Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. SEMESTER– VI EXAMINATION – WINTER -2021

Subject Code: BP604TT **Date:01/12/2021**

Subject Name: Biopharmaceutics and Pharmacokinetics

Time: 02:30pm to 05:30pm **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)**	Discuss the kinetics of protein binding.	**06**
	(b)	Enlist various factors responsible for protein binding and explain any one in detail.	**05**
	(c)	Explain binding of drug to blood components giving suitable examples	**05**
Q.2	**(a)**	Comment on passive diffusion is one of the important mechanisms of drug absorption.	**06**
	(b)	Enlist various factors influencing GI absorption of a drug from its dosage form and explain physicochemical factors affecting drug absorption in detail.	**05**
	(c)	Discuss the absorption of drugs from non-oral extra vascular routes	**05**
Q.3	**(a)**	Discuss various methods used for the measurement of bioavailability	**06**
	(b)	What are the problems faced in formulation of BCS Class II drugs? Discuss suitable strategies to overcome them.	**05**
	(c)	Define the following terms first pass metabolism, active diffusion, bioavailability and bioequivalence	**05**
Q.4	**(a)**	Discuss USP dissolution apparatus with specific uses	**06**
	(b)	Explain In-vitro - In-vivo correlations	**05**
	(c)	Describe Latin Square cross over design for bioequivalence study	**05**
Q.5	**(a)**	Write a note on renal excretion of drugs	**06**
	(b)	Define biotransformation and discuss in brief phase I and Phase II biotransformation	**05**
	(c)	Explain the following terms Clearance, Total body clearance, Hepatic clearance and Renal clearance	**05**
Q. 6	**(a)**	Explain the method of residuals for the calculation of absorption rate constant on administration of drug by Extra vascular route.	**06**
	(b)	Write Note on Non compartmental Analysis	**05**
	(c)	Write a note on Wagner Nelson Method	**05**
Q.7	**(a)**	What process of drug ADME are known to show non linearity? Explain giving suitable examples.	**06**
	(b)	Explain Michaelis Menten equation for capacity limited process	**05**
	(c)	What are pharmacokinetic models? Explain in detail compartment models	**05**

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