

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. END SEMESTER EXAMINATIONS APRIL-2022

SEMESTER - I

17UCHCT1001 - General Chemistry - I

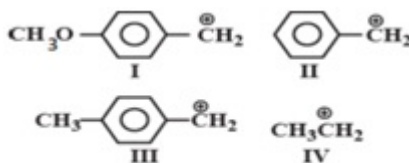
Total Duration : 3 Hrs.

Total Marks : 60

Section A

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

1. a) Why are allyl and benzylic radicals always more stable? (2)
b) Write a note on nucleophiles (3)
2. Explain the mechanisms of E_1 elimination reactions.
3. Discuss the geometry of NH_3 , PCl_5 by VSEPR theory.
4. "Green Chemistry is Sustainable Chemistry" - Explain the Statement.
5. How can chemical accidents be prevented?
6. What are the conditions for effective Hydrogen bonding? Discuss the types of hydrogen bonding with examples.
7. Discuss the relative stabilities of the following cations.



8. Differentiate the Saytzeff's and Hofmann rule.

Section B

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

9. Explain the hybridization of carbon atom in methane, ethylene .
10. a) Discuss the stereochemistry of SN_1 and SN_2 mechanisms by taking the examples of alkaline hydrolysis of methyl bromide and t-butyl bromide and mention the factors regulating the mechanism. (6)
b) Illustrate Saytzeff's rule with an example (2)
c) Vinyl chloride is inert towards nucleophilic substitution but allyl chloride is very reactive. Comment on it (2)

Contd...

11. a) Draw Born-Haber's cycle for the formation of solid NaCl.
Explain the various terms involved in it. (4)
- b) Draw MO diagram of O_2 molecule and calculate its bond order
& magnetic nature. (4)
- c) State the Fajan's rule (2)
12. What is green chemistry? What are the twelve principles of green chemistry?
13. Write a note on safe handling and storage of chemicals in laboratory.
