M. PHARMACY FIRST YEAR, FIRST SEMESTER EXAMINATION, 2024
MODERN PHARMACEUTICS

Time: Three hours   Full Marks: 75

Answer any five questions taking at least one from each group.

Group A

1. Briefly explain about optimization parameters. Write in detail about sequential optimization methodology.   5+10=15

2. Define and explain area under curve, elimination rate constant, half-life, apparent volume of distribution, and clearance. What are elastic deformation and plastic deformation? Explain types of material on the basis of Heckel plot. Define and explain osmosis, reverse osmosis, dialysis, and ultrafiltration.   5+2+4+4=15

Group B

3. Discuss about the various effects of compressional forces on a bed of powder. (15)

4. What is the role of moisture during the granulation process? Discuss the stages of granulation. How can you measure the strength of granules? Define coefficient of lubrication. 4+6+2+3=15

Group C

5. Define Validation according to ICH & WHO. Write the objectives of validation. Classify types of validation. 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. Write objectives and policies of cGMP.   2+8+2+3=15

Group D

7. Give the importance of "Selected area electron diffraction pattern (SAEDP)" study to determine crystal structures. Write its importance. How is the study conducted? Describe the use of FTIR spectroscopy in the determination of drug excipient interaction. How can DSC help in the determination of purity of a drug substance?   4+2+2+4+3= 15

8. (a) What is a decision tree? What is one-way ANOVA? Give an example. What is post-hoc test? When is it done?

(b) Following is the table of subject, score and group.

Subject	Score	Group
1	23	1
2	25	1
3	18	2
4	29	2
5	19	1

Determine Sum of squares within (SSW).   2+1+2+2+2+6 = 15