

M.Sc.(Chem.) Semester - 4 (CBCS) Examination
April/May-2022 (OLD COURSE)
ADVANCED STEREO CHEMISTRY(ELECTIVE-1)

Time: 2:30 Hours

Marks: 70

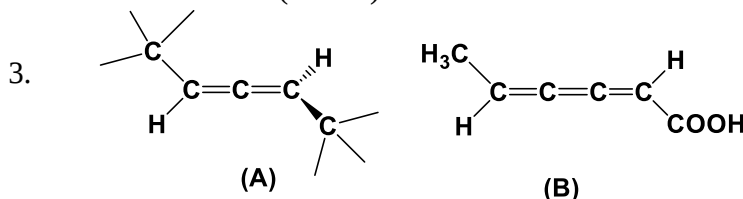
Instructions:

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

Q.1 Answer any **seven** of the following ten questions.

[14]

1. Give classification of stereoisomers
2. Explain the term Chiral, Asymmetric and dissymmetric.
Assign appropriate configuration at each stereocenter for the following stereoisomers (A & B):



4. Give two examples of Geometrical isomers
5. Why meso compounds are achiral?
6. What is racemic mixture? Discuss its optical activity
7. Explain exo & endo nomenclature for bicyclic system.
8. Discuss optical purity and enantiomeric excess (ee).
9. Write the structures of Hydrindanes.
10. Give one example of each (a) regioselective & (b) stereoselective reaction

Q.2 Answer any **two** of the following three questions.

[14]

1. Explain nucleophilic displacement at benzylic position with mechanism.
2. Explain the stereoisomerism due to Allenes with suitable example.
3. Discuss R/S nomenclature system for compounds having two stereocenter.

Q.3 Answer the following questions.

[14]

1. What is NGP? Explain with one example.
2. Explain stereo control in the SN2 mechanism with example.
3. Describe stereoisomerism in Biphenyl compounds with examples.

OR**Q.3** Answer the following questions.

[14]

1. Distinguish between enantiomer and diastereomers.
2. Write a note on Isotactic polymer.

Q.4 Answer the following questions.

[14]

- (a) Answer any **two** of the following three questions
1. Write a note on the mechanism & stereochemistry of SNⁱ reaction.
 2. Discuss difference between asymmetric and dissymmetric molecules with examples.
 3. Write a short note on stereospecific polymerization.
- (b) Answer any one of the following two questions
1. Explain SET mechanism with example.
 2. Explain conformational isomerism of Decalines.

Q.5 Answer any **two** of the following four questions.

[14]

1. Write a note on the mechanism & stereochemistry of mixed S_N1 & S_N2 reaction
2. Discuss stereochemistry of As compounds with suitable example.
3. Write a note on rearrangement in allylic system with suitable example.
4. Discuss stereoisomerism due to N-inversion with example.
