

(i) Printed Pages : 2

Roll No.

(ii) Questions : 9

Sub. Code :

2	5	9	5	2
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Exam. Code :

0	4	3	8
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**M.Sc. (Bio-Technology) 4th Semester
(2056)**

DRUG DESIGNING AND DRUG DELIVERY METHODS

Paper : MBIO-402

Time Allowed : Three Hours]

[Maximum Marks : 80

Note :— Attempt 5 questions in all. Question no. 1 is compulsory and select **one** question from each Unit.

I. Answer Briefly:

- | | |
|---|---|
| (a) Zero order Elimination | 2 |
| (b) Cite one example of Prodrug | 2 |
| (c) Therapeutic index | 2 |
| (d) Volume of distribution | 2 |
| (e) Bioavailability of Oral Drug | 2 |
| (f) Structure based Drug Design | 2 |
| (g) 2D QSAR molecular descriptors | 2 |
| (h) Central and Peripheral Compartment. | 2 |

UNIT-I

- II. . (a)** What are the various factors associated with the drug distribution? 8
- (b)** Discuss significance of Phase I and Phase II reactions in drug metabolism. 8

OR

- III. (a) Derive the formula for the steady-state plasma drug concentration (C_{ss}) and accumulation factor (R_{ac}) for a repeated multiple-dosing regimen. 12
- (b) How does the oral absorption model differ from the IV bolus model? 4

UNIT-II

- IV. (a) What are methods for developing in vitro assays to measure acute toxicity? 8
- (b) What are the various factors for determining stability of the molecular complexes? 8

OR

- V. (a) Discuss coordination theory of molecular complexes. 8
- (b) Give examples of the molecular complexes in drug delivery and therapeutics. 8

UNIT-III

- VI. (a) Discuss the filing for Investigation New Drug (IND) application. 10
- (b) What is a Generic Drug? Explain the process for approval of generic drugs. 6

OR

- VII. (a) What are orphan drugs? How does the filing for orphan drugs differ from the New Drug application process? 10
- (b) Discuss the various aspects of post-approval drug products. 6

UNIT-IV

- VIII. (a) Discuss two mechanisms for controlled release of drugs by stimulants. 8
- (b) Discuss various types and advantages of the transdermal route of drug delivery. 8

OR

- IX. (a) Discuss properties of aqueous solubility, pK_a , and partition in relevance to extended release formulations. 8
- (b) Discuss Tissue Engineered Delivery System. 8