

Total No. of Questions : 4]

SEAT No. :

**P3975**

[Total No. of Pages : 2

**[5246]-203**

**M. Pharmacy (Semester - II)**  
**NOVEL DRUG DELIVERY SYSTEMS**  
**(2013 Pattern) (Credit System)**

*Time : 3 Hours]*

*[Max. Marks : 50*

*Instructions to the candidates :*

- 1) Question number one is compulsory.*
- 2) Figures to the right indicate full marks.*
- 3) Draw well :abeled diagrams wherever necessary.*

**Q1)** Explain the effect of drug properties and routes of administration on the design of sustained and controlled release system. **[10]**

**Q2)** Answer any three **[15]**

- a) Write an account on transdermal permeation enhancers.
- b) Explain the factors affecting nasal absorption of drugs.
- c) What are the regulatory requirements for controlled drug delivery systems?
- d) Write a note on biowavers for bioequivalence studies
- e) Describe the different in vitro, ex-vivo and in vivo methods for evaluation of mucosal drug delivery systems.

**Q3)** Write Short Notes (any three) **[15]**

- a) Niosomes
- b) Drug targeting to brain
- c) Preparation methods for nanosuspensions
- d) Issues and challenges in ocular drug delivery
- e) Analysis of proteins and peptides

*P.T.O.*

**Q4)** Enlist various methods for preparation of microparticles. Describe about characterization and applications of microparticles. **[10]**

OR

Explain various approaches for colon targeting.

