

18BP004 PHARMACEUTICAL INORGANIC CHEMISTRY - I

Hours Per Week :

L	T	P	CP	CL
3	1	2	2	4

Total Hours :

L	T	P	WA/RA	SSH/SHS	CS	SA	S	BS
45	1	60						

SCOPE:

This subject deals with the monographs of inorganic drugs and pharmaceuticals.

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes	POs	PSOs
1	know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals	1,4	1,2
2	understand the medicinal and pharmaceutical importance of inorganic compounds	1,4 ,5	1,2
3	Know the preparation and analysis of inorganic medicinal compounds	1,4 ,5	1,2
4	Know their diagnostic applications	1,4	1,2
5	Apply the knowledge to prepare various inorganic pharmaceuticals	1,2 ,4	1,2

UNIT – I**10 HOURS**

IMPURITIES IN PHARMACEUTICAL SUBSTANCES: History of Pharmacopoeia, Sources and types of impurities, principle involved in the limit test for Chloride, Sulphate, Iron, Arsenic, Lead and Heavy metals, modified limit test for Chloride and Sulphate

GENERAL METHODS OF PREPARATION: assay for the compounds superscripted with **asterisk (*)**, properties and medicinal uses of inorganic compounds belonging to the following classes

UNIT – II**10 HOURS**

ACIDS, BASES AND BUFFERS: Buffer equations and buffer capacity in general, buffers in pharmaceutical systems, preparation, stability, buffered isotonic solutions, measurements of tonicity, calculations and methods of adjusting is tonicity.

MAJOR EXTRA AND INTRACELLULAR ELECTROLYTES: Functions of major physiological ions, Electrolytes used in the replacement therapy: Sodium chloride*, Potassium chloride, Calcium glaciante* and Oral Rehydration Salt (ORS), Physiological acid base balance.

DENTAL PRODUCTS: Dentifrices, role of fluoride in the treatment of dental caries, Desensitizing agents, Calcium carbonate, Sodium fluoride, and Zinc eugenol cement.

UNIT – III**10 HOURS****GASTROINTESTINAL AGENTS**

ACIDIFIERS: Ammonium chloride* and Dil. Hcl

ANTACID: Ideal properties of antacids, combinations of antacids, Sodium Bicarbonate*, Aluminum hydroxide gel, Magnesium hydroxide mixture

CATHARTICS: Magnesium sulphate, Sodium orthophosphate, Kaolin and Mennonite

ANTIMICROBIALS: Mechanism, classification, Potassium permanganate, Boric acid, Hydrogen peroxide*, Chlorinated lime*, Iodine and its preparations

UNIT - IV**08 HOURS****MISCELLANEOUS COMPOUNDS**

EXPECTORANTS: Potassium iodide, Ammonium chloride*. **Emetics:** Copper sulphate*, Sodium potassium tartar ate **Haematinics** Ferrous sulphate*, Ferrous glaciante

POISON AND ANTIDOTE: Sodium this sulphate*, Activated charcoal, Sodium nitrite³³³

ASTRINGENTS: Zinc Sulphate, Potash Alum

UNIT - V**07 HOURS**

RADIOPHARMACEUTICALS: Radio activity, Measurement of radioactivity, Properties of radiations, Half life, radio isotopes and study of radio isotopes - Sodium iodide I¹³¹, Storage conditions, precautions & pharmaceutical application of radioactive substances.

