

Gujarat Technological University

B.Pharm Semester-I

Pharmaceutical Chemistry – I (Pharmaceutical Inorganic Chemistry)

Theory(3 Hours / Week; 3 Credits)

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| 1. | Introduction to Pharmaceutical Chemistry. | 1hrs |
| 2. | Impurities in Pharmaceuticals: Sources of impurities, tests for purity and identity, limit tests for iron, arsenic, lead, heavy metals, chloride, sulphate. | 4hrs |
| 3. | An outline of method of preparation, uses, special tests if any, of the following class of inorganic pharmaceuticals included in the current pharmacopoeia: | 3hrs |
| | a) Acids and Bases: Buffers, Waters | 4hrs |
| | b) gastrointestinal agents: Acidifying agents, Antacids, Protective and Adsorbents, Cathartics. | 4hrs |
| | c) Major intra and extra-cellular electrolytes: physiological ions, Electrolytes used for replacement therapy, acids-base balance and combination therapy. | 5hrs |
| | d) Essential and trace elements: Transition elements and their compounds of pharmaceutical importance: Iron and haematinics, mineral supplements. | 3hrs |
| | e) Topical agents: Protective, Astringents and Anti-infectives. | 3hrs |
| | f) Gases and Vapors: Oxygen, Anesthetics and Respiratory Stimulants. | 2hrs |
| | g) Dental products: Dentifrices, Anti-caries agents. | 3hrs |
| | h) Complexing and Chelating agents used in therapy. | 2hrs |
| | i) Miscellaneous agents: Sclerosing agents, Expectorants, Emetics, Poisons and Anti-dotes, Sedatives etc. | 4hrs |
| | j) Pharmaceutical Aids used in pharmaceutical industry : Anti-oxidants, Preservatives, Filter aids, Adsorbents, Diluents, | 6hrs |
| | k) Inorganic Radio pharmaceuticals:
Nuclear radiopharmaceuticals, reactions, Nomenclature, Methods of obtaining their standards and units of activity, measurements of activity, clinical applications and dosage, hazards and precautions. | 3hrs |

Practical (3 credit)

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| 1) | The backgrounds and systematic qualitative analysis of Inorganic mixture of up to 4 radicals. Six mixtures to be analyzed, Preferably by semi-micro methods. | 18hrs |
| 2) | All identification tests for pharmacopoeial inorganic pharmaceuticals and qualitative tests for cations and anions should be covered. | 6hrs |
| 3) | Limit tests for Cl, SO ₄ , As, Heavy metals and Lead along with a Few modifications. | 9hrs |
| 4) | Volumetric Analysis of few important compounds covered in theory. | 12hrs |

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Books Recommended:

1. Inorganic Medicinal and Pharmaceutical Chemistry : J. H. Block, E. B. Roche, T. O. Soine, C. O. Wilson, Varghese Publishing House, First Indian Reprint, 1986.
2. Bentley and Driver's Textbook of Pharmaceutical Chemistry: Revised by L. M. Atherden, Oxford University Press, 8th Ed. 1969.
3. The Indian Pharmacopoeia, Latest Edition, Controller of Publications, Delhi.
4. Practical Pharmaceutical Chemistry edited by A. H. Beckett, J. B. Stenlake, CBS Publishers, and First Indian edition 1987.
5. Vogel's Qualitative Inorganic Analysis Revised by G. Svehla, Longman Gr. Ltd., 7th Ed. 1996.