

**Total Pages :6**

**Roll No. -----**

**MCH-502**

**Organic Chemistry-1**  
**M.Sc. Chemistry (MSCCH-20)**  
**1st Semester, Examination, June 2022**

Time: 2 Hours

Max. Marks: 40

Note : This paper is of Forty (40) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

**Section – A**

(Long Answer – type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Ten (10) marks each. Learners are required to answer any two (02) questions only.

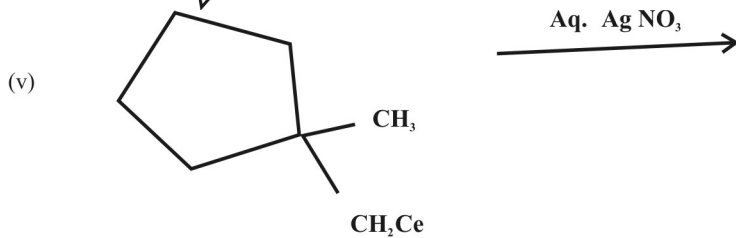
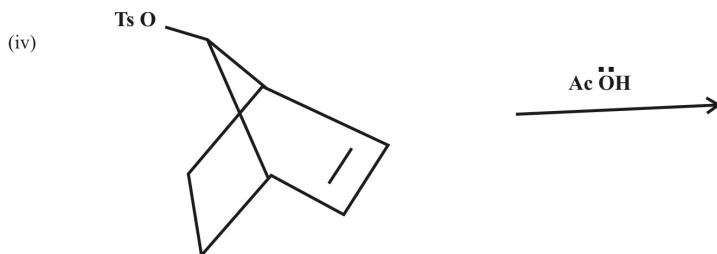
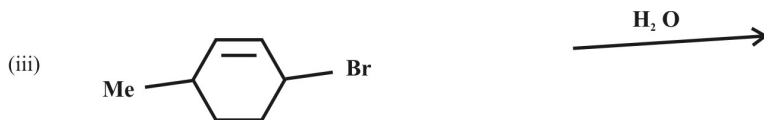
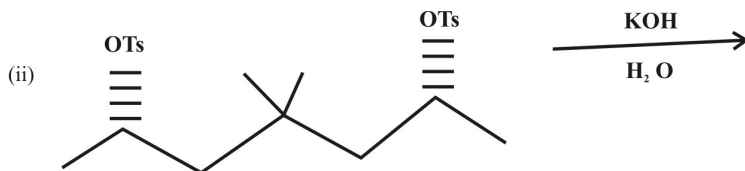
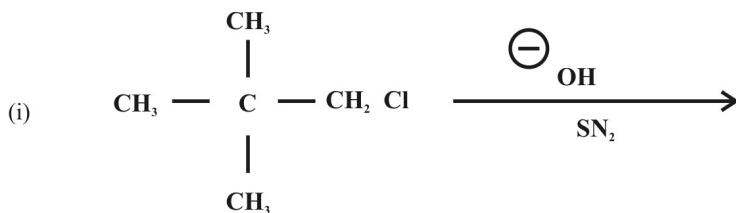
[2 x 10 = 20]

P.T.O.

1. Describe the Octant rule and explain its application in the determination of configuration in chiral cyclohexanones.
2. What is Kinetic isotope effect? What is its importance in the understanding of reaction mechanism? Explain by giving suitable example.
3. Explain the SN1 mechanisms by giving suitable example. Draw its energy profile diagram. What are the factors responsible for affecting the rate of SN1 reactions?
4. Give the mechanism of SE1 and SE2 reactions with suitable example.

P.T.O.

5. Predict the product in the following reactions.



P.T.O.

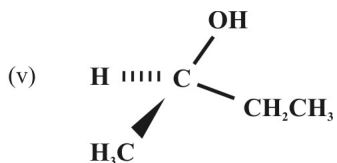
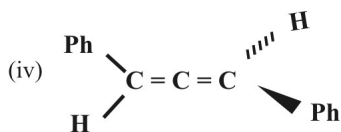
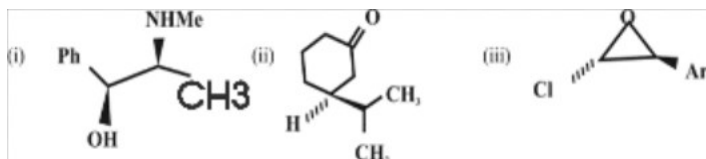
## SECTION – B

(Short – answer – type questions)

Note : Section ‘B’ contains Eight (08) short – answer type questions of Five (05) marks each. Learners are required to answer any Four (04) questions only.

(4×5 = 20)

1. Assign the R, S configuration in the following



P.T.O.

2. Write short note on the following
  - (a) Symmetry elements
  - (b) Enantiotopic ligands
  
3. Give brief account on
  - (a) Planar chirality
  - (b) Fischer projections
  
4. What is Baker – Nathan effect?
  
5. How the strength of acids and bases affected.  
Explain.
  
6. What is the rate determining step of a reaction  
and how it is determined?
  
7. What are ambident nucleophiles? Give any three  
examples.

P.T.O.

8. Table the following pairs of compounds as homomers, enantiomers or diastereomers.

