

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.

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| 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 |
