

**A-0418**

Total Pages : 3

Roll No. ....

**MSCCH-608**

**M.SC. CHEMISTRY (MSCCH)**

**(Medicinal Chemistry)**

Examination, June 2025

Time : 2:00 Hrs.

Max. Marks : 70

**Note :-** This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

**Section-A**

**Long Answer Type Questions**      2×19=38

**Note :-** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. What is an antineoplastic agent ? Discuss its types in details with suitable example.
2. What is Cardiovascular Diseases ? Which drugs are used for Cardiovascular Diseases ? Explain in details.
3. Gives the synthesis of the following drugs :
  - (a) mechlorethamine
  - (b) cyclophosphamide
4. Explain the concept of Quantitative Structure-Activity Relationship (QSAR). Describe the different types of descriptors used in QSAR modeling and discuss how QSAR helps in predicting the biological activity of new compounds.
5. Gives the synthesis of the following drugs :
  - (a) amyl nitrate
  - (b) verapamil

### **Section–B**

#### **Short Answer Type Questions**      4×8=32

**Note** :– Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Define Structure-Activity Relationship (SAR) and discuss its importance in medicinal chemistry. How does SAR analysis aid in the development of more effective drugs ?
2. Write short notes on :
  - (a) Molecular docking
  - (b) Cancer chemotherapy
3. Define pharmacokinetics and pharmacodynamics.
4. Describe the term biotransformation and its significance in drug metabolism.
5. What is the role of alkylating agents in treatment of cancer ?
6. What are the relationships between Free-Wilson and Hansch analysis ?
7. What is gene therapy ? Discuss the various factors involved in the gene therapy.
8. Write short note on LD50 and ED50.

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