

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

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**M.Pharm Semester –II Examination Dec. - 2011**

**Subject code: 920201****Date: 12/12/2011****Subject Name: Drug Design and Discovery****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.

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|------|-----|---|----|
| Q.1  | (a) | What is QSAR? Explain Different physiochemical parameters utilized in QSAR analysis.                                  | 06 |
|      | (b) | Enlist stastical methods used to develop QSAR equation & explain multivariate methods in detail.                      | 06 |
|      | (c) | Explain Hansch & Free Wilson approach.  | 04 |
| Q.2  | (a) | Differentiate between Ligand based & Structure based drug design. Explain SBDD in detail with suitable examples.      | 08 |
|      | (b) | Define force field. Enlist & explain different force field utilized in CADD.  | 08 |
| Q.3  | (a) | How stereochemistry & physiochemical properties affect the activity of Drug molecule, explain with suitable examples. | 08 |
|      | (b) | Define isosterism & bioisosterism. Explain with suitable examples.  | 08 |
| Q.4  | (a) | What is virtual screening. Explain the concept & tools of virtual screening.  | 16 |
| Q.5  | (a) | Explain the following 3D-QSAR methods (Any two):<br>I. COMFA<br>II. Apex 3D<br>III. DISCO                             | 16 |
| Q. 6 | (a) | Explain the importance of drug design approach in drug discovery.   | 08 |
|      | (b) | Enlist various approaches of drug discovery & explain each of them briefly.   | 08 |
| Q.7  |     | Write short notes on:   | 16 |
|      | (a) | Targets & theories of drug action   |    |
|      | (b) | Prodrug design & its application in drug design.  |    |

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