A-0568

Total Pages : 3   Roll No. ....

MCH–606

M.Sc. CHEMISTRY (MSCCH)

(Photochemistry & Stereochemistry)

4th Semester Examination, Session December 2024

Time : 2:00 Hrs.   Max. Marks : 35

Note :– This paper is of Thirty Five (35) 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   2×9½=19

Note :– Section 'A' contains Five (05) Long-answer type questions of Nine and Half (9½) marks each. Learners are required to answer any *two* (02) questions only.

1. What is the effect of conformation on reactivity of cyclic system. Explain with suitable example.

2. What is Paterno Buchi reaction ? Discuss its mechanism along with the stereochernical consequences.

3. Explain photochemistry of alkenes and dienes.

4. Write the conformation of 1,3-dimethylcyclohexane. Discuss the chirality of cis and trans isomers.

5. Discuss Norrish Type-1 and Norrish Type-2 reactions in carbonyl compounds with mechanism.

Section–B

Short Answer Type Questions $4 \times 4 = 16$

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

1. Define quantum efficiency of photochemical reactions and explain the reason of low quantum yield.

2. Explain radiative and nonradiative transitions with suitable example.

3. Write the photochemistry of Diazo compounds.

4. Compare stereoisomerism of cis-1, 2-Dimethyl-cyclopropane and cis 1, 2-Dimethylcyclohexane.

5. Explain why chair conformation of cyclohexane is more stable then boat conformation.

6. Draw the most stable conformation of cis-1-tert-butyl-4-methylcyclohexane. Explain the preference for an equatorial Orientation in the pairs.

7. Discuss various laws of photochemistry.

8. Write note on Jablonsky diagram.

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