

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 08

M.Sc.(Ph. Chem) (Sem.-3)
DRUG DESIGN AND DEVELOPMENT
Subject Code : MSPC-205
M.Code : 20511

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries SIXTEEN marks.

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| 1. | a) Discuss the historical development of drug design approaches. | 6 |
| | b) Give five postulates of quantum mechanics. | 5 |
| | c) Give Schrodinger equation and explain the significance of wave function (ψ^2). | 5 |
| 2. | a) Explain the drug action on the basis of concept of receptor. | 5 |
| | b) Describe the extrathermodynamic model of traditional QSAR. | 6 |
| | c) Explain Topliss operational scheme for the designing of test series in QSAR. | 5 |
| 3. | a) Describe the role of data retrieval techniques in drug design with example. | 8 |
| | b) Discuss the principle of molecular mechanics and its applications in drug design. | 8 |
| 4. | a) Describe the single compartment pharmacokinetic model. | 8 |
| | b) Describe Lipinski rule and its applications. | 8 |
| 5. | a) Write short note on environmental pharmacokinetics. | 8 |
| | b) Discuss the role of biopharmaceutics in drug design. | 8 |
| 6. | a) What are peptidomimetics? Describe Farmer's rule to convert peptide into peptidomimetic. | 8 |
| | b) Give brief note on oligonucleotide based antiviral chemotherapy. | 8 |

7. a) What are the basic steps of rational prodrug design? 6
- b) With the help of suitable examples describe the concept of prodrugs for site specific and prolonged action drug delivery system. 10
8. Write short note on **any two** :
- a) Validation of QSAR model. 8
- b) Perturbation theory of drug action. 8
- (c) Limitation of CADD 8

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.