Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – III • EXAMINATION – WINTER 2013

Subject Code: 930102 Date: 11-12-2013

Subject Name: Novel Drug Delivery System Part-II

Time: 10.30 am - 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)**	What is polymer? How are they characterized from other class of excipient? Classify them on the basis of their pharmaceutical analysis.	**06**
	(b)	Two major classes of polymers are used in NDDS. Compare and comment giving suitable examples based on their IIG status and impurity profile.	**05**
	(c)	Write a note on biodegradation of polymers.	**05**
Q.2	**(a)**	What is the difference between conventional dosage form and NDDS? How an administration device become part of it?	**06**
	(b)	Define " Prodrug" Write a note on application of it in therapeutics giving suitable example.	**05**
	(c)	Write a note on any one approach to develop prodrug.	**05**
Q.3	**(a)**	What are the basic technologies of developing NDDS? Classify them on the basis of their involvement into different unit operations.	**06**
	(b)	Define "-----Somes" e.g. niosome. Compare hepatic bye-pass vs phagocytic uptake from different route of administration in terms of bioavailability.	**05**
	(c)	Write a note on SCF technology.	**05**
Q.4	**(a)**	What is bioadhesion? How does it differs from mucoadhesion? Suggest suitable bodysites to develop these dosage forms.	**06**
	(b)	How will you balance dissolution/ penetration profile in order to achieve best bioavailability?	**05**
	(c)	Write a note on in-situ gels.	**05**
Q.5	**(a)**	Differentiate strips/diskettes and films from their physical, chemical and therapeutic aspects.	**06**
	(b)	Write a note on packaging, handling and evaluation of these systems.	**05**
	(c)	Write a note on transdermal patch with their extensional aspects.	**05**
Q. 6	**(a)**	What do you mean by intelligent drug delivery? Throw a light on different mechanisms to develop them.	**06**
	(b)	What is nanotechnology? How it can be applied to drug delivery and suggest any one market product developed on this basis.	**05**
	(c)	What is the future of tailor made medicines in the Indian market?	**05**
Q.7	**(a)**	Define PEGylation. What challenges are overcome by a F & D pharmacist in handling proteins and peptides to deliver to human body using this technique.	**06**
	(b)	What is immune modulation? Enlist such drugs developed in Indian market.	**05**
	(c)	Use of energy NDDS: Comment and explain giving suitable illustration.	**05**

****