

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. Semester – IIND Examination – June/July- 2011

Subject code: 920201

Subject Name: Drug Design and Discovery

Date: 04/07/2011

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) Explain the term ‘Lead molecule’? Describe the traditional ways of finding lead molecule. **06**
- (b) Discuss the role of drug design concept in drug discovery. **05**
- (c) Explain various steps involved in drug design concept. **05**
- Q.2** (a) Explain the concept of enzyme inhibition in drug design. Justify giving the proper explanation why mechanism based inhibitors have potential advantages over affinity labels? **06**
- (b) Explain the concept enzyme in drug design. **05**
- (c) What are goals of Analog design? Discuss the strategy of analog design by making geometrical isomers **05**
- Q.3** (a) What is bio-isosterism? Discuss classical bioisosters with examples. **06**
- (b) Explain role of stereochemistry in relation to drug design. **05**
- (c) Why racemic mixtures of drug are not preferred for clinical use. **05**
- Q.4** (a) Discuss how site specific action can be achieved by using pro-drug concept with suitable examples. **06**
- (b) What are micromolecular pro-drugs? Discuss the benefits of such pro-drugs with suitable example. **05**
- (c) What is 3D-QSAR. Discuss the importance of COMFA and DISCO models of 3D-QSAR. **05**
- Q.5** (a) What do you mean QSAR? Discuss various physiochemical and electronic parameters in detail. **06**
- (b) What are the advantages of 3D-QSAR over 2D-QSAR. **05**
- (c) Discuss the merits and demerits of Free Wilson Analysis. **05**
- Q.6** (a) What is molecular modeling? Discuss the application of molecular docking in drug design. **06**
- (b) Discuss Topliss Decision Tree Method used for designing drugs **05**
- (c) Discuss advantages and disadvantages of Quantum Mechanics and Molecular Mechanics in CADD. **05**
- Q.7** (a) What is virtual screening? Explain the methodology of virtual screening by pharmacophore mapping. **06**
- (b) What is de-novo drug designing? Discuss its requirement and different steps involved in it. **05**
- (c) Justify, importance of pharmacokinetics in new drug delivery. **05**
