

M.Sc Semester-4 Examination

507

Chemistry (O)

April-2024

Time : 2-30 Hours]

[Max. Marks : 70

- Q.1 A Define pericyclic reaction with classification. [7]
B Construct the correlation diagram for $[4s+2s]$ cycloaddition system. [7]
OR
A Discuss the FMO method for electrocyclic reaction. [7]
B Discuss the application of PMO method to predict cycloaddition and sigmatropic reaction. [7]
- Q.2 A Draw projections and discuss various conformation of decalins. [7]
B Draw projections and discuss various conformation of 1,2-di substituted cyclohexane. [7]
OR
A Discuss different kinds of strain. [7]
B Draw conformers of perhydrophenanthrene and discuss its stability. [7]
- Q.3 A Giving mechanism of reaction. Discuss the Specificity of Chromic acid as an oxidising agent for the oxidation of alcohol. [7]
B Discuss the oxidation reaction of amines. [7]
OR
A Discuss different oxidation processes in brief. [7]
B Giving mechanism of reaction and discuss oxidation of alkenes to corresponding diols and carbonyl compounds. [7]
- Q.4 A Giving evidence discuss the mechanism for the reduction of alkynes. [7]
B Discuss the mechanism of the Luche reduction. [7]
OR
A Enlist methods for the reduction of carbonyl compounds. Discuss reduction of ester to alcohol and aldehyde. [7]
B Giving reagent and condition discuss mechanism for the reduction of various aromatic nitro compounds. [7]

P.T.O

Q.5

Answers any 7 questions

[14]

- 1 Define con rotatory and dis rotatory system.
- 2 Write characteristics of cycloaddition reaction.
- 3 What is full form of PMO theory?
- 4 Define: Torsional strain.
- 5 Which one more stable and why: i) Cyclopropane, ii) Cyclobutane
- 6 Define: Fused bicyclic system.
- 7 What is Oxidative Coupling?
- 8 Which oxidative catalysts are used in Wackner reaction?
- 9 Give a full name of TEMPO.
- 10 White two examples of reducing reagent.
- 11 Write the application of pd metals as catalyst.
- 12 Define organometallic compounds.

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