

**K-382**

Total Pages : 4

Roll No. ....

## **MSCCH-502**

### **Organic Chemistry-I**

M.Sc. Chemistry (MSCCH)

1st Semester Examination, 2023 (Dec.)

**Time : 2 Hours]**

**Max. Marks : 70**

**Note :** This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

### **SECTION-A**

#### **(Long Answer Type Questions)**

**Note :** Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

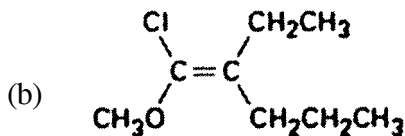
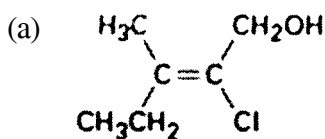
1. (a) How will you distinguish between singlet and triplet carbenes based on their stability and stereochemical behaviour in addition reactions?  
(b) What is Huckel's rule? Discuss aromaticity of heterocyclic compounds.
2. (a) What is crown ether? Give method of preparation of crown ether. Give some applications of crown ether.  
(b) Resonance energy of benzene is much more higher than 1, 3-butadiene. Why?
3. (a) What are Biphenyls? Discuss the stereochemistry of biphenyls.  
(b) Differentiate between stereo selective and stereospecific reactions.
4. (a) Explain Cram's rule and its modifications along with suitable example.  
(b) Explain prostereoisomerism with example.
5. (a) What is Hammond's postulate? Give example of kinetic and thermodynamic control of product formation.  
(b) What are homoaromatic compounds? Explain by giving example.

## SECTION-B

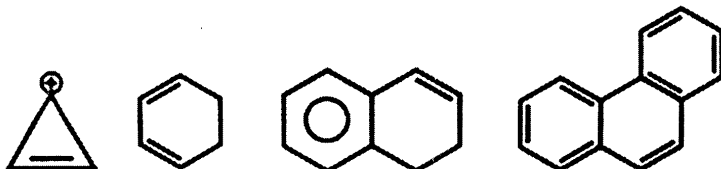
### (Short Answer Type Questions)

**Note :** Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. Give order with suitable reason for the stability of following carbanions Cyclopentyl, allyl, benzyl
2. Explain hyperconjugation with suitable example.
3. Assign E or Z configuration for the following :



4. 4 Identify the aromatic and antiaromatic compounds in the following :



5. Write short note on R and S nomenclature.
  6. What are ambident nucleophile? Give two example.
  7. Discuss the stability of disubstituted cyclohexane.
  8. Write a short note on :
    - (a) Absolute cohligation.
    - (b) Fischer projection.
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