

Aldehydes, Ketones and Carboxylic Acids

1. When acetaldehyde is heated with Fehling's solution, it gives a red precipitate of:

- (a) Cu
- (b) CuO
- (c) CuSO₄
- (d) Cu₂O

Answer: (d) Cu₂O

2. Oxidation of cyclohexene using acidified KMnO₄ will give

- (a) adipic acid
- (b) hexane-1,6-dial
- (c) cyclohexane carboxylic acid
- (d) cyclopentane carboxylic acid

Answer: (a) adipic acid

3. Formic acid and formaldehyde can be distinguished by treating with:

- (a) Benedict's solution
- (b) Tollens' reagent
- (c) Fehling's solution
- (d) NaHCO₃

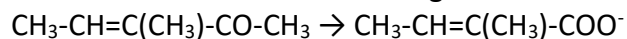
Answer: (d) NaHCO₃

4. Which of the following orders of relative strengths of acids is correct?

- (a) ClCH₂COOH > FCH₂COOH > BrCH₂COOH
- (b) ClCH₂COOH > BrCH₂COOH > FCH₂COOH
- (c) BrCH₂COOH > ClCH₂COOH > FCH₂COOH
- (d) FCH₂COOH > ClCH₂COOH > BrCH₂COOH

Answer: (d) FCH₂COOH > ClCH₂COOH > BrCH₂COOH

5. Which is the most suitable reagent for the following conversion?



- (a) Tollen's reagent
- (b) Benzoyl peroxide
- (c) I₂ and NaOH solution
- (d) Sn and NaOH solution

Answer: (c) I₂ and NaOH solution

6. Which of the following is not a fatty acid?

- (a) Stearic acid
- (b) Palmitic acid
- (c) Propionic acid
- (d) Phenyl acetic acid

Answer: (d) Phenyl acetic acid

7. The formation of cyanohydrin from a ketone is an example of:

- (a) Electrophilic addition
- (b) nucleophilic addition
- (c) Nucleophilic substitution
- (d) electrophilic substitution

Answer: (b) nucleophilic addition

8. Acetone is mixed with bleaching powder to give:

- (a) Ethanol
- (b) acetaldehyde
- (c) chloroform
- (d) phosgene

Answer: (c) chloroform

9. Ketones react with Mg-Hg over water gives:

- (a) alcohols
- (b) pinacols
- (c) pinacolones
- (d) none of these

Answer: (b) pinacols

10. Methyl magnesium bromide on reaction with SO_2 followed by hydrolysis gives

- (a) methyl sulphonic acid
- (b) methane sulphinic acid
- (c) dithio acetic acid
- (d) ethanethiol

Answer: (b) methane sulphinic acid

11. Which aldehyde will give Cannizzaro's reaction?

- (a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$
- (b) $\text{CH}_3\text{CH}_2\text{CHCHO}$
- (c) $(\text{CH}_3)_3\text{CCHO}$
- (d) $(\text{CH}_3)_2\text{CH}_2\text{CH}_2\text{CHO}$

Answer: (c) $(\text{CH}_3)_3\text{CCHO}$

12. Carboxylic acids are more acidic than phenol and alcohol because of

- (a) Formation of dimers
- (b) Highly acidic hydrogen
- (c) Resonance stabilization of their conjugate base
- (d) Intermolecular hydrogen bonding

Answer: (c) Resonance stabilization of their conjugate base

13. Propionic acid with Br_2/P yields a dibromo product. Its structure would be:

- (a) $\text{CH}_2\text{BrCH}_2\text{COBr}$
- (b) $\text{CH}_2\text{BrCHBrCOOH}$
- (c) $\text{CHBr}_2\text{CH}_2\text{COOH}$
- (d) $\text{CH}_3\text{CBr}_2\text{COOH}$

Answer:(d) $\text{CH}_3\text{CBr}_2\text{COOH}$

14.Oxalic acid on treatment with conc. H_2SO_4 gives:

- (a) CO only
- (b) CO_2 only
- (c) $\text{CO}_2 + \text{H}_2\text{O}$
- (d) $\text{H}_2\text{O} + \text{CO} + \text{CO}_2$

Answer:(d) $\text{H}_2\text{O} + \text{CO} + \text{CO}_2$

15.The reaction in which hydrocarbons are formed when aldehydes and ketones are reduced with amalgamated zinc and conc. HCl, is called:

- (a) Dow reduction
- (b) Clemensen's reduction
- (c) Cope reduction
- (d) Wolff-Kishner reduction

Answer:(b) Clemensen's reduction