Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject Code: 2920201 Date: 31-05-2014

Subject Name: Drug Design and Discovery

Time: 02:30 pm - 05:30 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)**	Describe main features of competitive, non-competitive and irreversible inhibition of enzymes	**08**
	(b)	What is QSAR? Give advantages and disadvantages of QSAR.	**08**
Q.2	**(a)**	What is Bioisoterism? Give classification of bioisosters. Write applications of bioisoterism in designing of new drug molecule.	**08**
	(b)	Explain comparative molecular field analysis in drug design along with its pitfalls.	**08**
Q.3	**(a)**	Write note on 2D QSAR descriptors.	**08**
	(b)	Explain various targets for drug action.	**08**
Q.4	**(a)**	Which are the problems faced by pharmacokinetic phase of drug discovery? How prodrug concept can be helpful in solving these problems, explain with examples.	**08**
	(b)	Write brief note on following i. Pharmacophore-model-based virtual screening ii. Pharmacophore-based de novo design	**08**
Q.5	**(a)**	Explain various approaches to mapping the molecular structure to activity.	**08**
	(b)	Explain Hantzsch analysis and Free Wilson analysis.	**08**
Q. 6	**(a)**	Discuss criterias that hit must satisfy to become drug.	**08**
	(b)	Discuss computer aided drug design in detail	**08**
Q.7	**(a)**	Elaborate the 'rational approach to drug design' with regard to Quantum Mechanics, Molecular Orbital Theory, Molecular Connectivity and Linear Free-Energy Concepts.	**08**
	(b)	The first synthetic oestrogen *trans*-diethylstilbesterol came into existence by applying the principle of 'drug-design through disjunction' from 'oestradiol'. Explain.	**08**

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