

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm SEMESTER VII EXAMINATION- SUMMER-2022

Subject code: 2270001**Date: 01/06/2022****Subject Name: Dosage Form Design-I****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.**

- Q.1** (a) Explain preformulation studies. What is partition coefficient? What is its significance in preformulation? **06**
- (b) What is photolysis? Describe the means to prevent photodegradation of drugs. **05**
- (c) What is prodrug? Describe the prodrug design approach for drug targeting with examples. **05**
- Q.2** (a) Enumerate additives used in tablets. Describe various mechanisms of disintegration. **06**
- (b) What are polymers? Describe in details about biodegradable polymers. **05**
- (c) Describe the polymers used for achieving modified drug release with examples. **05**
- Q.3** (a) What is formulation stability? Discuss the different climatic zones for stability testing. **06**
- (b) Describe matrixing and bracketing in stability study. **05**
- (c) What are overages? In which formulations are they allowed? How are they calculated? **05**
- Q.4** (a) What is drug transport? Describe active transport of drug through biomembrane. **06**
- (b) Describe the pH Partition theory for drug absorption. **05**
- (c) What is protein drug binding? Describe displacement drug interactions in protein binding. **05**
- Q.5** (a) What is suprabioavailability? Describe AUC, C_{max} and T_{max} as bioavailability measures. **06**
- (b) Describe Latin Square cross over design for bioequivalence study. **05**
- (c) Discuss the regulatory requirements for conduction of bioequivalence studies. **05**
- Q.6** (a) What is BCS? What is its significance in dosage form design? **06**
- (b) What is biorelevant dissolution media? Name the USP dissolution apparatus with the use. **05**
- (c) What is dissolution efficiency? Describe dissolution data comparison based on f₁ and f₂. **05**
- Q.7** (a) What is sink condition? Describe methods to achieve *in vitro* sink condition. **06**
- (b) What is BBB? Describe approaches used to target polar drugs to brain. **05**
- (c) What is importance of protein drug binding? Discuss tissue binding of drugs. **05**
