Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM - SEMESTER– 6 EXAMINATION – SUMMER -2023

Subject Code: BP604TP Date: 27/06/2023

Subject Name: Biopharmaceutics and Pharmacokintetics

Time:10.30 a.m. to 1.30 p.m. Total Marks: 80

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define: Biopharmaceutics, Pharmacokinetics, Mean residence time, Non renal excretion, Therapeutic window, Biotransformation.	**06**
	(b)	Enumerate the various factors influencing GI absorption of drug. Explain particle size and surface area of the drug.	**05**
	(c)	Explain the dissolution apparatus type I and type II as per USP	**05**
Q.2	**(a)**	Enlist the various mechanism of drug transport. Explain Passive diffusion.	**06**
	(b)	Discuss the kinetics of protein binding.	**05**
	(c)	Differentiate plasma-protein drug binding and tissue-drug binding	**05**
Q.3	**(a)**	Why glucuronidation is the common and most important phase II reaction? Explain it.	**06**
	(b)	Enlist the non renal routes of drug excretion and explain mammary excretion.	**05**
	(c)	Enlist the methods for enhancement of bioavailability. Differentiate Absolute bioavailability & Relative bioavailability	**05**
Q.4	**(a)**	Define bioequivalence. Explain Latin crossover design in BE studies.	**06**
	(b)	Discuss Wagner Nelson Method.	**05**
	(c)	Write a note on volume of distribution.	**05**
Q.5	**(a)**	Discuss plasma drug concentration-time profile curve in detail.	**06**
	(b)	Explain the terms Clearance, Total body clearance, Hepatic clearance and Renal clearance	**05**
	(c)	Describe two compartment open model for IV bolus administration in brief.	**05**
Q. 6	**(a)**	Describe the methods of residuals for one compartment kinetics.	**06**
	(b)	Enumerate the various pharmacokinetic models and explain mammillary model.	**05**
	(c)	Give difference between linear & non linear pharmacokinetics	**05**
Q.7	**(a)**	Explain Michaelis Menten equation in detail.	**06**
	(b)	Discuss in brief about loading dose and maintenance dose.	**05**
	(c)	Write causes of non linearity.	**05**

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