

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm - SEMESTER- VI • EXAMINATION – SUMMER -2021

Subject Code: BP604TT**Date: 09/08/2021****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.

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| Q.1 | (a) Enlist various mechanism of drug transport. Write a detailed note on active transport process. | 06 |
| | (b) Describe the Pharmaceutical factors affecting drug absorption from GI tract. | 05 |
| | (c) Write a short note on kinetics of protein-drug binding. | 05 |
| Q.2 | (a) Define clearance and write about renal clearance in detail. | 06 |
| | (b) Discuss tissue permeability of drug distribution. | 05 |
| | (c) Discuss the influence of BBB and CSF barriers on distribution of drugs. | 05 |
| Q.3 | (a) Differentiate absolute and relative bioavailability. Discuss the pharmacokinetic methods for the bioavailability measurement. | 06 |
| | (b) Explain various methods used for enhancement of bioavailability. | 05 |
| | (c) Define bioequivalence. Explain Latin crossover design in BE studies. | 05 |
| Q.4 | (a) What is IVIVC? Write a note on Levels of IVIVC. | 06 |
| | (b) Explain the dissolution apparatus type I and type II as per USP. | 05 |
| | (c) Explain Wagner nelson method in detail. | 05 |
| Q.5 | (a) Describe the method of residuals for determination of absorption rate constant | 06 |
| | (b) Explain Catenary and Mammillary compartment models in detail. | 05 |
| | (c) Describe assumption to be considered in developing equation for two compartment model with suitable diagram. | 05 |
| Q. 6 | (a) Compare and contrast excretion rate method and Sigma-Minus method. Explain Sigma-Minus method in detail. | 06 |
| | (b) Discuss about significance of different volume of distribution in two compartment model based on IV bolus administration. | 05 |
| | (c) Enlist the causes for non-linearity. Explain Michaelis Menton Equation for the same. | 05 |
| Q.7 | (a) Discuss the regulatory requirements for conduction of bioequivalence study. | 06 |
| | (b) Write a short note on Plasma Protein Binding. | 05 |
| | (c) <i>Hydrophilicity and lipophylicity property of a drug decide its absorption.</i> Comment with justification. | 05 |
