

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

Time: 2:00 Hours

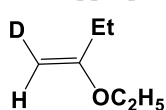
Marks: 56

Instructions:

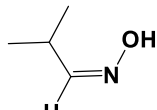
1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any four of the following questions.

Q.1 Answer any seven of the following ten questions.**[14 Marks]**

1. Define: (i) Asymmetric center (ii) Enantiomeric excess
2. Explain conformational isomerism in butane.
3. Give appropriate nomenclature for following:

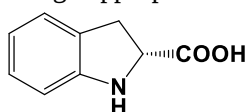


(i)

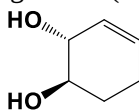


(ii)

4. Assign appropriate configuration (R/S) at each stereocenter for the following stereoisomers:



(i)



(ii)

5. What is optical activity? How will you measure it?
6. Write Fischer structure of following compounds:
 (a). (D)-Glucose (b). (R)-2-Propanol
7. Why bulky group is preferred at equatorial position in cyclohexane? Explain with one example
8. Explain pyrolytic elimination reaction of Xanthate.
9. Explain neighboring group participation effect of Bromine with one example.
10. Explain geminal coupling in six member ring with suitable example.

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

1. What is Prochirality? Discuss topicity in (a) Phenyl acetic acid (2) Acetophenone.
2. Discuss conformation isomerism and stability of di-substituted cyclohexanes with suitable examples.
3. Explain E/Z nomenclature system with suitable example.

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

1. Discuss stability of cis & trans decalin.
2. Explain molecular dissymmetry in Biphenyl compounds.

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

1. Explain E2 elimination of 2-bromobutane.
2. What are stereospecific reactions? Give three examples.

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

1. Write a note on nuclear over hauser effect and its application.
2. Discuss stereo selective reaction with at least two examples.
3. Explain geometrical & optical isomerism in cyclooctene.

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

1. What is stereo electronic effect? Explain Anomeric Vs Gauche effect.
2. How diastereomeric formation can help in resolution of racemic mixture? Explain with suitable example.
3. Explain Felkin-Ahn model with suitable example.
4. Give product of following two reactions: Justify your Answer.

