

Department of Pharmaceutical Technology
Jadavpur University, Kolkata-700032.

M.Pharm (Industrial Pharmacy)/ 1st year/ 1st Sem/Time 3 hrs/ FM 75/ 2024-25
Course: Pharmaceutical Formulation Development Code: MIP102T

Q1. Answer the following questions (Question 1 is Compulsory) 10x2M=20 Marks

- a. Give examples of cationic, anionic and non ionic emulsifiers.
- b. Give examples of antioxidants and humectants used in semisolid dosage forms.
- c. Define GRAS additives.
- d. Define preformulation study.
- e. Write down the physiochemical test for detection of drug-excipient compatibility.
- f. What is the mesh size for USP dissolution apparatus 1?
- g. Which kind of dosage form's release rate is tested by Paddle-over-Disk apparatus?
- h. Which kind of dosage form's release rate is tested by Apparatus 6: Cylinder?
- i. What is temperature fixed for dissolution study of trans-dermal preparation?
- j. How is sink condition maintained in dissolution study?

Long Answer Questions 2 x 10Marks = 20 Marks (Answer 2 out of 3)

- Q2. Give the importance of preformulation study. Explain with example the drug-excipient compatibility. 4+6=10
- Q3. Give the functional roles of additives in dosage forms. Write a note on additives interactions in pharmaceutical products with suitable examples. 6+4=10
- Q4. Discuss in details the formulation additives needed to design liquid dosage form.

Short Answer Questions 7 x 5Marks = 35Marks (Answer 7 out of 9)

- Q5. Name the equation used to know the dissolution behavior of solids in a solvent system and discuss it.
- Q6. How can surface area and particle size influence dissolution rate of a dosage form?
- Q7. Describe the main three procedures used to increase the solubility of weak acids in the stomach.
- Q8. Define IVIVC and name its different levels defined by FDA. Why IVIVC is needed?
- Q9. Discuss on Level A IVIVC.
- Q10. Write down the affect of crystalline vs. amorphous form of drug on its solubility with examples.
- Q11. Name the types of USP-NF and Non-USP-NF Dissolution Apparatus. Relate usage of each apparatus with its drug products.
- Q12. How can Franz diffusion cell be used for dissolution study?
- Q13. Discuss Flow through cell in details for dissolution study.