

A-0562

Total Pages : 3

Roll No.

MSCCH-607

M.Sc. CHEMISTRY (MSCCH)

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

4th Semester Examination, Session December 2024

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 structural determination and stereochemistry of menthol.
2. What are alkaloids ? Give structural determination of reserpine.
3. Discuss synthesis and biosynthesis of testosterone.
4. Write the acetate and shikimic acid pathway for biosynthesis of flavonoids.
5. Write short notes on the following :
 - (a) Isoprene rule
 - (b) Structure of cholesterol
 - (c) Porphyrins
 - (d) Anthocyanins

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 the chemical reactions of indole.
2. Write notes on the following :
 - (a) Preparations of phospholanes
 - (b) Mannich reaction

3. Describe aromaticity in heterocyclic compound
4. Write notes on the following :
 - (a) Bond angle strain
 - (b) Pyramidal inversion
5. What are prostaglandins ? Give their classification
6. Give methods of synthesis of the following :
 - (a) Quercetin
 - (b) Flavone
7. Write short notes on the following :
 - (a) Diel's hydrocarbon
 - (b) Structure of estrone
8. Discuss stereochemistry of steroids.
