

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. – SEMESTER VI • EXAMINATION – SUMMER -2022**

**Subject Code:BP604TT****Date:09/06/2022****Subject Name: Biopharmaceutics and Pharmacokinetics****Time: 10:30AM TO 01:30PM****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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|-------------|--|-----------|
| <b>Q.1</b>  | (a) Discuss the physicochemical factors affecting the GI absorption of drugs.  | <b>06</b> |
|             | (b) Explain barriers to drug distribution.   | <b>05</b> |
|             | (c) Describe Noyes-Whitney equation.   | <b>05</b> |
| <b>Q.2</b>  | (a) Discuss the clinical significance of the Protein binding of drugs.   | <b>06</b> |
|             | (b) Write note on physicochemical properties influencing tissue permeability of drugs.                                 | <b>05</b> |
|             | (c) Write short notes on BCS.  | <b>05</b> |
| <b>Q.3</b>  | (a) Discuss the importance of in vitro and in vivo correlation in the bioavailability studies.                         | <b>06</b> |
|             | (b) Discuss the significance of non renal excretion of drugs.  | <b>05</b> |
|             | (c) Write short notes on Pharmaceutical equivalence.   | <b>05</b> |
| <b>Q.4</b>  | (a) Explain method of residuals to calculate absorption rate constant of a drug following one compartment kinetics.    | <b>06</b> |
|             | (b) Discuss pharmacokinetic variables in disease states.   | <b>05</b> |
|             | (c) Write short notes on Volume of distribution.   | <b>05</b> |
| <b>Q.5</b>  | (a) List out the various pharmacokinetic parameters and define.  | <b>06</b> |
|             | (b) Write concept of Loading dose and Maintenance dose.  | <b>05</b> |
|             | (c) Write short notes on Phase I reactions.  | <b>05</b> |
| <b>Q. 6</b> | (a) What are the causes of Non linearity? How will you determine the non linearity?                                    | <b>06</b> |
|             | (b) Explain Michaelis Menten equation.   | <b>05</b> |
|             | (c) How Blood brain barrier influence pharmacokinetic pattern of drug?   | <b>05</b> |
| <b>Q.7</b>  | (a) Give the criteria for obtaining valid urinary excretion data.  | <b>06</b> |
|             | (b) Explain sigma minus method to calculate $K_e$ for a drug given by IV bolus by following open compartment kinetics. | <b>05</b> |
|             | (c) Discuss the various factors affecting distribution of drugs.   | <b>05</b> |

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