

**B PHARM**  
**(SEM VI) THEORY EXAMINATION 2022-23**  
**BIOPHARMACEUTICS AND PHARMACOKINETICS**

**Time: 3 Hours**

**Total Marks: 75**

**Note:** Attempt all Sections.

**SECTION A**

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

- a. Write the name the various barriers for drug distribution.
- b. Define apparent volume of distribution and protein binding of drug.
- c. Define renal clearance. Give the name of non-renal routes of drug excretion of drugs.
- d. Define bio-availability and bio-equivalence.
- e. Write the difference between absolute with relative bioavailability.
- f. Give the advantages of physiological models.
- g. Define total clearance.
- h. What is the significance of maintaining steady state drug levels in pharmacokinetics?
- i. Define non-linearity.
- j. Give Michaelis-Menten equation.

**SECTION B**

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

- a. Enlist various factors influencing GI absorption of a drug from its dosage form and explain physicochemical factors affecting drug absorption in detail.
- b. Discuss in detail two-compartment open model for a drug administered as IV Bolus. Give the schematic representation, graphs and equations for the same.
- c. What is the difference between linear and non-linear pharmacokinetic? List out the reasons for non-linearity in pharmacokinetic studies.

**SECTION C**

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

- a. Discuss in detail the various pharmaceutical factors affecting drug absorption.
- b. Explain the following terms- Clearance, Total body clearance, Hepatic clearance and Renal clearance.
- c. Describe the method to calculate absorption rate constant for one compartment open model extra vascular first order kinetics.
- d. What is the reason behind initial rapid decline and terminal slow decline of the conc. of drug in the central compartment? Discuss the reason.
- e. How will you affect dosage adjustment in renal failure?
- f. Describe the various methods aimed at enhancing bioavailability of drug from its dosage form.
- g. Describe the kinetics of capacity-limited or saturable processes of non-linearity.