B17

2110E374

Candidate's Seat No :_____

M.Sc. Sem-4 Examination

507

Chemistry (Organic)

October 2021

Time : 2-00 Hours] **[Max. Marks : 50**

Instructions: All questions in section I carry equal marks.

Attempt any 3 questions in section I

Questions in section II is COMPULSORY

Section I

Q- I A. Define the term Conrotatory and Disrotatory system with Correlation diagram of conrotatory system. Explain Cyclisation of 1,3,5- Hexatriazine to Cyclohexadiene. 07

B. What is Dewar's rule of aromaticity? Discuss its application to predict electrocyclic and sigmatropic reactions. Derive selection Rule. 07

1 

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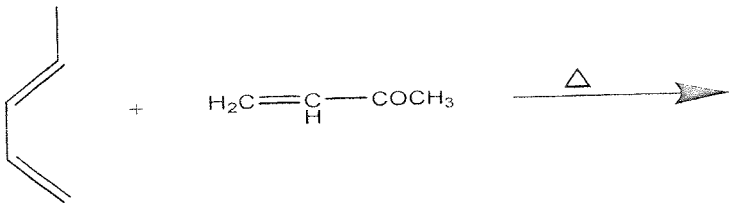
3 

Q-II A. Predict the product of given reactions 07

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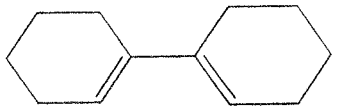
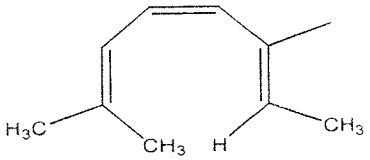
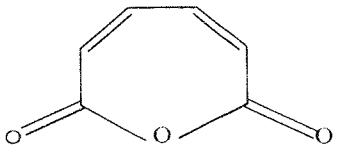
1  $h\nu$ ⟶

2  $h\nu$ ⟶

3  $h\nu$ ⟶

B. What is Dewar's rule of aromaticity? Discuss its application to predict electrocyclic and sigmatropic reactions. Derive selection Rule. **07**

Q-III A. Draw projections and discuss various conformational analysis of heterocyclic compounds with carbocylic compounds. **07**

B. Define anomeric effect. Give and account on the factors that affects the stability of conformation. **07**

Q-IV A. Discuss the conformations of perhydro phenanthrene and discuss its stability. **07**

B. Discuss the conformations analysis and stability of 1,2 and 1,3 di methylcyclohexane. **07**

Q-V A. (i) Discuss the oxidation of aromatic ring of phenol. **07**

(ii). Discuss the application of $Pdcl_2$ as an oxidizing agent.

B. Discuss the application of periodic acid an Mn (VII) as oxidizing agent in organic synthesis. **07**

Q-VI A. Giving the mechanism of reaction and discuss oxidation of alkenes to corresponding diols and carbonyl compounds. **07**

B. Giving the mechanism of reaction and discuss the application of Osmium tetroxide and Manganese dioxide as oxidizing agent in organic synthesis. **07**

Q-VII A. Giving the mechanism of the following reactions with one application each: **07**

i) Staudinger Reduction

ii) Luche Reduction

B. Give evidence, discuss the mechanism for the reduction of esters to alcohols and amides to amines. **07**

Q-VIII A. Give evidence, discuss the mechanism for the reduction of alkenes. **07**

B. Discuss the reduction of naphthalene and aromatic nitro compounds under different conditions. **07**

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Section II

08

Q-IX Answer in short

1. Define Bredt's rule.
2. Give Symmetry properties of 1,3 butadiene
3. What is angle strain?
4. Draw various isomers of Di-cholorocyclopropane.
5. What is Collins Reagent?
6. Give one application of DMSO as oxidation of C-H bond
7. Give one example of reduction benzene.
8. What is Rosenmud catalyst?