647510 **MSC4ascE0111** **Seat No :_____**

M.Sc. Semester - 4 (*CBCS*) Examination
Oct/Nov-2020 [OLD COURSE]
ADVANCED STEREO CHEMISTRY (ELECTIVE - 1)

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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1) **Answer any seven from the following ten** : 14

a. Define: Asymmetric and Dissymmetric molecules.
b. Define : meso compound and Homomers.
c. Draw fisher projection formula for Erythrose and threose forms of aldotetrose
d. Explain stereoblock polymers?
e. Classify and define different types of ring systems based on the number of carbon atoms which are common between the two rings.
f. Draw structures of the following:
   a. Spiro(3.3)heptane b. Bicyclo(3.3.2)decane
g. Explain E/Z isomers with suitable example.
h. Draw structure of Bicyclo [2.2.1]heptanes and spiro[3.4]octane
i. Name factors affecting SN1 reactivity.
j. Give difference between conformation and configuration.

2) **Answer any two from the given three questions.** 14

a. What is resolution? Discuss methods of resolution.
b. Explain SN1' and SN2' reaction mechanism with suitable examples.
c. Explain NGP? Explain its stereochemical effects. Give conditions for effective NGP.

3) **Answer a,b,c or a,b.** 14

a. Explain Alder's rule with an example.
b. Explain Bredt's rule with suitable example.
c. What is anchimeric assistance? Explain acetolysis of 7-Norbornenyl tosylate.

Or

a. Write a note on stereochemistry of Decalin.
b. What is racemic mixture? Explain theories of racemization.

4) **Answer any two out of given three questions.** 14

a. Discuss stereochemistry of Quinquivalent P compounds with a double bond with special emphasis on racemization.
b. Discuss bromination of erythro form of 2-bromo-3-butanol.
c. Discuss stereochemistry of SN2 reaction mechanism.

5) **Answer any two out of given four questions.** 14

a. Write a note on stereochemistry and nucleophilic substitution reactions of silicon compounds
b. What are stereoregulated polymers? Explain its types and Discuss method for the synthesis of stereoregulated polymers.
c. Explain geometrical isomerism in disulfoxides of 1,4-dithiane. and discuss stereochemistry of sulphinic esters.
d. What is pyramidal atomic inversion? Discuss ring inversion and pyramidal inversion in 1,3 -Dimethyl piperidine..

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