

GUJARAT TECHNOLOGICAL UNIVERSITY**B.PHARM – SEMESTER – 8- EXAMINATION –WINTER - 2018****Subject Code: 280001****Date: 15/11/2018****Subject Name: Dosage Form Design- II****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) Discuss in brief the Hixon and Crowell's cube root dissolution equation for controlled release dosage forms. **06**
- (b) Explain biological and physicochemical factors, which are responsible for designing oral sustained release drug delivery system. **05**
- (c) Explain loading dose and maintenance dose used in controlled release formulation. **05**
- Q.2 (a) Explain lag time, burst effect and reservoir systems with respect to control release formulations. **06**
- (b) Explain apparent volume of distribution. State its significance. **05**
- (c) Describe preparation and evaluation of parenteral suspension. **05**
- Q.3 (a) What is non-linear pharmacokinetic? Describe the equation that governs the non-linear Pharmacokinetics. **06**
- (b) Write a note on osmotic ocular inserts. Mention the components of each part. **05**
- (c) Give an account of approaches for designing of gastro retentive dosage forms. **05**
- Q.4 (a) Discuss one compartment open model - i.v. infusion model and discuss the effect of loading i.v. injection dose. Describe the derivation of various pharmacokinetic parameters for the model. **06**
- (b) Classify liposomes? Why are considered versatile carriers for parenteral drug delivery. **05**
- (c) Explain the significance of renal clearance and dosage regimen. **05**
- Q.5 (a) What properties are required for the drug to be a candidate for transdermal drug delivery system? Explain formulation of transdermal drug delivery system. **06**
- (b) Define clinical pharmacokinetics and explain dosage adjustment in patients with renal failure. **05**
- (c) Write a note on Hydrogel. **05**
- Q.6 (a) Define 'Drug interaction'. Discuss the factors that contribute to drug interaction. Give suitable examples. **06**
- (b) Write a note on: Wagner-Nelson method used to estimate absorption rate constant (k_a) **05**
- (c) Define clearance, total body clearance and organ clearance. What is extraction ratio? **05**
- Q.7 (a) Explain pharmacokinetic and pharmacodynamics parameters, which are considered in design of, modified drug delivery systems? **06**
- (b) Enlist different approaches for formulation of colon targeted drug delivery system and explain any one of them. **05**
- (c) Write a note on evaluation parameters of microsphere. **05**