

2010 Scheme

QP CODE: 203006

Reg. No:

Second Year B.Pharm Degree Supplementary Examinations January 2025 Pharmaceutics – II

Time: 3 Hours

Total Marks: 100

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Write equations wherever necessary.**

Essays

(3x10=30)

1. Describe the different types of non-Newtonian fluids: plastic, pseudoplastic, and dilatant systems. How does each type behave under shear stress compared to Newtonian fluids. Provide suitable examples of each type.
2. Describe the role of cyclodextrins in solubility enhancement. How do cyclodextrins form inclusion complexes with drugs, and what are the advantages and limitations of using cyclodextrins in pharmaceutical formulations
3. Explain the theory of sedimentation in suspensions. Discuss the factors that affect the rate of sedimentation and how these factors are used to determine the stability of suspensions.

Short notes

(14x5=70)

4. State and explain Fick's First Law of Diffusion. How is this law applied to describe the process of drug dissolution in a solvent
5. Explain the working principle of falling sphere viscometer. How viscosity is measured by using this viscometer.
6. What is the difference between true density, bulk density, and tapped density of powders. Discuss how each of these densities is determined and their significance in powder characterization.
7. What is the significance of the HLB system in the selection of surfactants for pharmaceutical formulations. How do the HLB values of surfactants influence their emulsifying properties.
8. How does the shape of particles influence the flow properties and compressibility of powders.
9. Explain the working principle of the USP Type 1 (Basket) apparatus for dissolution testing. What types of dosage forms are typically tested using this apparatus.
10. What are the causes of instability in emulsions. Discuss in detail.
11. Differentiate flocculated and deflocculated suspensions.
12. Explain the theories of emulsification.
13. Define order of a reaction. Derive an equation for rate constant and half-life of first order reaction.
14. What is surface free energy. How is it related to the surface tension of a liquid.
15. What is adsorption at solid interfaces. Discuss the types of adsorption and their significance.
16. Explain drug - protein binding on pharmacokinetics of a particular drug.
17. Explain the principle behind the Coulter Counter method for measuring particle volume.
