Code No.	Symbol Number:	Invigilator's Sign:	Superintendent's Sign:
	Symbol No. in Words:		
Faculty: M Allied Hea	Medicine and Level: Bachelor Alth Sciences	Yea	ar/Part: II/I
Program: Bachelor of Pharmacy Subject: BP305 Biopharmaceutics &Pharmacokinetics		Level: Bache Time: 3 Hou	lor F.M.: 50 Irs P.M.: 25
i Ii Iii	Answers should be given by filling Rough can be done in the main ans Maximum time of 20 minutes within	the Objective Answer Sheet. wer sheet the total time is given for this g	roup.
	Group A (Multiple Choice Questions)		[10×1=10]
1.	Drug transfer rate from one parta. First orderb. Mixed order	to another at a given point i	n the body follows: c. Second order d. Zero order
2.	The volume of blood (in lit.) of a a. 6	n average adult is approx c.	42
3.	How many sites are identified in a. 1 b. 2 c. 3	albumin for drug binding? d. 4	
4.	How many times (minimum) a for a. More than twice b. once Which of the following is not use	ormulation is administered i c. d. ed in bioavailability studies	in crossover design? thrice Twice ?
	a. Blood drug level analysisb. Toxic response	c. d.	Clinical response Urine drug level analysis
6.	Method of residuals produces go a. 1-2 b. 3-4	od results if Ka/Ke is betwe c. d.	2-3 0-1
7.	In constant rate infusion, Css doe a. Infusion rate b. Infusion time	es not depend on: c. d.	Plasma elimination rate constant Volume of distribution
8.	Drug absorption is termed as disea. Initially linear and then after constantb. Initially linear and then after	solution rate limited. It mea remains c. d. decreases	ns that the drug is absorbed; Initially linear and then after increases Remain linear throughout
9.	Double reciprocal plot of Michaea. Hanes-Woolf plotb. Lineweaver-Burke plot	elis-Menten equation is also c. d.	called; Scatchard plot Woolf-Augustinesson-Hofstee plot
10.	Activated charcoal is added as an a. Pharmaceuticalb. Pharmacokinetic	n antidote in poisoning. Wh c. d.	at is the type of interaction? Pharmacological Pharmacodynamic

-	
A B C D	6. A B C D
A B C D	7. A B C D
A B C D	8. A B C D
A B C D	9. A B C D
A B C D	10. A B C D
	A B C D A B C D A B C D A B C D A B C D A B C D A B C D

Multiple Choice Questions' Answer Sheet

MANMOHAN TECHNICAL UNIVERSITY

Office of the Controller of Examinations

Budiganga- 4, Morang, Koshi Province Nepal

Faculty: Medicine and Allied Health Sciences		Year/Part: II/I
Program: Bachelor of Pharmacy	Level: Bachelor	F.M.: 50
Subject: Biopharmaceutics and Pharmacokinetics	Time: 3 Hours	P.M.: 25

- ✓ Group A contains Multiple Choice Questions of 5 marks.
- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

Group B (Problem-Based Question)

- 1. A drug follows a one-compartment model with first-order elimination. After an IV bolus dose of 500 mg, the drug's plasma concentration is found to be 50 µg/mL at 1 hour and 12.5 µg/mL at 4 hours' post-administration.
 - **a.** Calculate the elimination rate constant (k) and the half-life $(t\frac{1}{2})$ of the drug. [5]
 - **b.** Determine the volume of distribution (Vd) and clearance (Cl) of the drug. [5]

Group C (Long Answer Questions: Attempt Any Four)

- 1.Explain how the drug's plasma concentration changes over time in a one-compartment model, and describe the key assumptions of this model.
- 2.Explain the Noyes-Whitney equation and its significance in predicting the dissolution rate of a drug.
- 3.Describe different methods to assess bioavailability.
- 4.A drug was administered orally. Blood samples were taken at various time intervals, and the following plasma level time profile was obtained.

Time (Hr)	Concentration
	(mg/ml)
0.5	2.1
1	5.5
1.5	4.8
2	4.0
4	2.9
8	1.2

Using the trapezoidal method, determine the total area under the curve.

5. Calculate the dose of a drug (with normal dose 300 mg) for 65 years lady weighting 50 kg and her serum creatinine level was found to be 2.0 mg/dl.

Group D (Write Short Notes: Any Five)

- 1. Discuss dosing in renal patients.
- 2. What is statistical moment theory?
- 3. What are the different factors causing nonlinear pharmacokinetics?
- 4. If the steady-state concentration (Css) of a drug during IV infusion is 5 mg/L and the infusion rate (R) is 25 mg/hour, calculate the drug's clearance (Cl).
- 5. What is steady-state concentration (Css), and why is it important in chronic drug therapy?
- 6. Mention different pharmacokinetic drug interaction with suitable examples.

[1×10=10]

[4×5=20]

[5×2=10]