

**A-0417**

Total Pages : 3

Roll No. ....

**MSCCH-607**

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

**(Chemistry of Natural Product and Heterocyclic  
Compound)**

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. Give general methods of structural determination of terpenoids.
2. What are alkaloids ? Give structural determination of reserpine.
3. Discuss synthesis and biosynthesis of Estrone.
4. Describe structure and synthesis of porphyrin skeleton :
5. Write short note on :
  - (a) Phosphorines
  - (b) Oxiranes
  - (c) Pyramidal inversion at nitrogen

### **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. Give structural determination of morphine.
2. Write note on the following :
  - (a) Diel’s hydrocarbon
  - (b) Rotenones
3. Discuss stereochemistry of steroids.

4. Write note on :
  - (a) Acetate pathway
  - (b) Robinson synthesis
5. Discuss the structure of Chlorophyll-a and chlorophyll-b.
6. Give methods of synthesis of the following :
  - (a) Cholesterol
  - (b) Testosterone
7. Write short note on :
  - (a) Isoprene rule
  - (b) Benzofurans
8. What are phospholes ? Give the methods of preparation of phospholes.

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