PAPER ID-310107

Roll No:

MPHARM
(SEM I) THEORY EXAMINATION 2025-26
MODERN PHARMACEUTICS

TIME: 3 HRS   M.MARKS: 75

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt all questions in brief.**   10 x 2 = 20

a.	Define drug–excipient interaction.
b.	Mention any two methods used for studying stability kinetics.
c.	What is SMEDDS?
d.	Give two physiological considerations for parenteral dosage forms.
e.	Define optimization in pharmaceutical formulation.
f.	Write any two advantages of factorial design.
g.	Define validation master plan (VMP).
h.	What is the objective of cGMP?
i.	Define compression and compaction.
j.	What is the significance of a similarity factor (f2) in dissolution comparison?

SECTION B

2. **Attempt any two parts of the following:**   2 x 10 = 20

a.	Explain in detail the theories of dispersion and discuss the preparation and stability of emulsions and suspensions.
b.	Describe the various types of pharmaceutical validation. Explain in detail DQ, IQ, OQ and PQ with suitable examples.
c.	Discuss production and material management under cGMP. Explain inventory control and budget planning techniques used in industries.

SECTION C

3. **Attempt any five parts of the following:**   7 x 5 = 35

a.	Explain different methods used to evaluate drug–excipient interactions.
b.	Describe response surface methodology (RSM) and its application in pharmaceutical optimization.
c.	Write a note on ICH and WHO guidelines related to equipment calibration and validation.
d.	Discuss the physics of tablet compression and factors affecting compaction behaviour.
e.	Explain Heckel plot and its significance in compression analysis.
f.	Differentiate between diffusion-controlled and dissolution-controlled drug release mechanisms.
g.	Explain ANOVA and describe its application in pharmaceutical formulation studies.