Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – VI EXAMINATION – WINTER-2025

Subject Code: BP604TT **Date:24-11-2025**

Subject Name: Biopharmaceutics and Pharmacokintetics

Time: 02:30 PM TO 05:30 PM **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. Explain briefly what is compartmental model. Explain Catenary and Mammillary compartment models in detail. **(6)**

B. Write a brief note on two compartment open model. **(5)**

C. Define the terms. (a) Biopharmaceutics (b) Loading Dose **(5)**

Q.2

A. Explain briefly Latin Square Cross Over Design for Bioequivalence. **(6)**

B. Write a brief note on IV infusion one compartment open model. **(5)**

C. Write a note on PBPK models. **(5)**

Q.3

A. Introduce the concept of IVIVC. Discuss BCS based biowaivers in IVIVC briefly. **(6)**

B. Write a brief note one compartment open model. **(5)**

C. Write a note on Wagner Nelson Method. **(5)**

Q.4

A. Explain the factors causing non linearity in pharmacokinetics in drugs. **(6)**

B. Write a note on advantages & disadvantages of Non-Compartmental Analysis. **(5)**

C. Define the terms. (a) IV Bolus (b) Maintenance Dose **(5)**

Q.5

A. Describe the method of residuals for determination of absorption rate constant. **(6)**

B. Write a brief note on causes for Non-Linearity. **(5)**

C. Explain indirect methods for determination of Bioavailability. **(5)**

Q.6

A. Explain briefly what is Accumulation Index (R_{ac}). Explain with diagram. **(6)**

B. Write a brief note on Urinary Excretion Data Method. **(5)**

C. Explain the concept of Dose Size & Dose Frequency. **(5)**

Q.7

A. Explain Plasma Level Time Profile Method for determination of Bioavailability. **(6)**

B. Write about methods to improve Bioavailability of drugs. **(5)**

C. Explain briefly about Protein Binding. **(5)**

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