

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 7- EXAMINATION –WINTER - 2018

Subject Code: 2270001**Date: 15/11/2018****Subject Name: Dosage form Design I****Time: 10:30 AM TO 01:30 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) Define Preformulation studies. Explain steps involved in Preformulation studies. **06**
 - (b) How polymorphism and crystallinity influence performance of drug product. Explain in brief methods to identify polymorphism and crystallinity. **05**
 - (c) Define diluents. Classify Diluents. Write a note on versatility of lactose as diluents in oral solid dosage forms. **05**
- Q.2**
- (a) Define disintegrating agent. Give examples of commonly used disintegrating agents. Write mechanism of disintegration. **06**
 - (b) What do you mean by polymer? Write a note on polymers used in different dosage forms with examples. **05**
 - (c) Write short note on passive diffusion. **05**
- Q.3**
- (a) Write a note on Prodrug. Discuss Prodrug approaches. **06**
 - (b) Write a short note on Matrixing and Bracketing study design. **05**
 - (c) Define bioequivalence. Write a short note on Latin-square cross-over design. **05**
- Q.4**
- (a) Write a note on factors affecting on stability of pharmaceutical dosage form. **06**
 - (b) Discuss in detail volume of distribution. **05**
 - (c) How purity of API and drug degradation are studied in product development? **05**
- Q.5**
- (a) Discuss Noyes Whitney equation for rate of dissolution. Discuss USP type I apparatus for dissolution. **06**
 - (b) Define overages and discuss methods to determine overages. **05**
 - (c) Discuss remedies to overcome degradation due to hydrolysis and oxidation in pharmaceutical dosage form. **05**
- Q. 6**
- (a) Define biopharmaceutics. Enlist various mechanisms of drug transport. Discuss active transport in detail. **06**
 - (b) Draw a well labelled diagram of cell membrane and Discuss Endocytosis. **05**
 - (c) Define relative and absolute bioavailability. Discuss plasma level time studies for measurement of bioavailability. **05**
- Q.7**
- (a) Write a short note on "Plasma Protein Binding" **06**
 - (b) Discuss tissue permeability of drug in distribution. **05**
 - (c) Write a note on drug clearance. **05**
