Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Ph. - SEMESTER– VIII EXAMINATION – WINTER -2020

Subject Code: 2280001 **Date: 01/01/2021**

Subject Name: Dosage Form Design - II

Time: 02:00PM TO 04:00PM **Total Marks: 54**

Instructions:

1. **Attempt any THREE questions from Q-1 to Q-6.**
2. **Q.7 is compulsory to attempt.**
3. **Make suitable assumptions wherever necessary.**
4. **Figures to the right indicate full marks.**

Q.1	**(a)**	Write a note on pharmacokinetic drug interactions.	**06**
	(b)	What is clinical pharmacokinetics? Explain dosage adjustment in patients with hepatic failure.	**05**
	(c)	Define pharmacokinetics. Explain scope and significance of plasma drug concentration measurement.	**05**
Q.2	**(a)**	What are pharmacokinetic models? Explain first order absorption rate constant using Wagner-Nelson methods.	**06**
	(b)	Write a note on determination of pharmacokinetic parameters from plasma after oral administration of drug.	**05**
	(c)	Describe method of residuals for determination of absorption rate constant.	**05**
Q.3	**(a)**	Explain formulation and evaluation of a transdermal patch.	**06**
	(b)	Write a detail note osmotic pressure-controlled system.	**05**
	(c)	Explain fabrication of parenteral drug delivery system with special reference to parenteral suspension and emulsion.	**05**
Q.4	**(a)**	Explain rationale for Gastro Retentive Drug Delivery. Enlist different approaches of Gastro Retentive Drug Delivery System.	**06**
	(b)	Define Colon Targeted Drug Delivery Systems. Describe Advantages and limitations of it.	**05**
	(c)	Mention the parameters and methods used for evaluation of nanoparticles.	**05**
Q.5	**(a)**	Write a note on factors influencing design and performance of modified drug delivery systems.	**06**
	(b)	How can a loading and maintenance dose be estimated?	**05**
	(c)	Explain Ocusert® and Lacrisert®	**05**
Q. 6	**(a)**	Explain merits and demerits of controlled drug delivery systems.	**06**
	(b)	Explain effect of porosity and tortuosity for dissolution-controlled system.	**05**
	(c)	Write a note on biological and physicochemical factors affecting design of oral sustained release systems.	**05**
Q.7	**(a)**	Explain hydrophilic matrix system with suitable example and drug release mechanism from it.	**06**
		OR	
	(a)	Discuss apparent volume of distribution. Write an equation to calculate it.	**06**
		OR	
	(a)	Write a note on non-linear pharmacokinetics using Michaelis-Menten equation.	**06**

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