

Q.P. Code: 405326

Reg. no.:

**Fourth Year Pharm D Degree Regular/Supplementary Examinations
November 2025**

Biopharmaceutics & Pharmacokinetics

Time: 3 Hours

Total Marks: 70

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

Essays:

(3x10=30)

1. Discuss the two-compartment open model, including its application in pharmacokinetics and how it differs from the one-compartment model.
2. Analyze the pharmacokinetic principles behind repetitive intravenous injections and their effect on drug accumulation in a one-compartment open model.
3. Discuss the causes and implications of nonlinear pharmacokinetics, including the Michaelis-Menten method for estimating pharmacokinetic parameters.

Short notes:

(8x5=40)

4. What are the pharmacokinetic implications of IV bolus versus oral administration.
5. Describe the significance of drug levels in the blood for therapeutic monitoring.
6. Explain the concept of elimination half-life concerning intravenous bolus dosing.
7. Describe the concept of the distribution phase in multicompartment models.
8. Explain the significance of the steady-state concentration in pharmacokinetics.
9. Describe the physiological pharmacokinetic model and its relevance.
10. What assumptions are made in a one-compartment open model.
11. Explain the significance of assessing bioequivalence in drug development.

CORRECTION / NO-CORRECTION FILE
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QPCODE: 405326

Dated: 26-11-2025

QUESTION NO. 2

REPLACED WITH “EXPLAIN PROTEIN BINDING AND ITS SIGNIFICANCE ON DRUG DISTRIBUTION AND DRUG ELIMINATION.”

QUESTION NO. 5

REPLACED WITH “DEFINE NON COMPARTMENTAL PHARMACOKINETICS AND ABOUT STATISTICAL MOVEMENT THEORY.”

Extra time of 10 minutes allowed.

Corrections/Modifications/Replacement of Questions if any shall be made available to all students. Take the print out of the Correction File in such cases and distribute to all students.

(Sd/-)

CONTROLLER OF EXAMINATIONS