

Roll.No.

22UCHCT2003

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc.Chemistry - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - II

22UCHCT2003 - Basics of Organic Chemistry

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain sp^3 hybridisation and the structure of methane molecule.
2. Discuss the methods of formation and stability of carbocations.
3. Outline the mechanisms of E1 and E2 reactions.
4. Differentiate nucleophilic, electrophilic and free radical addition reactions with suitable examples.
5. Explain the following reactions with suitable examples:
 - i) Wurtz reaction
 - ii) Kolbe's electrolytic method
 - iii) Dieckmann cyclization
6. Predict the products of ozonolysis reactions of 1-butene and 2-butene.
7. Distinguish the terms aromaticity, non-aromaticity and antiaromaticity with appropriate examples.
8. Explain the orientation of electrophilic substitution reaction in monosubstituted benzene.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Account for the following:
 - i) Formic acid is stronger than acetic acid
 - ii) Methylamine is stronger base than ammonia
 - iii) 1,3-butadiene undergoes both 1,2 and 1,4 addition
 - iv) Phenol is more acidic
 - v) Propene is more stable than ethylene
10. Compare S_N1 and S_N2 reactions with examples and outline the mechanisms.
11. Predict the relative stabilities of cyclic hydrocarbons using Baeyers Strain theory. Give its limitations.

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12. Outline the mechanism for the addition of HBr to propene in absence and in presence of benzoyl peroxide.
13. Explain the following reactions with mechanisms:
- i) Nitration of benzene
 - ii) Halogenation of benzene
 - ii) Friedel-Crafts alkylation
 - iii) Friedel-Crafts acylation
