Seat No.: _____ Enrolment No._____

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 deliverysystem? 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 (ka)	**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**