A-883

Total Pages : 4 **Roll No. ----------**

MCH-601

Reaction Mechanism and Pericyclic Reaction

M.Sc. Chemistry (MSCCH)

3rd Semester Examination 2024 (June)

Time: 2:00 hrs Max. Marks: 35

Note : This paper is of Thirty Five (35) marks divided into Two (02) Section A and B. Attempt the questions contained in these sections according to the detailed given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

P.T.O.

Section-A (Long-Answer-Type Questions)

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.

[2x9½=19]

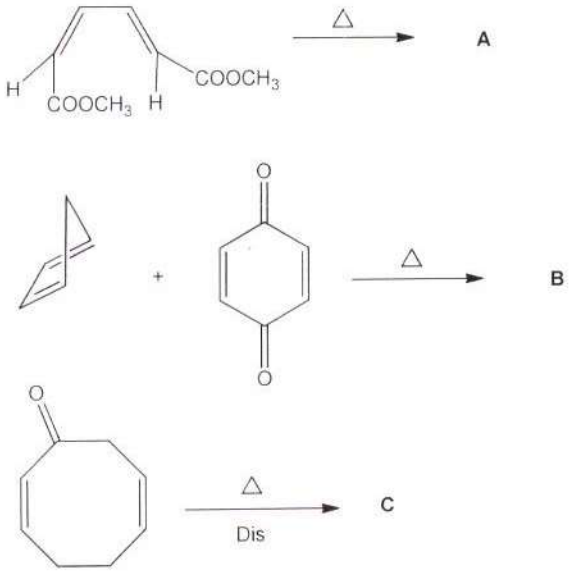
Q.1. Write notes on the following:

a. Hofmann rearrangement

b. Curtius rearrangement

Q.2. Draw orbital symmetry correlation diagram for $(\pi^4 s + \pi^2 s)$ cycloaddition, and draw the conclusion.

Q.3. Complete the following reactions:



Q.4. Write notes on the following:

a. Ene reaction

b. Electrocyclic reactions

Q.5. Write notes on the following:

a. Detection of free radicals

b. Autooxidation

c. Baeyer Villiger oxidation

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.

[4x4=16]

Q.1. Discuss the stability of carbanions. Formulate the mechanism of an addition reaction of carbanions.

Q.2. Write notes on the following:

a. Carbonium ions

b. Carbon free radicals

Q.3. Write notes on the following:

a. Benzyne

b. Carbenes

Q.4. Discuss the mechanism of Fries rearrangement.

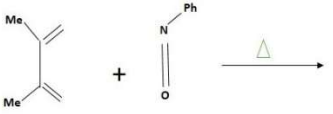
P.T.O.

Q.5. What are Sigmatropic shifts? What are (i,j) shifts? Explain with examples.

Q.6. Discuss the mechanism of E2 reaction with suitable examples.

Q.7. Formulate any two methods of formation of aryne intermediates. Explain the addition reactions of arynes.

Q.8. Complete the following reactions:

a. 

b. $C_6H_5 - C(Me)_2 - O - O\text{-}H \xrightarrow{H^+}$

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