

## BP103T. PHARMACEUTICS-I (Theory)

45 Hours

### Course Content:

#### Unit-I

10 Hours

**Historical background and development of profession of pharmacy:** History of profession of Pharmacy in India in relation to pharmacy education, industry and organization, Pharmacy as a career, Pharmacopoeias: Introduction to IP, BP, USP and Extra Pharmacopoeia.

**Dosage forms:** Introduction to dosage forms, classification and definitions.

**Prescription:** Definition, Parts of prescription, handling of Prescription and Errors in prescription.

**Posology:** Definition, Factors affecting posology. Pediatric dose calculations based on age, body weight and body surface area.

#### Unit-II

10 Hours

**Pharmaceutical calculations:** Weights and measures– Imperial & Metric system, Calculations involving percentage solutions, allegation, proof spirit and isotonic solutions based on freezing point and molecular weight.

**Powders:** Definition, classification, advantages and disadvantages. Simple & compound powders– official preparations, dusting powders, effervescent, efflorescent and hygroscopic powders, eutectic mixtures. Geometric dilutions.

**Liquid dosage forms:** Advantages and disadvantages of liquid dosage forms. Excipients used in formulation of liquid dosage forms. Solubility enhancement techniques.

#### Unit-III

10 Hours

**Monophasic liquids:** Definitions and preparations of Gargles, Mouthwashes, Throat Paint, Eardrops, Nasal drops, Enemas, Syrups, Elixirs, Liniments and Lotions.

#### **Biphasic liquids:**

**Suspensions:** Definition, advantages and disadvantages, classifications, Preparation of suspensions; Flocculated and Deflocculated suspension & stability problems and methods to overcome.

**Emulsions:** Definition, classification, emulsifying agent, test for the identification of type of Emulsion, Methods of preparation & stability problems and methods to overcome.

#### Unit-IV

08 Hours

**Suppositories:** Definition, types, advantages and disadvantages, types of bases, methods of preparations. Displacement value & its calculations, evaluation of suppositories.

**Pharmaceutical incompatibilities:** Definition, classification, physical, chemical and therapeutic incompatibilities with examples.

#### Unit-V

07 Hours

**Semisolid dosage forms:** Definitions, classification, mechanisms and factors influencing dermal penetration of drugs. Preparation of ointments, pastes, creams and gels. Excipients used in semi-solid dosage forms. Evaluation of semi-solid dosage forms.

## BP109P. PHARMACEUTICS I (Practical)

3 Hours/week

### 1. Syrups

- a) Syrup IP'66.
- b) Compound syrup of Ferrous Phosphate BPC'68.

### 2. Elixirs

- a) Piperazine citrate elixir.
- b) Paracetamol pediatric elixir.

### 3. Linctus

- a) Terpen Hydrate Linctus IP'66.
- b) Iodine Throat Paint (Mandl's Paint).

### 4. Solutions

- a) Strong solution of ammonium acetate.
- b) Cresol with soap solution.
- c) Lugol's solution.

### 5. Suspensions

- a) Calamine lotion.
- b) Magnesium Hydroxide mixture.
- c) Aluminum Hydroxide gel.

### 6. Emulsions

- a) Turpentine Liniment.
- b) Liquid paraffin emulsion.

### 7. Powders and Granules

- a) ORS powder (WHO).
- b) Effervescent granules.
- c) Dusting powder.
- d) Divided powders.

### 8. Suppositories

- a) Glycero -Gelatin suppository.
- b) Cocoa butter suppository.
- c) Zinc Oxide suppository.

### 9. Semisolids

- a) Sulphur ointment.
- b) Non staining-iodine ointment with methyl salicylate.
- c) Carbopol gel.

### 10. Gargles and Mouthwashes

- a) Iodine gargle.
- b) Chlorhexidine mouthwash.

**Recommended Books: (Latest Editions)**

- Pharmaceutical Dosage Form and Drug Delivery System by H.C. Ansel et al., Lippincott Williams and Wilkins, New Delhi.
- Cooper and Gunn's Dispensing for Pharmaceutical Students by Carter S.J., CBS Publishers, New Delhi.
- A Practical Guide to Contemporary Pharmacy Practice by Judith E. Thompson, 1<sup>st</sup> ed., Lippincott Williams & Wilkins.
- Pharmaceutics, The Science & Dosage Form Design by M.E. Aulton, Churchill Livingstone, Edinburgh.
- Pharmacopoeia of India, The Controller of Publications, Delhi.
- British Pharmacopoeia, Her Majesty's Stationary Office, University Press, Cambridge.
- United States Pharmacopoeia (National Formulary).
- Theory and Practice of Industrial Pharmacy by Lachman, Lea & Febiger Publisher, the University of Michigan.
- Remington. The Science and Practice of Pharmacy by Alfonso R. Gennaro, Lippincott Williams and Wilkins, New Delhi.
- Cooper and Gunn's Tutorial Pharmacy by Carter S.J., CBS Publications, New Delhi.
- Bentley's Textbook of Pharmaceutics by E.A. Rawlins, English Language Book Society, Elsevier Health Sciences, USA.
- Pharmaceutical Palletization Technology by Isaac Ghebre Sellassie, Marcel Dekker Inc., New York.
- Handbook of Pharmaceutical Granulation Technology, Marcel Dekker Inc., New York.
- Pharmaceutical Emulsions and Suspensions, Françoise Nieloud and Gilberte Marti-Mestres Marcel Dekker, INC, New York.
- Textbook of Pharmaceutics, Volume - I & II by Aulton M.E., Churchill Livingstone, London.
- Modern Dispensing Pharmacy by Jain N.K., 2<sup>nd</sup> Ed, PharmaMed Press, Hyderabad.
- Calculations for Pharmaceutical Practice by A. Winfiled and I. Edafigho, Elsevier Churchill Livingstone, London.
- Elementary Pharmaceutical Calculations by Tripathi D.K., PharmaMed Press, Hyderabad.