

CBSE Class 12 Chemistry Chapter 12 Aldehydes, Ketones, and Carboxylic Acids Worksheet – Set 4

Q1. Jone's reagent is

- (a) Acidified KMnO_4 solution
- (b) Acidified $\text{K}_2\text{Cr}_2\text{O}_7$ solution or Chromic acid and Sulphuric acid solution
- (c) Alkaline $\text{K}_2\text{Cr}_2\text{O}_7$ solution
- (d) None of the above

Q2. An organic compound contains hydrogen, oxygen, and a single carbon atom and responds positively to Tollen's reagent. The compound is

- (a) HCHO
- (b) CH_3OH
- (c) CH_3CHO
- (d) None of the above

Q3. Which of the following alkene will yield acetone on ozonolysis?

- (a) $\text{CH}_2=\text{CH}_2$
- (b) $\text{CH}_3\text{CH}=\text{CH}_2$
- (c) $(\text{CH}_3)_2\text{C}=\text{C}(\text{CH}_3)_2$
- (d) None of the above

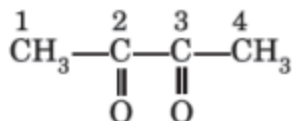
Q4. Which of the following combination give tertiary butyl alcohol when treated with the Grignard reagent?

- (a) $\text{CH}_3\text{MgBr} + \text{CH}_3\text{COCH}_3$
- (b) $\text{C}_2\text{H}_5\text{MgBr} + \text{CH}_3\text{COCH}_3$
- (c) $\text{CH}_3\text{MgBr} + (\text{CH}_3)_3\text{COH}$
- (d) None of the above

Q5. What happens when the water gas ($\text{CO} + \text{H}_2$) is passed through an electric discharge at low pressure?

- (a) HCHO is formed
- (b) HCOOH is formed
- (c) CH_3CHO is formed
- (d) CO_2 and H_2O are formed

Q6. What are the IUPAC and the common name of the following compound?



Q7. Why do aldehyde and ketone have a high dipole moment?

Q8. Why is ethanol distilled out during the preparation of acetaldehyde?

Q9. What is formalin?

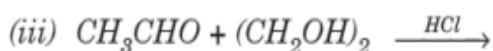
Q10. Name the reagents that can be used to bring about the following conversion.

- (a) Ethane nitrile to Ethanal
- (b) Allyl alcohol to Propenal
- (c) But-2-ene to Ethanal

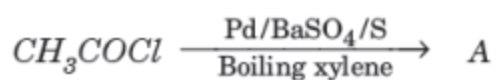
Q11. Arrange the following carbonyl compounds in order of reactivities in the nucleophilic addition reaction.

Benzaldehyde, p-tolualdehyde, p-nitro benzaldehyde, and acetophenone.

Q12. Complete the reaction.



Q13. Identify A in the following reaction.

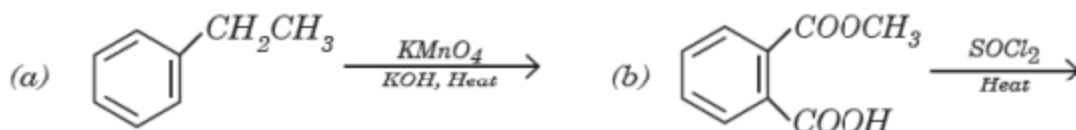


Q14. Why do aldehyde and ketones have lower boiling points than alcohol and carboxylic acid?

Q15. Which bond, C-OH or CO-H of the carboxylic acid, is broken when

- (a) Acid chloride is formed
- (b) Acid reacts with zinc
- (c) Acid reacts with ammonia to form amide

Q16. Predict the product of the following reaction.



Q17. Discuss the reaction for the preparation of the benzoic acid from toluene?

Q18. An organic compound with molecular formula $\text{C}_9\text{H}_{10}\text{O}$ forms 2, 4-DNP derivative, reduces Tollen's reagent and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1, 4-benzene dicarboxylic acid. Identify the compound.

Q19. Give the different products formed when butyne undergoes

- (a) A hydroboration oxidation reaction and
- (b) Hydration in the presence of acidic amalgamation

Q20. An organic compound (A) has the molecular formula ($\text{C}_5\text{H}_{10}\text{O}$). It does not reduce Tollen's reagent but forms an orange precipitate with a 2, 4-DNP reagent. It does not give a yellow deposit on treatment with NaOH and I_2 . Under vigorous conditions on oxidation, it provides ethanoic acid and carboxylic acid (B). The sodium salt of (B) gives a hydrocarbon (C) in Kolbe's electrolytic reduction. Identify (A), (B), and (C) and write the reactions involved.