

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.PHARM- SEM-II-EXAMINATION – JULY 2012

Subject code: 2920201

Date: 09/07/2012

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.

Q 1.

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|--|----|
| a) Explain in detail concept of drug discovery. | 06 |
| b) What do you mean by drug design, explain its applications in drug discovery | 05 |
| c) What is 'LEAD' explain methods used for lead discovery. | 05 |

Q 2.

- | | |
|---|----|
| a) Explain in detail the importance stereochemistry in drug design. | 06 |
| b) Write in detail importance of physicochemical parameters in biological activity. | 05 |
| c) Explain the following terms | 05 |
| i) Bio-isosterism | |
| ii) Prodrug concept | |

Q 3.

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|--|----|
| a) What do you mean by QSAR, explain in detail Hanch LEFR model. | 06 |
| b) Write a note on QSAR parameters | 05 |
| c) What is Free Wilson analysis? Explain its significance | 05 |

Q 4.

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|---|----|
| a) What do mean by variables and statistical analysis in QSAR | 06 |
| b) Explain following statistical analysis in detail | 05 |
| i) PLS ii) PCA iii) MFA iv) GFA | |
| c) Write a note on 3-D QSAR. Write differences between 2-D QSAR and 3-D QSAR. | 05 |

Q 5.

- | | |
|--|----|
| a) What do you mean by CADD, explain importance of molecular modeling? | 06 |
| b) What do you mean by following terms | 05 |
| i) Quantum mechanics | |
| ii) Molecular mechanics | |
| iii) Energy minimization | |
| c) Explain in detail use of NMR and X-ray crystallography in CADD | |

Q 6.

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|---|----|
| a) What is structure based drug design and ligand based drug design. | 06 |
| b) What do you mean by docking study, explain different methods used in docking. | 05 |
| c) Write a note on theory of drug action. Explain in detail about agonist and antagonist. | 05 |

Q 7.

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|--|----|
| a) What do you mean by virtual screening. Explain in detail about pharmacophore mapping. | 06 |
| b) Write importance of ADME in drug discovery | 05 |
| c) Write a note on following | 05 |
| i) COMFA | |
| ii) COMSIA | |
| iii) MSA | |

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