

GUJARAT TECHNOLOGICAL UNIVERSITY**B.PHARM - SEMESTER- 6 EXAMINATION – SUMMER-2024****Subject Code:BP604TT****Date: 14/05/2024****Subject Name: Biopharmaceutics and Pharmacokinetics****Time: 10.30 a.m. to 1.30 p.m.****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) Describe USP dissolution apparatus with their application. **06**
(b) Explain physicochemical factors affecting GI absorption of drug. **05**
(c) Write a note on Passive diffusion. **05**
- Q.2** (a) Define: Pharmacokinetics, Clearance, Peak plasma concentration, Time of peak concentration, Area under curve, Therapeutic index. **06**
(b) Enlist extravascular routes for drug absorption. Discuss Topical route of administration. **05**
(c) Discuss physiological barriers for distribution of drugs. **05**
- Q.3** (a) Discuss significance of protein binding of drugs. **06**
(b) Discuss Wagner-Nelson method for estimation of K_a . **05**
(c) Enumerate different method for measurement of bioavailability. Discuss Pharmacokinetic methods for measurement of bioavailability. **05**
- Q.4** (a) Differentiate: compartment model and physiological model. **06**
(b) Describe factors affecting drug protein binding. **05**
(c) Write a note on Loading and maintenance dose. **05**
- Q.5** (a) Explain Michaelis-Menten Equation. **06**
(b) Discuss factors affecting renal clearance of drug. **05**
(c) Write a note on In-vitro - In-vivo correlations. **05**
- Q. 6** (a) Define bioequivalence. Describe Latin square design for bioequivalence study. **06**
(b) Discuss Phase I biotransformation process. **05**
(c) Discuss causes of non-linearity with examples. **05**
- Q.7** (a) Explain methods for solubility enhancement of the drug. **06**
(b) Write note on Non compartmental Analysis. **05**
(c) Discuss open compartment model IV bolus administration **05**
