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

**Time: 3 Hours**

**Total Marks: 75**

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

**SECTION A**

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1. Attempt all questions in brief.

10 x 2 = 20

- a. Explain renal clearance with formula.
- b. Explain central and peripheral compartment model.
- c. What is the significance of apparent volume of distribution?
- d. Define absolute and relative bioavailability?
- e. Explain the role of biopharmaceutics in formulation development.
- f. What is nonlinear pharmacokinetics?
- g. Define loading and maintenance dose.
- h. How is renal dose of the drug adjusted in renal failure?
- i. What is the purpose of Latin square cross over design?
- j. Explain the role of drug dissolution in absorption of drug.

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**SECTION B**

2. Attempt any two parts of the following:

2 x 10 = 20

- a. Calculate the various pharmacokinetic parameters after drug administration by intravenous bolus injection.
- b. What is the various mechanism of drug absorption? Explain in detail using different diagrams.
- c. Define bioavailability. What are the objectives of bioavailability studies? How bioavailability can be measured using urine data.

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**SECTION C**

3. Attempt any five parts of the following:

7 x 5 = 35

- a. Write a detailed note on significance and kinetics of protein binding.
- b. Discuss the causes of non-linearity in pharmacokinetics.
- c. Illustrate Wagner nelson method using relevant graphs and equations.