

Roll.No.

20UCHCT1001

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 - I

20UCHCT1001 - General Chemistry - I

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Discuss the hybridisation and molecular structure of methane and acetylene.
2. Describe about the handling of acids, ethers and toxic chemicals.
3. Classify E1 and E2 elimination reactions.
4. Mention the applications of green chemistry .
5. Discuss the general characteristics of ionic compounds.
6. Relate the Hoffmann and Saytzeff rules in the context of elimination reactions. Provide examples to illustrate each rule.
7. Predict the structure of BF_3 and H_2O using VSEPR theory.
8. Differentiate between inductive effect and mesomeric effect.

Section C

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

9. Explain the types and hybridization of carbocation, carbanion, and free radical along with their relative stability.
10. Compare the mechanisms of substitution reactions (SN_1 and SN_2), including their characteristics, examples, and factors influencing the reaction.
11. Explain the nature of metallic bonding and the characteristics of metals that arise from metallic bonding.
12. List out and explain the twelve principles of green chemistry.
13. Deduce steps to mitigate various laboratory hazards like chemicals, fire, inhalation of toxic gases, eye injuries and heat burns.
