PB **5255**

Roll No. **Total No. of Pages: 02**

M.Sc. (Semester-IV) Examination - June - 2026
Chemistry
Paper - 4.4 CHEM
Medicinal Chemistry
(Only for Organic Chemistry Specialization)

Time Allowed: Three Hours **Max. Marks: 70**

This question paper contains two sections as under : **Min. Marks: 28**

Section-A **Max. Marks-20**

This section will have 10 questions, having 02 questions from each unit with no internal choice. Answer in about 20 words. All questions will have equal marks. (2×10=20)

Section-B **Max. Marks-50**

This section will have 10 questions, having 02 questions from each unit, one question to be attempted from each unit. Words limit approximately 400-500 words. Questions may have sub divisions. All questions will have equal marks. (10×5=50)

Section-A

1. (i) What are drug receptors? What characteristics does a receptor contains?
   (ii) The biological activities of a drug molecule can be modified by Ferguson's theory. Explain with typical examples.
   (iii) Define apparent volume of distribution.
   (iv) Explain activation-aggregation theory.
   (v) What is the role of alkylating agents in treatment of cancer?
   (vi) Write the synthesis of acyclovir.
   (vii) What do you understand by cardiovascular drugs? Write the heads in which these drugs are classified.
   (viii) What is Calcium Channel blocker? Explain.
   (ix) Write the characteristics which ideal sedatives must possess.
   (x) Define Serotonin receptor modulators. 10×2=20

Section-B

Unit-I

2. What are the routes of drug administration? Explain the adverse effects of drugs, their types and side effects. How can we minimize them?

OR

Write a comprehensive essay on the unknown receptor site with special emphasis upon the following aspects :

a) Pharmacophore v/s binding site model.
b) Molecular Comparison.
c) Searching for similarity. 10

Unit- II

3. Write short notes on any two :
   i) Distribution and disposition of drug
   ii) Pharmacokinetics of elimination.
   iii) Induced Fit theory

OR

Define biotransformation. Explain their types by giving suitable examples. 10

Unit – III

4. Write short notes on any two :
   i) Carcinolytic antibiotics
   ii) Mitotic Inhibitors
   iii) Mustard drugs.

OR

Give the structure, chemical name & uses of two important 'antiviral drugs' that affect translation on cell ribosome. Discuss the synthesis of any one drug. 10

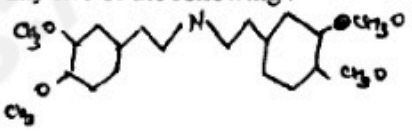
Unit- IV

5. Discuss the synthesis of any one of the following membrane stabilizing agent usually employed as cardiovascular drugs
   a) Disopyramide phosphate
   b) Procainamide hydrochloride

Explain the mode of action of vasopressor drug.

OR

Write the synthesis of any two of the following :
i) Verapamil
ii) Diltiazem
iii) Losartan



10

Unit- V

6. Explain the following with suitable example :
   a) Mode of Action of Barbiturates
   b) Structure-activity relationship amongst Barbiturates.

OR

Give a comprehensive account of anti-psychotic drugs. Support your answer with the most potent drugs by providing structures, synthesis and uses adequately. 10

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