



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL



Post Mid Term Examination 2025-26

CHEMISTRY (043) Answer Key

Class : XI
Date : 08/01/2026

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) CH_3^+
- Identify the correct IUPAC name of CH_3CHO . 1
(b) Ethanal
- What is the general formula of an alkyne? 1
(c) $\text{C}_n\text{H}_{2n-2}$
- (a)
- (d)

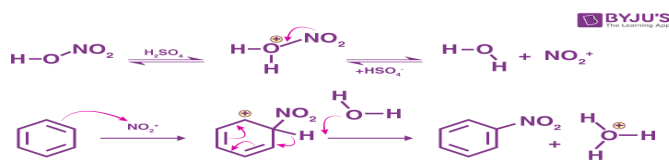
Section B

- Shifting of sp^3 hybridised H from carbon to sp^2 hybridised C is known as Hyperconjugation. $\text{CH}_3\text{—CH}_2^+ \rightarrow \text{CH}_2=\text{CH}_2 + \text{H}^+$ 2
- Equal distribution of electrons between the fragments is known as homolytic, and unequal distribution of electrons is known as heterolytic cleavage 2
- (a) $\text{H}_3\text{C—HC=CH—CH}_2\text{—CH}_3$ Pent-2-ene
(b) C-C-C triple bond C But-2-yne 2

9. +I effect :- electron donating group such as CH₃ C₂H₅ are the donating groups.
 -I effect :- electron withdrawing group such as NO₂ Cl F Br CN etc are withdrawing group which attract the electron from the compounds.

2

Section C



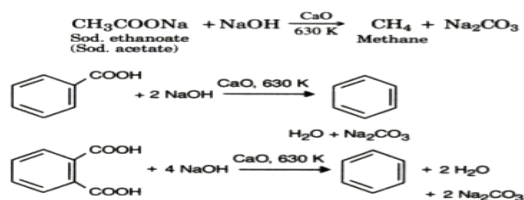
NO₂⁺ is generated from H₂SO₄ and HNO₃

3

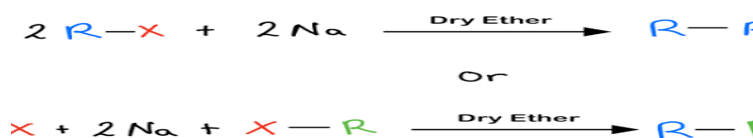
11. Explain the following reactions:

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(i)



(ii) Wurtz reaction



- 12.

3

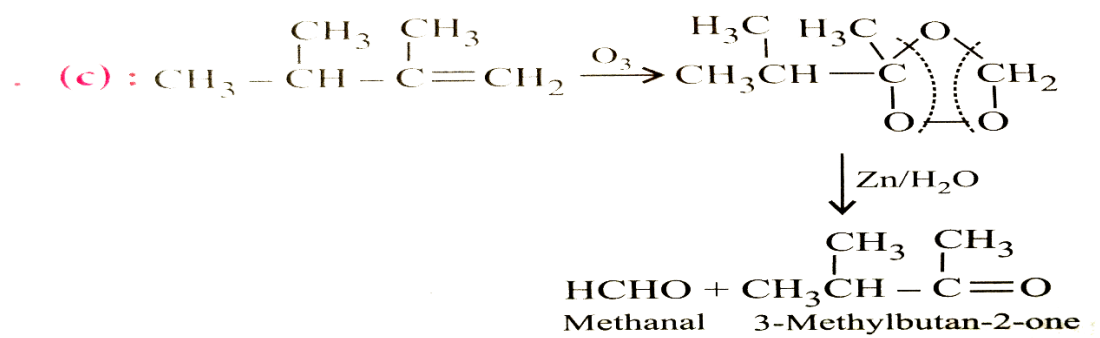
- (a) addition of H₂ Catalyst Ni/Pt
 (b) Cl₂ /Sunlight and Wurtz reration in presence of dry ether
 (c) $\text{C}_6\text{H}_6 + \text{H}_2\text{SO}_4 + \text{HNO}_3 \rightarrow \text{C}_6\text{H}_5\text{NO}_2 + \text{H}_2\text{O}$

- 13 a Write short notes on the following:

3

(a) The conformations of ethane are the different spatial arrangements of its atoms due to rotation around the carbon-carbon single bond, primarily the **staggered** and **eclipsed** conformations. The staggered conformation is more stable because the hydrogen atoms are as far apart as possible, minimizing torsional strain and electron repulsion. In contrast, the eclipsed conformation is less stable because the hydrogen atoms are aligned, leading to maximum repulsion.

- (b) Ozonolysis of But-2-ene followed by zinc dust distillation.



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