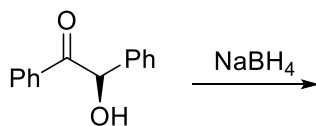


M.Sc.(Chem.) Semester - 3 (CBCS) Examination
OCT/NOV-2025 (AS PER SYLLABUS YEAR JUNE-2019)
Stereochemistry (Core (New))

Time: 2:30 Hours**Marks:70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1 (A) Answer the following. (04)**
(1) Discuss following term (a) Diastereomer (b) Meso compound
(2) Draw any two pair of enantiomers.
- Q.1 (B) Answer any two question out of three. (10)**
(1) What is racemic mixture? Discuss various process of racemization.
(2) How many isomers are possible in D-threonine? Draw all in Fisher projection and interconvert to Newman and Sawhorse projection.
(3) Discuss R/S nomenclature system for the Allens.
- Q.2 (A) Answer the following (04)**
(1) What are enantiopic faces? Explain with two examples
- Q.2 (B) Answer any two question out of three. (10)**
(1) Explain the term (a) enantiotopic ligand (b) Diastereotopic ligand with examples.
(2) Explain Klyne-prelog terminology for the conformation analysis.
(3) Draw various conformations of 2-bromobutane and explain conformation effect on the elimination reaction.
- Q.3 (A) Answer the following (04)**
(1) Write a note on enomeric effect.
- Q.3 (B) Answer any two question out of three. (10)**
(1) Why cis decalin is chiral but optically inactive? Explain in detail.
(2) Discuss chirality of cis and trans-1,2-dimethyl cyclohexanes.
(3) Explain chair and boat conformation of with their stability order.
- Q.4 (A) Answer the following (04)**
(1) Explain stereospecificity in the SN^2 mechanism.
- Q.4 (B) Answer any two question out of three. (10)**
(1) What is anchimeric assistance? Discuss it with two examples
(2) Compare Syn vs Anti elimination with examples.
(3) Discuss Saytzeff Vs Hoffmann elimination with suitable examples.
- Q.5 (A) Answer the following (04)**
(1) Predict the diastereoselectivity of following:



- Q.5 (B) Answer any two question out of three. (10)**
Write a note on following including stereoselectivity and mechanism.
(1) Prevost reagent
(2) Dihydroxylation by OsO_4
(3) Oxymercuration
