



BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY | CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL



POST MID TERM EXAMINATION -2024-25

CHEMISTRY (043)

Class : XI
Date : 07/01/2025

Duration: 1 Hr
Max. Marks: 25

Instructions:

- There are three sections A, B, and C with 13 questions in total, Section A has 3 Multiple Choice Questions and 2 Assertion Reasoning based Question of one mark each, Section B has 4 questions of two marks each and Section C has 4 questions of three marks each.
- All questions are compulsory.
- Calculators are not allowed.

Section A

- Which of the following is an example of an electrophile? 1
(a) OH^-
(b) NH_3
(c) H^+
(d) Cl^-
- Identify the correct IUPAC name of the compound: $\text{CH}_3 - \text{CH}_2 - \text{CH}=\text{CH}_2$. 1
(a) 1-Butene
(b) 2-Butene
(c) Butane
(d) Propene
- What is the general formula of alkanes? 1
(a) C_nH_{2n}
(b) $\text{C}_n\text{H}_{2n+2}$
(c) $\text{C}_n\text{H}_{2n-2}$
(d) $\text{C}_n\text{H}_{2n+1}$

Assertion-Reasoning (A/R)

- Assertion (A): Alkanes are saturated hydrocarbons.
Reason (R): Alkanes contain only sigma bonds between carbon atoms. 1

- (a) Both A and R are correct, and R explains A.
 (b) Both A and R are correct, but R does not explain A.
 (c) A is correct, but R is incorrect.
 (d) A is incorrect, but R is correct.
5. Assertion (A): Benzene is more stable than expected from its structure. 1
 Reason (R): Benzene undergoes addition reactions readily.
 (a) Both A and R are correct, and R explains A.
 (b) Both A and R are correct, but R does not explain A.
 (c) A is correct, but R is incorrect.
 (d) A is incorrect, but R is correct.

Section B

6. Define the term functional group. Give an example of a compound containing a functional group. 2
7. Differentiate between homolytic and heterolytic bond fission with suitable examples. 2
8. Write the structure and IUPAC name of the following compounds:
 (a) An alkene with 5 carbon atoms having a double bond at the second position.
 (b) A straight-chain alkyne with 4 carbon atoms. 2
9. Explain the term resonance with reference to benzene. Draw its resonance structures. 2

Section C

10. Write the mechanism of the free radical substitution reaction of methane with chlorine. 3
11. What are isomers? Write the structural isomers of C_4H_{10} and name them using IUPAC rules. 3
12. Convert the following: 3
 (a) Ethene to Ethane.
 (b) Ethene to Ethanol.
 (c) Benzene to Nitrobenzene.
13. Write short notes on the following: 3
 (a) Aromaticity.
 (b) Electrophilic substitution reactions of benzene (any two).

-----All the Best-----