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) $CuSO_4$
(d) Cu_2O
Answer: (d) Cu_2O

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) $NaHCO_3$
Answer:(d) $NaHCO_3$

4.Which of the following orders ofrelative strengths of acids is correct?
(a) $ClCH_2COOH > FCH_2COOH > BrCH_2COOH$
(b) $ClCH_2COOH > BrCH_2COOH > FCH_2COOH$
(c) $BrCH_2COOH > ClCH_2COOH > FCH_2COOH$
(d) $FCH_2COOH > ClCH_2COOH > BrCH_2COOH$
Answer: (d) $FCH_2COOH > ClCH_2COOH > BrCH_2COOH$

5.Which is the most suitable reagent for the following conversion?
$CH_3\text{-}CH=C(CH_3)\text{-}CO\text{-}CH_3 \rightarrow CH_3\text{-}CH=C(CH_3)\text{-}COO^-$
(a) Tollen'sreagent
(b) Benzoyl peroxide
(c) I_2 and NaOH solution
(d) Sn and NaOH solution
Answer: (c) I_2 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 SO2 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) $CH_3CH_2CH_2CHO$
(b) CH_3CH_2CHCHO
(c) $(CH_3)_3CCHO$
(d) $(CH_3)_2CH_2CH_2CHO$
Answer: (c) $(CH_3)_3CCHO$

12.Carboxylic acids are more acidic than phenol and alcohol because of
(a) Formation of dimers
(b) Highly acidic hydrogen
(c) Resonance stabilization oftheir conjugate base
(d) Intermolecular hydrogen bonding
Answer: (c) Resonance stabilization oftheir conjugate base

13.Propionic acid with Br_2/P yields a dibromo product. Its structure would be:
(a) CH_2BrCH_2COBr
(b) $CH_2BrCHBrCOOH$
(c) $CHBr_2CH_2COOH$
(d) CH_3CBr_2COOH

Answer:(d) CH_3CBr_2COOH

14.Oxalic acid on treatment with conc. H2S04 gives:
(a) CO only
(b) CO_2 only
(c) $CO_2 + H_2O$
(d) $H_2O+CO+CO_2$
Answer:(d) $H_2O+CO+CO_2$

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