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Roll No.

MSCCH-607

Chemistry of Natural Product and Heterocyclic Compounds

M.Sc. Chemistry (MSCCH)

4th Semester Examination, 2023 (June)

Time : 2 Hours]

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 answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION-A

(Long Answer Type Questions)

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.

(2×19=38)

1. What is Porphyrin ring? Discuss its synthesis and applications.

2. What are terpenoids? Explain :
 - (a) Isoprene rule
 - (b) Classification of terpenoids.
 - (c) Functions and properties of terpenoids.
3. Give synthesis of PGE₂ and PGE₂α.
4. Write note on the following :
 - (a) Torsional strain and their consequences in small ring electrocycle.
 - (b) Tautomerism in aromatic electrocycle
5. Give structural determination of the menthol.

SECTION-B
(Short Answer Type Questions)

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. (4×8=32)

1. What are phosphorinanes? Give any two methods of preparation of phosphorinanes.
2. Give synthetic methods of any *two* of the following :
 - (a) Oxirane.
 - (b) Benzopyrrole.
 - (c) Oxetanes.

3. Write note on pyramidal inversion and 1,3 diaxial interaction.
 4. Write short note on shikimic acid pathway.
 5. Give the synthesis of haemin.
 6. Explain briefly :
 - (a) Rotenone.
 - (b) Benzothiophenes.
 7. Explain stereochemistry of menthol.
 8. What are anthocynin? Write their properties and functions.
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