UUCMS No. | | | | | | | | | | | |

B.M.S. COLLEGE FOR WOMEN AUTONOMOUS

BENGALURU-560004

SEMESTER END EXAMINATION-APRIL/MAY- 2023

M.Sc. in Chemistry-I Semester

ORGANIC CHEMISTRY-I

Course code: MCH102T **QP Code: 11008**

Time: 3 hrs **Max.Marks:70**

Instruction: *Answer Question* ***No.1*** *and any* ***FIVE*** *of the remaining.*

1. Answer any ***TEN*** **questions** **(2×10 =20)**

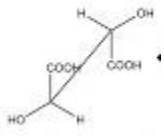
a) Illustrate Tautomerism with example?

b) What is cross conjugation? Give an example.

c) Discuss non-classical carbocation with an example.

d) State Curtin-Hammett principle.

e) Convert the following projection into Newman and Fischer projections.



f) Illustrate Prelog's rule.

g) Write the mathematical expression for Taft equation and elaborate the terms.

h) Outline any two methods of generation of carbanion.

i) Give any two example of an ambidentate nucleophile.

j) Draw the structural formulae of the fallowing carbohydrates.

i) Lactose ii) Gentiobiose

k) Give any one synthesis of coumarin.

l) What are deoxy sugars? Give an example.

2. a) Give an account of generation and reactivity of nitrenes.

b) Illustrate hyperconjugation with suitable example.

c) Write a note on cyclodextrins. **(4+3+3=10)**

3. a) Outline the generation, structure and stability of free radicals.

b) Give an account of Hammett equation and linear free energy relationship. **(5+5=10)**

4. a) State and explain Cram's rule with suitable example.

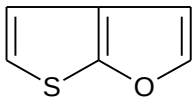
b) Write the synthesis and reaction of imidazole.

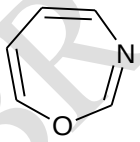
c) Write a note on conformational analysis of cyclobutane and cyclopentane.

(4+3+3=10)

5. a) Elucidate the structure of sucrose.

b) Write the IUPAC nomenclature of following heterocyclic compounds:

i) 

ii) 

(5+5=10)

6. a) Outline briefly the bonding patterns in C-60 fullerenes.

b) Explain the method of determination of configuration of aldotetrose

c) List out the three major differences between S_N^1 and S_N^2 mechanisms.

(4+3+3=10)

7. a) Write a note on:

i) Anchimeric effect ii) Steric effect.

b) Write the differences between enantiotopic and diastereotopic groups and faces with proper examples.

c) Outline the synthesis of aldonic acid. **(4+3+3=10)**

8. a) Describe briefly the synthesis of Uronic acid.

b) Write a short note on ionophore and micelles.

c) Discuss SE_2 mechanism with suitable examples.

(4+3+3=10)