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Total Pages : 4

Roll No.

MCH-601

Reaction Mechanism and Pericyclic Reaction

M.Sc. Chemistry (MSCCH)

3rd Semester Examination, 2023 (June)

Time : 2 Hours]

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

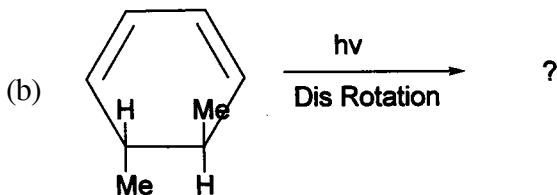
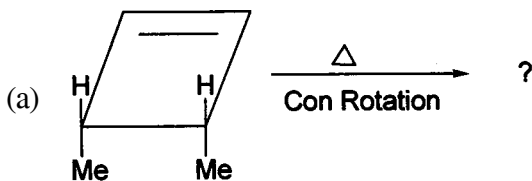
SECTION–A

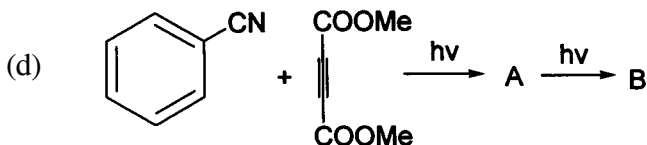
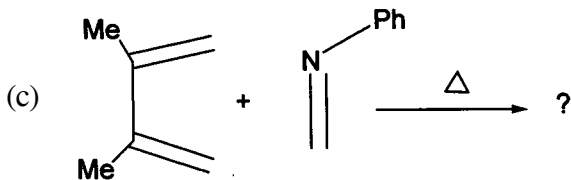
(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nine and Half ($9\frac{1}{2}$) marks each. Learners are required to answer any Two (02) questions only.
($2 \times 9\frac{1}{2} = 19$)

- 1.** What are carbocation? Discuss the stability of carbocation and characteristic of carbocation.

2. Write the mechanism of any *three* of the following reaction:
- Pinacol-pinacolone rearrangement.
 - The Baeyer villager oxidation.
 - Hofmann rearrangement.
 - Curtius rearrangement.
3. What are pericyclic reaction? Explain the stereochemistry of electrocyclic reaction with suitable example.
4. Draw the orbital symmetry correlation diagram for conrotatory electrocyclicization of 1,3-diene and predict the symmetry allowed reaction condition.
5. Write the product of following compounds with the Mechanism :





SECTION-B

(Short Answer Type Questions)

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. (4×4=16)

- Write the steps of free radical reaction ?
- Write the notes on :
 - N-Bromosuccinimide.
 - Conrotation and disrotation.
- Discuss the stability of carbenes.

4. Write the structure of nitrene and any two reaction of nitrenes in organic reaction.
 5. Why [2+2] cycloaddition reaction photochemical allowed but thermally not allowed?
 6. Distinguish between elimination and substitution reaction.
 7. Write the migrating condition of Beckmann rearrangement with suitable example.
 8. Write the importance of Saytzeff rule.
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