

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7261

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Unique Paper Code : 2173550011

Name of the Paper : DSE-Fundamentals of Medicinal Chemistry

Name of the Course : **B.Sc. (Prog.)**

Semester : VIII

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **four** questions in all.
3. **All** questions carry equal marks.
4. Attempt **all** parts of the questions together.

1.
 - (i) Explain the importance of target validation in drug discovery.
 - (ii) Why do clinical trials require several years for completion?
 - (iii) Define the therapeutic index (therapeutic ratio) of a drug.
 - (iv) What is the importance of drug formulation and stability studies?
 - (v) What is meant by the chemical stability of a drug? (3×5)
2.
 - (i) Define partition coefficient, and explain its significance in drug development.
 - (ii) Discuss the major sources of drugs? Give the names and structures of any two drugs obtained from natural sources.
 - (iii) Explain pharmacokinetics and pharmacodynamics and highlight the difference between them. (5×3)

P.T.O.

3. (i) What does ADME stand for? Describe drug metabolism in detail.
(ii) What are prodrugs? Explain with suitable examples.
(iii) What do you understand by drug half-life? Explain its significance. (5×3)
4. (i) Discuss the role of SAR in drug design.
(ii) Explain the importance of bioinformatics in drug design.
(iii) Describe any one technique used for drug screening. (5×3)
5. Write short notes on the following (Any **three**) :
- (i) Bioisosters and their importance
(ii) Role of Stereochemistry in drug design.
(iii) Stages of drug discovery
(iv) Phase II clinical trials (5×3)
6. (i) Describe structure and synthesis of penicillin V.
(ii) What are antifungal drugs ? Give the structure and mode of action of Fluconazole.
(iii) Describe the synthesis of isoniazid starting from 4-picoline and discuss its SAR. (5×3)