



**DJJ-003-010412**

Seat No. \_\_\_\_\_

**M. Sc. (Sem. IV) (CBCS) Examination**

**May / June - 2015**

**Chemistry : C(OP) - 404**

**(Advanced Medicinal Chemistry) (Ele. - I)**

**Faculty Code : 003**

**Subject Code : 010412**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**Instructions:** (1) Attempt all five questions.

(2) All questions carry equal marks.

**1** Answer any **seven** out of following:

- (a) Explain the term "Lead". Describe its various sources of identification.
- (b) How side effects of a drug can be used for drug discovery?
- (c) Explain absorption of drugs by plotting a graph.
- (d) Write a note on "Tetra Gel Resin" as a solid support.
- (e) Explain Protein Binding of Drugs.
- (f) Explain Biotransformation of Drugs briefly.
- (g) Define the term "Prodrugs". Give its classification.
- (h) Define Molar Connectivity index.
- (i) What is QSAR ? Give its advantages and disadvantages.
- (j) Explain "Ficks Law of Diffusion".

**2** Answer any **three** of the following:

- (a) What is solid phase synthesis? Give brief account on solid supports used in solid phase synthesis.
- (b) Discuss various applications of combinatorial chemistry.
- (c) What are linkers in the combinatorial synthesis? Give a brief review of various linkers used with structure.
- (d) What are different methods of preparation of combinatorial libraries? Discuss any one in details.

**3** Attempt any **two**.

- (a) Explain phase - I reactions in brief.
- (b) Explain additively model in QSAR studies. How does it differ from Hansch model. Give its merits and demerits.
- (c) Write a note on Polymorphism.

**OR**

- (a) Explain phase II reactions in detail.
- (b) Why n-octanol and water is taken as standard system for determining the partition coefficient ?
- (c) Explain in details "Biotransformation of drugs".

**4** Answer any **three** of the following:

- (a) Define following terms;
  - (i)  $LD_{50}$
  - (ii)  $ED_{50}$
  - (iii) MIC
  - (iv) MEL
  - (v) Distribution of drugs.
- (b) Explain protein Binding of drugs to various plasma components (blood plasma).
- (c) Give Roche synthesis of Epoxide.
- (d) Give UBC synthesis of cetrizine dihydrochloride.

**5** Answer any **two** of the following:

- (a) Give synthesis of Tamiflu from shikimic acid.
- (b) Explain Gileads first process route to synthesise oseltamivir phosphate.
- (c) Give Corey's asymmetric synthesis of (S) - cetrizine dihydrochloride.