

# INDIRA UNIVERSITY, PUNE

*SCHOOL OF PHARMACY- M. PHARM (Pharmaceutics)*

*Term End Examination (2025 Pattern) December – 2025 - Semester – I*

---

**Subject Name: Modern Pharmaceutics**  
**Subject Code: MPH103T**

**Max. Marks: 75**  
**Time: 3 Hours**

---

## **Instructions**

- All Questions are Compulsory. Write two sections on separate answersheets
  - Neat diagram must be drawn wherever necessary.
  - Figures to the right indicate full marks.
- 

## **Section : I**

- Q.1 Solve any ONE from the following** **15 Marks**
- Discuss DLVO theory for stability of dispersed systems. Add a note on self micro emulsifying drug delivery system.
  - Explain in detail formulation of small volume parenteral along with its evaluation tests.
- Q.2 Solve any FOUR from the following** **20 Marks**
- What is Validation? Write the advantages of performing validation in pharmaceutical industry
  - Explain factorial design and its applications in Optimization.
  - Describe in detail Sale forecasting.
  - Elaborate process of materials management.
  - Discuss Diffusion and dissolution parameters.
  - Elaborate role HEPA filters in parenteral manufacturing.

## **Section : II**

- Q.3 Solve any ONE from the following** **15 Marks**
- Discuss the energy and force involvement in compression of tablets. Write a note on effect of particle size and moisture content on the tablet compression.
  - Discuss about the validation protocol for tablet compression machine.
- Q.4 Solve any TWO from the following** **15 Marks**
- Discuss the validation protocol for cone blender
  - Explain in detail Formulation & Evaluation of Suspension
  - Discuss in detail analytical techniques used in detecting drug-excipients interactions.
  - Enlist various dissolution models as per USP. Explain any 2 in detail.

**Q.5 Solve any TWO from the following**

**10 Marks**

- a** Describe in detail Similarity (f1) and dissimilarity (f2) factors.
- b** Explain in detail SMEDDS.
- c** Explain briefly about Higuchi's equation & Hixon Crowell dissolution kinetics?
- d** Discuss various test used to check type of emulsion.