

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 PEGylation. 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 electrophoresis with reference to iontophoresis. **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**
