

SG – 248

Total No. of Pages : 4

Seat No.	
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M.Sc. (Part - II) (Semester - IV) (CBCS) Examination,
March - 2023

ORGANIC CHEMISTRY (Paper - XIV) OCH 4.2
Stereochemistry
Sub. Code : 81565/86730

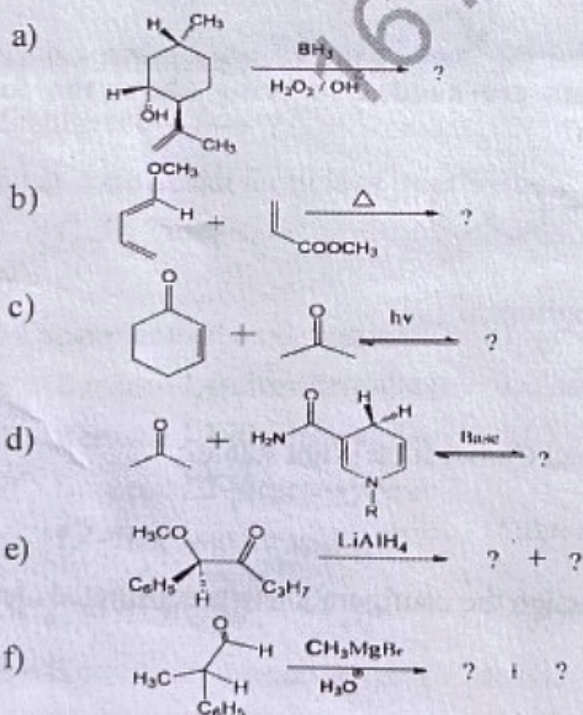
Day and Date : Wednesday, 14 - 06 - 2023

Total Marks : 80

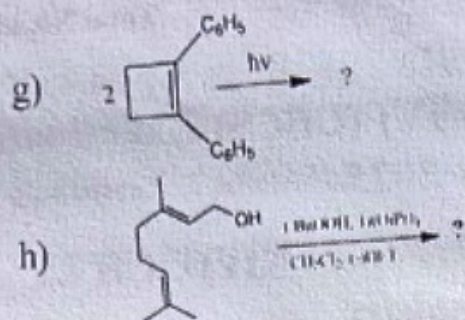
Time : 10.30 a.m. to 01.30 p.m.

- Instructions : 1) Question No.1 is compulsory.
2) Answer any two questions from each section.
3) Answers to the all the questions should written in the same answer book.
4) Figures to the right indicate marks.

Q1) A) Predict the products and stereochemistry in the following : [16]



P.T.O.

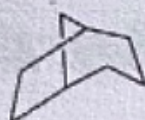


B) Answer the following :

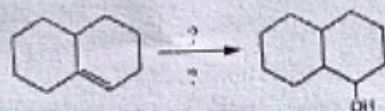
- i) Assign the nomenclature to following compound



- j) Assign the nomenclature to following compound.



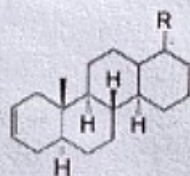
- k) What reagents are needed to bring about the following transformation?



- l) Define the atropisomerism?
- m) What is stereoselective synthesis?
- n) Why bridgehead Carbocation is not stable?
- o) What is octant rule?
- p) How do you assign the configuration to trisubstituted olefins?

SECTION - I

- Q2)** a) Discuss the conformations of 2,3-dimethylbutane. [8]
 b) Explain the chair and boat conformations of cyclohexane. [8]
- Q3)** a) Illustrate the stability of rings with respect to as a function of ring size and ring substituents. [8]
 b) What products will be formed from the following steroid on reaction with
 i) O_3 and ii) $I_2/CH_3COOAg/CH_3COOH/H_2O$. [8]



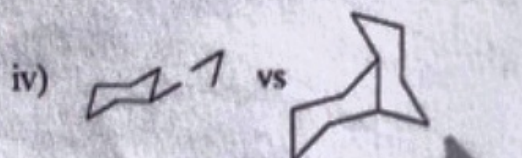
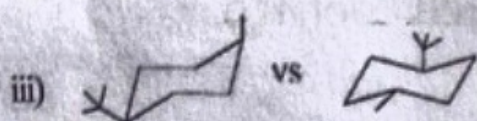
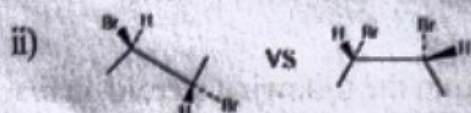
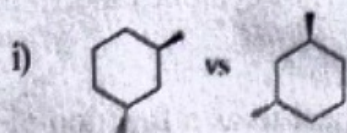
- Q4)** a) Discuss the case of ring formation as a function of ring size and the nature of substitution of the ring atoms. [8]
 b) Explain the applications of optical rotatory dispersion in assigning conformation and configuration of various molecules. [8]

SECTION - II

- Q5)** a) Illustrate the stereochemistry of the perhydroanthracene. [8]
 b) Explain the stereochemical restrictions with suitable example. [8]
- Q6)** a) Discuss the determination and configuration of olefins using Melting/boiling point methods. [8]
 b) Correctly substituted ortho biphenyls are chiral and rotation about the junction bond will racemize a pure enantiomer. Explain with examples. [8]

Q7) a) Illustrate the axial haloketone rule with suitable example. [8]

b) Define the relationship between the following pairs of molecules as identical, conformers, non-isomers, constitutional isomers, enantiomers and diastereomers. Tell whether they are optically active or not. [8]



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