

Master of Pharmacy First Year First Semester Examination 2025
Modern Pharmaceutics

Time: Three hours**Full Marks: 75**Answer any **FIVE** questions taking at least **ONE** question from each group**Group A**

1. a) Define response surface plot and contour plot. What are sequential optimization and simultaneous optimization. Write in detail about Simplex Lattice optimization methodology.

3+3+9=15

2. Derive the equation of Hixson Crowell cube root law for verifying the drug release pattern from dosage forms and powders. Write in detail about Higuchi model.

8+7 = 15

Group B

3. a) Discuss the different factors relating to the dissolution rate test apparatus and dissolution medium that will affect the rate of dissolution of drugs. b) Elaborate the Power law equation.

10+5=15

4. What do you mean by brittle fracture? With a neat diagram discuss the different stages of granulation. What is Poissons ratio? Why is it important to determine it? What are abrasion tests?

2+7+2+2+2=15

Group C

5. i. Write the Objectives and policies of current good manufacturing practices

ii. Discuss about Production organization, materials management, handling and transportation, inventory management

iii. Explain URS, DQ, IQ, OQ & P.Q of manufacturing process model. (2+3) +5+5=15

6. What is sales forecasting? How Budget and cost control are determined explain with different models. Validation and calibration of Master plan.

1+7+7=15

Group D

7. What do you mean by pre-formulation study? Write the significances of pre-formulation study. Describe various pre-formulation investigations and their significances. 2+4+9 =15

8. (a) What do you mean by probability? Explain various events of probabilities.

(b) A drug manufacturer claims life span of the drug is 5 years. You have taken 12 sampling with the following values. Test the claim.

Sample No.	Life span	Sample No.	Life span	Sample No.	Life span
1.	5.3 years	5.	5.8 years	9.	5.9 years
2.	5.6 years	6.	5.3 years	10.	6.1 years
3.	6.1 years	7.	6.4 years	11.	4.8 years
4.	4.95 years	8.	5.1 years	12.	5.7 years

(c) Analyze following three groups of data by one-way ANOVA for your statistical interpretation.

Group 1	Group 2	Group 3
10	6	5
8	7	4
7	5	3
9	6	4
6	8	6

1+4+ 6+4 = 15