

M.Sc. Semester - 4 (CBCS) Examination
Oct/Nov -2020 [OLD COURSE]
STEREOCHEMISTRY (CORE)

Time: 2:00 Hours**Marks: 56****Instructions:**

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Q.1 Answer any seven out of the questions.**[14 Marks]**

1. Define stereochemistry
2. What is optical activity? Define dextrorotatory and levorotatory
3. Explain enantiomers and diastereomers with examples.
4. Discuss Helicity and P & M notation
5. Define atropisomerism with example
6. Discuss Erythro and Threo suitable example
7. Define stereospecific and stereoselective reaction with examples
8. Give nomenclature rules for spiran molecules
9. Discuss dihedral angle
10. What is coupling constant?

Q.2 Answer any two out of three questions.**[14 Marks]**

1. Define conformation and configuration. Discuss conformation analysis of Ethane
2. Discuss conformation analysis of 2,3-Dibromobutane.
3. Discuss Cram's rule with suitable example

Q.3 Answer the following two questions.**[14 Marks]**

1. Give conformational analysis of Butane and discuss which form is more stable.
2. Define prochirality. Discuss Enantiotopic and Diastereotopic ligands with examples.

OR

Q.3 Answer the following two questions.**[14 Marks]**

1. Discuss conformational analysis of cyclohexane with energy diagram
2. Explain Felkin-anh model with example

Q.4 Answer the following three questions**[14 Marks]**

1. Explain Nuclear over house effect with suitable example
2. Explain j coupling constant in geometrical isomers of stilbene and 2-butene
3. Discuss Karplus equation with its modification

Q.5 Answer any two out of four questions.**[14 Marks]**

1. Discuss stereochemistry of Ansa compounds
2. Explain Homotopic and heterotopic faces with examples
3. Discuss stereoregulator polymerization
4. Discuss prochirality of Bicyclo(2.2.0) octane system
