

551

Total Pages : 3

Roll No.

CHE-551

**Reaction Mechanisms, Pricyclic Reactions,
Photochemistry and Stereochemistry**

M.Sc. CHEMISTRY (MSCCH-12/13/16/17)

2nd Year Examination, 2021 (Winter)

Time : 2 Hours]

Max. Marks : 80

Note : This paper is of Eighty (80) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

SECTION-A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Twenty (20) marks each. Learners are required to answer any Two (02) questions only.
(2×20=40)

1. Define electrocyclic reactions. Explain $4n\bar{e}$ and $4n + 2e$ electrocyclic reactions with examples.

2. Explain Norrish type-I and type-II reactions with suitable examples.
3. Write short note on :
 - (a) Photo smiles rearrangement.
 - (b) Photo induced electrophilic substitution reaction of benzene.
4. Discuss the conformation of cyclohexane. Why is the boat conformation of cyclohexane in less stable than the chair conformation.
5. State Curtin-Hammett principle and explain with suitable example.

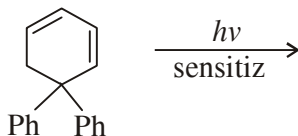
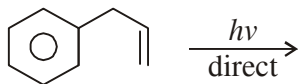
SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Ten (10) marks each. Learners are required to answer any Four (04) questions only. (4×10=40)

1. Discuss the mechanism of Baeyer-Villiger oxidation and Wulff rearrangement.
2. Explain E_1 and E_2 mechanism with suitable examples.
3. Predict the reaction conditions for conrotatory electrocycloislation of a 1, 3 – diene by PMO method.

4. Write short note on :
- Phosphorescence.
 - Fluorescence.
5. How are dipole moment studies and NMR useful in conformational analysis ? Explain with an example in each case.
6. How are carbanion detected. Outline the mechanism of claisen ester condensation.
7. What is Di- π methane rearrangement. Give the product of the following reactions.



8. Write note on :
- Carbenoids.
 - Triplet carbene.
-

