Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Sc (Non Medical) (2018 Batch) (Sem.–1)

ORGANIC CHEMISTRY

Subject Code : BSNM-101-18

M.Code : 75742

Time : 3 Hrs. Max. Marks : 50

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying ONE marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

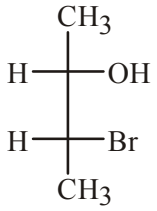
SECTION-A

1. Answer the following :

a. What are free radicals? How are they prepared?

b. What happens to the bond angle with the decrease in *s* character of a hybridized orbital?

c. How can you convert following Fisher projection into Newman and Sawhorse projections?



d. How many symmetry elements/operations can describe the symmetry of a molecule? Name all the symmetry elements/operations.

e. Depict the axial and equatorial bonds of chair conformation.

f. What is ring strain? What types of strains are associated with rings smaller than cyclohexane?

g. Write a short note on banana bonds.

h. Write the mechanism for 1,2 and 1,4-addition reactions.

i. Discuss the mechanism of ozonide formation.

j. Write the mechanism of Corey-House reaction.

SECTION-B

2. What are carbanions? Discuss the shape, stability and chemical reactions of carbanions.

3. What do you understand by resolution? Discuss the chemical method for the resolution of enantiomers.

4. Discuss Baeyer's strain theory and its limitations.

5. What is the orientation in elimination reactions with particular reference to Saytzeff and the Hofmann rule? Give suitable reason to support your answer.

6. Discuss with energy level diagram for possible conformations of ethane and n-butane.

SECTION-C

7. a. Explain briefly the term racemization with suitable examples. 5

   b. Discuss geometric isomerism in alicyclic compounds. 5

8. Discuss briefly the methods of determination of reaction mechanism. 10

9. Explain the followings with suitable mechanism :

   a. Hydroboration-oxidation 4

   b. Metal-ammonia reduction 3

   c. Wurtz reaction 3

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.