopoeias with special reference to the Indian pharmacopoeia. Systems of weights and measures; basic Pharmaceutical Calculations including conversion from one to another system, percentage calculation and adjustment of products, use of allegation method in calculations and isotonic solutions. Objectives and factors influencing the various pharmaceutical unit operations including sterilization. Hospitals – Definition, Function, Classifications based on Various criteria, Organisation. Management and health delivery system in India.

Unit II

Processing, excipients used and evaluation of liquid, solid, semisolid and sterile dosage forms. Study of immunological products: Like Sera, Vaccines, Toxoids and their preparations. Desirable features of a container – types of containers. Study of glass and plastics as materials for containers and rubber as material for closures, their merits and demerits. Introduction to aerosol packaging. Introduction to dental and cosmetic preparations. Prescription – Reading and understanding of prescriptions. Modern methods of prescribing, Adoption of merit system, Posology – Dosage and dosage of drug. Factors influencing dose, Calculations of doses on the basis of age, sex and surface area. Veterinary doses.

Unit III

Brief chemistry and role of proteins, polypeptides, carbohydrates and amino acids, vitamins and coenzymes. Classifications, Qualitative tests, Biological value and Deficiency diseases related to metabolism. Role of minerals and water in life processes. Enzymes: Brief concept of enzymatic action, factors affecting it, therapeutic and pharmaceutical importance. Introduction to pathology of blood and urine. Abnormal constituents of Urine and their significance in diseases.

Unit IV

Elementary tissues of the body, structure and function of skeleton, classification of joints , their functions and Joint disorders. Composition of blood, brief information regarding disorders of blood. Names of various parts of physiological systems and their functions, such as respiratory, digestive, CVS, CNS, ANS, reproductive, urinary etc., physiology of muscle, Elementary knowledge of structure and functions of the organs of taste, smell, ear, eye and skin. Endocrine glands and Hormones - Location of the glands, their hormones and functions. Concept of health, nutrition and health – Classification of foods, requirements, diseases induced due to deficiency of proteins, vitamins and minerals; treatments and prevention. Demography and family planning; Environment and health; Fundamental principles of microbiology -Classification of microbes, isolation, staining techniques of organisms of common diseases. Causative agents, mode of transmission and preventions of communicable and non communicable diseases. Brief knowledge of epidemiology and its significance.

Unit V

Various systems of classification of drugs of natural origin. Adulteration and drug evaluation: Significance of Pharmacopoeial standards. Brief outline of occurrence, distribution, outline of isolation, identification tests, therapeutic effects and pharmaceutical applications of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins. Occurrence, distribution, organoleptic evaluations. Chemical constituents including tests wherever applicable and therapeutic efficacy of following categories of drugs Aloes, Rhubarb, Castor oil, Ispaghula, Senna, Digitalis, Coriander, Fennel, Ajowan, Cardamom, Ginger, Cinnamon, Clove, Benzoin, Myrrh, Neem, Curcuma, Rauwolfia, Hyoscyamus, Belladonna, Aconite, Ashwagandha, Ephedra, Opium, Cannabis, Nuxvomica, Liquorice, Garlic, Picrorhiza, Dioscorea, Linseed, – Cotton, Silk, Wool and Regenerated fibres. Collection and preparation of crude drugs for the market as exemplified by Ergot, Opium, Rauwolfia, Digitalis, Senna. Gross anatomical studies of: Senna Datura, Cinnamon, Cinchona, Fennel, Clove, Ginger, Nux Vomica and Ipecacuanha.

Unit VI

General discussion on the following inorganic compounds including important physical and chemical properties, medicinal and pharmaceutical uses, storage conditions and chemical incompatibility of Gastrointestinal agents -Antacids – Sodium bicarbonate, Aluminium hydroxide gel, Aluminium phosphate, Calcium carbonate, Magnesium carbonate, Magnesium trisilicate, Magnesium oxide, Combinations of antacid preparations; Topical Agents-Antimicrobials and Astringents – Hydrogen peroxide, Potassium permanganate, Chlorinated lime, Iodine, Solutions of Iodine, Povidone Iodine, Boric acid, Borax, Silver nitrate, Mild silver protein, Mercury, Yellow mercuric oxide, Ammoniated mercury Dental Products -- Sodium chloride, stannous fluoride, calcium carbonate, sodium metaphosphate, Dicalcium phosphate, Strontium chloride, Zinc chloride; Expectorants and Emetics -Ammonium chloride, Potassium iodide, Antimony potassium tartrate; Quality control of Drugs and Pharmaceuticals – Importance of quality control, significant errors, Methods used for quality control, sources of impurities in pharmaceuticals. Limits tests of arsenic, chloride, sulphate, iron and heavy metals.

Unit VII

The chemistry of following pharmaceutical organic compounds covering their nomenclature, chemical structure, uses and the important physical and chemical properties. Antibiotics – Benzyl penicillin*, Phenoxymethyl penicillin*, Benzathine penicillin, Ampicillin*, Cloxacillin, Carbenicillin, Gentamycin, Neomycin, Erythromycin, Tetracycline, Cephaloridine, Cephalothin, Griseofulvin, Chloramphenicol. Cardiovascular Drugs – Ethylnitrite*, Glyceryl trinitrate, Alpha methyl dopa, Guanethidine, Clofibrate, Quinidine. Hypoglycemic Agents– Insulin, Chlorpropamide*, Tolbutamide, Gilbenclamide, Phenformin*, Metformin. Steroidal Drugs – Betamethazone, Coritsone, Hydrocortisone, Prednisolone, Progesterone, Testosterone, Oestradiol, Nandrolone. Antineoplastic Drugs– Actinomycins, Azathioprin, Busulphan, Chlorambusil, Cisplatin, Cyclophosphamide, Daunorubicin hydrochloride, Fluorouracil, Mercaptopurine, Methotrexate, Mytomycin.

Unit VIII

Routes of administration of drugs their advantages and disadvantages. Various processes of absorption of drugs and the factors affecting them. Metabolism, distribution and excretion of drugs. General mechanism of drug action and factors which modify drug action. Pharmacological classification of drugs. The discussion of drugs should emphasize the following aspects. Drugs acting on the Central Nervous System. a) General anaesthetics, adjunct to anaesthesia, intravenous anaesthetics. b) Analgesic, anti-pyretics and non-steroidal anti-inflammatory drugs. Narcotic analgesics. Antirheumatic and antigout remedies, Sedatives and Hypnotics, Psychopharmacological agents, Anti convulsants, Analeptics. Drug acting on autonomic nervous system. a) Cholinergic drugs, Anticholinergic drugs, Anticholinesterase drugs. b) Adrenergic drugs and adrenergic receptor blockers. Cardio vascular drugs: Cardiotonics, Antiarrhythmic agents, Antiarrhythmic agents, Antianginal agents, Antihypertensive agent, Peripheral vasodilators and drugs used in atherosclerosis. Chemotherapy of microbial disease: Urinary antiseptics, Sulphonamides Penicillins, Streptomycin, Tetracyclines and other antibiotics. Antitubercular agents, antifungal agents, antiviral drugs, antileprotic drugs. Chemotherapy of cancer.

Unit IX

Origin and nature of Pharmaceutical legislation in India – Its scope and objectives. Evolution of the concept of Pharmacy as an integral part of the Health care system. Principle and significance of Professional Ethics – Critical study of the Code of Pharmaceutical Ethics drafted by Pharmacy Council of India. Pharmacy Act 1948, the Drugs and Cosmetics Act. 1940, Latest Drugs (Price Control) Order in force, Narcotic Drugs and Psychotropic Substance Act. 1985.

Unit X

Drug House management – Selection of site, space layout and legal requirements. Importance and objectives of purchasing, selection of suppliers, credit information, tenders, contracts and price determination and legal requirements thereto. Codification handling of drug stores and other hospital supplies. Inventory control objectives and

importance. Introduction to the accounting concept and conventions Double entry, Book keeping, Different kinds of accounts. Cash Book, General Ledger and Trial Balance. Hospital Pharmacy, Drugs distribution system in Hospitals, Introduction to Clinical Pharmacy Practice – Definition and scope. Modern dispensing aspects – Pharmacists and patient counseling and advice for the use of common drugs medication history.