Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Subject code: 930102

Subject Name: Novel Drug Delivery System : Part-II

Date:07/06/2011 **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)**	Briefly introduce the term nanotechnology. Enlist the commonly used polymers into these products. Discuss any one method of preparation of nanoparticle.	**06**
	(b)	Describe in brief the structure of Niosomes. Write about method of preparation of Niosomes.	**05**
	(c)	Enlist various intelligent drug delivery systems. Write about the system utilizing enzymes in context to intelligent drug delivery system.	**05**
Q.2	**(a)**	Define liposome. Give classification of liposome. Discuss about the characterization of liposomes.	**06**
	(b)	Write about applications of nanoparticulate drug delivery system.	**05**
	(c)	Define disketts. Write a note on buccal disketts.	**05**
Q.3	**(a)**	Briefly explain the concept of PEGlylation. Give factors affecting performance of PEGlyted peptide. Discuss about manufacturing challenges.	**06**
	(b)	Discuss about invivo and invitro problems associated with protein and peptide. Give your comment on formulation aspects of protein and peptide delivery system.	**05**
	(c)	Discuss about theories related to bioadhesion.	**05**
Q.4	**(a)**	Enumerate various techniques used to produce biotechnological products. Write about rDNA technology. Give examples of FDA approved rDNA products.	**06**
	(b)	Define sonophoresis. Differentiate between sonophoresis and iontophoresis. Discuss about drugs used by sonophoretic drug delivery system.	**05**
	(c)	Explain electroosmosis and electrorepulsive with reference to ionophoresis.	**05**
Q.5	**(a)**	Enlist the methods of spherical crystallization. Discuss any one method of spherical crystallization and write applications of spherical crystallisation.	**06**
	(b)	What is SCF? State the challenges of SCF. Write about applications of SCF in pharmaceutical research.	**05**
	(c)	Write about applications of hydrogel in drug delivery system.	**05**
Q. 6	**(a)**	Enlist various properties of polymer. Briefly describe the importance of Molecular weight and Glass Transition temperature of polymers. Discuss about the method for determination of molecular weight of polymers.	**06**
	(b)	Write a note on Immunomodulated molecules.	**05**
	(c)	Discuss the role of biodegradable polymers in drug delivery system and describe the mechanism of biodegradations.	**05**

Q.7	**(a)**	Classify biodegradable polymers in detail. Enlist factors affecting biodegradation of polymer.	**06**
	(b)	What is pro drug? Discuss the significance of pro drug as a novel drug delivery system.	**05**
	(c)	Define film and strips. Discuss about the methods used for manufacturing of mouth dissolving film.	**05**

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