A–880

Total Pages : 3 **Roll No. .....**

MSCCH-607

M.Sc. CHEMISTRY (MSCCH)

(Chemistry of Natural Product and Heterocyclic Compound)

4th Semester Examination, 2024 (June)

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 are terpenoids ? Classify them on the basis of their isoprene units.

2. What are alkaloids ? Give structural determination of the Morphine.

3. What are chlorophyll-a and-b ? What is the structural difference between chlorophyll –*a* and *b* ? Give the synthesis of chlorophyll-*a* ?

4. Define the term pyrethroides ? What are the physiological properties of these compounds ? Give synthesis of at least two pyrethroids.

5. Write short note on :

   (a) Bischler-Indole Synthesis

   (b) Isoprene rule

   (c) Acetate acid pathway

   (d) Prostaglandins

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. What are rotenone's ? Give synthesis, properties, and uses of rotenone's.

2. Write the biosynthesis of steroid with given the example of cholesterol.

3. Write Biosynthesis of flavonoids.

4. What are pigments ? Give the various classifications of pigments ?

5. What are the consequences of bond angle strain in small ring heterocycles.

6. Give the methods of preparation and chemical reactions of oxiranes.

7. What are phosphorinanes ? Give any *two* methods of preparation of phosphorinanes.

8. Give mechanism of the following reactions:

   (a) Vilsmeier-Haack Formylation

   (b) Fischer Indole Synthesis

   (c) Paterno-Buchi reaction

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