

PHARMCEUTICAL CHEMISTRY

UNIT – I

Chemistry of Heterocyclics – A brief account of the Methods of synthesis of heterocyclic and drugs derived from the following and their uses – Pyridine derivatives – Triphenylamine and Mepyramine – Quinoline derivatives – Chloroquine, amodiaquine and Primaquine – Pyrimidines – Urides and barbiturates – Antibiotics – Pharmacological action – Structural elucidation – synthesis and uses of chloramphenicol and Penicillin.

UNIT – II

Enzymes – Characteristics – Classification – Composition and biological functions – Composition of Blood and Blood Plasma – Analysis of serum proteins – Functions of Plasma proteins – Osmotic regulation – Functions of Haemoglobin, Transport of Oxygen and maintenance of pH of blood – Analysis of Haemoglobin in blood – Rh factor – Blood pressure – Normal, High and low and to control - Diagnostic test for sugar, salt and cholesterol in serum – Medicinally important compounds of Al, P, As and iron – Their preparation and applications.

UNIT – III

Alkaloids – General methods of extraction from a plant source, colour reaction and detection – Morphine and Quinine with special reference to structure relationship (SAR) and uses. Chemistry of Sulphonamides – Sulphadiazine – Sulphapyridine phthalyl sulphathiazole – Sulpha furazole and prontosil – Preparation and uses – Vitamins – Classification of Vitamins – Vitamin A, B₁ and B₂, Ascorbic acid – their synthesis, estimation and uses.

UNIT – IV

Organic diagnostic agents – X-ray contrast media (radiopaques) Sodium diatrizoate, iodipamide, iophendylate – Diodone – Phenol sulphophthalein – Evan's blue – Indigocarmine – Methylene blue – Histamine – pentagastrin – Xylose and sodium benzoate – Clinical estimation of proteins, Glucose, Urea, Blood, Cholesterol and Haemoglobin – Analgesic – Classification – Narcotic analgesics – Morphine and derivatives – Totally synthetic analgesic – Pethidine and Methadones – Antipyretic analgesics – Salicylic acid derivatives, Indolyl derivatives and para aminophenol derivatives – Synthesis – action and uses.

UNIT – V

Anaesthetics – Preparation and uses of General and Local Gaseous anaesthetics – Ether, Vinyl ether, Methoxy fluorane, Halogenated hydrocarbons like chloroform, Halothane, Trichloroethylene, ethyl chloride, Cyclopropane, Nitrous oxide – Intravenous anaesthetics – Thiopentane sodium, Methohexitone and propofol – Local anaesthetics – Cocaine and its derivatives.

Antiseptics and disinfectants – phenols and related compounds, Organic mercurials – Dyes, cationic surface active agents, Miscellaneous agents like Chloramine-T, Chlorhexidine, Dequalinium chloride, Formaldehyde and Nitrofurazone.

Organic pharmaceutical aids – their role as preservatives, antioxidants, colouring, flavouring and sweetening agents, emulsifying agents – Stabilizing – and suspending agents – Ointment bases – Disintegrating agents.