PAPER ID-310072

Roll No: | | | | | | | | | | | | | |

BPHARM
(SEM VI) THEORY EXAMINATION 2025-26
BIOPHARMACEUTICS AND PHARMACOKINETICS – THEORY

TIME: 3 HRS **M.MARKS: 75**

Time: 3 Hours ***Total 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 Biopharmaceutics and draw schematic representation of the process involved in drug therapeutics.
b.	Write the name of six specialized physiological barriers to distribution of drug.
c.	Compare absolute bioavailability with relative bioavailability.
d.	Define clearance. What are its units?
e.	Discuss central and peripheral compartment models.
f.	Explain the role of biopharmaceutics in Formulation Development.
g.	What is nonlinear pharmacokinetics?
h.	Define loading and maintenance dose.
i.	Explain the role of drug dissolution in absorption of drug?
j.	How will you define steady state drug levels?

SECTION B

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

a.	Define bioavailability. What are the objectives of bioavailability studies? How bioavailability can be measured using urine data.
b.	What is the various mechanism of drug absorption? Explain in detail using different diagrams.
c.	Describe Michaelis-Menten method of estimating pharmacokinetic parameters.

SECTION C

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

a.	Calculate the various pharmacokinetics parameters after drug administration by one compartment open model IV Infusion.
b.	Discuss about IVIVC.
c.	Discuss the causes of non-linearity in pharmacokinetics.
d.	Write a detailed note on significance and kinetics of protein binding.
e.	Describe the various methods aimed at enhancing bioavailability of drug from its doses form.
f.	Discuss in detail two-compartment open model for a drug administered as IV Bolus. Give the schematic representation, graphs and equations for the same.
g.	Discuss determination of K_E from urinary excretion data.