

GUJARAT TECHNOLOGICAL UNIVERSITY
PHARM.D. 4th YEAR / PHARM.D (PB) 1ST YEAR -EXAMINATION – WINTER -2022

Subject Code: 848805/818905**Date: 31/01/2023****Subject Name: Biopharmaceutics and Pharmacokinetics****Time: 02:30 PM TO 05:30 PM****Total Marks: 70****Instructions:**

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

- Q.1** (a) Define drug absorption. Discuss the various factors influencing GI absorption of a drug. **06**
- (b) Explain briefly about different mechanism of drug Absorption. **04**
- (c) What are the physiological barriers of distribution? Add a note on BBB. **04**
- Q.2** (a) Explain briefly Michaelis – Menton method for estimation of Km and Vmax. **06**
- (b) Explain Wagner Nelson method for computing absorption rate constant **04**
- (c) Write a note on methods to enhance the bioavailability through enhancement of dissolution rate. **04**
- Q.3** (a) Explain briefly the following terms: **06**
- Mean residence time
 - Hepatic clearance
 - Renal clearance.
- (b) Write note on Apparent volume of distribution and its significance. **04**
- (c) Write note on Catenary model. **04**
- Q.4** (a) Discuss causes of non-linearity with example. **06**
- (b) How to determine bio-availability through urinary extraction studies? **04**
- (c) Discuss Latin square design in Bioequivalent study. **04**
- Q.5** (a) Define Bioavailability. Explain various methods used for determination of Bioavailability. **06**
- (b) What are the factors affecting drug dissolution and dissolution rate. Explain them. **04**
- (c) Differentiate active transport and passive diffusion. **04**
- Q. 6** (a) Explain briefly the two compartmental open model extra vascular administrations. **06**
- (b) Write the merits and demerits of non compartmental pharmacokinetics. **04**
- (c) Describe open one compartment model IV bolus administration. **04**
- Q.7** (a) Discuss protocol bioequivalence study. **06**
- (b) Write note on Approaches for dosage regimen. **04**
- (c) Write note on Significance of protein binding. **04**
