SHORT QUESTIONS

Q.1 How will you distinguish between propanal and propanone?

Ans. Fehling solution, Benedict solution or Tollen's reagent oxidises propanal but not propanone e.g.,

$$CH_3CH_2CHO + 2[Ag(NH_3)_2]^+ + H_2O \longrightarrow CH_3CH_2COOH + 2Ag + 2NH_4^+$$

$$CH_3\text{-}COH_3 + 2Ag(NH_3)_2^+ + H_2O \longrightarrow \text{No reaction}$$

Q.2 Give the name and formula of two substance which undergo cannizzaro reaction.

Ans. The compounds which have no α-carbon or no hydrogen at α-carbon undergo cannizzaro reaction. e.g.,

HCHO (Formaldehyde)

C_6H_5CHO (Benzaldehyde)

Q.3 What is disproportionation reactions?

Ans. The reactions in which same compound is oxidised and reduced are called self oxidation reduction reaction or disproportionation reaction. e.g.,

$$2HCHO + NaOH \longrightarrow CH_3OH + HCOONa$$

$$2C_6H_5CHO + NaOH \longrightarrow C_6H_5CH_2OH + C_6H_5\text{–}\overset{\overset{O}{\|}}{C}\text{–}\overset{-\ +}{O}Na$$

Q.4 How will you distinguish between ethanal and propanal?

Ans. Ethanal give positive iodoform test while propanal does not:

$$CH_3CHO + 4NaOH + 3I_2 \longrightarrow CHI_3 + HCOONa + 3NaI + 3H_2O$$

$$CH_3CH_2CHO + NaOH + I_2 \longrightarrow \text{No reaction}$$

Q.5 What is aldol?

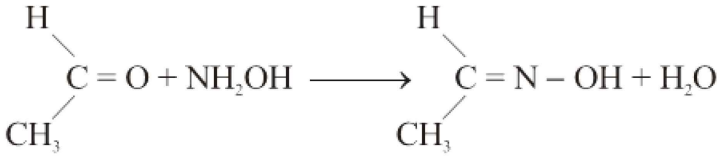
Ans. The compound which contain one aldehydic and one hydroxyl group in it is called aldol. e.g.,

$$CH_3 - \underset{\displaystyle OH}{\underset{|}{CH}} - CH_2 - CHO$$

3-hydroxy butanal

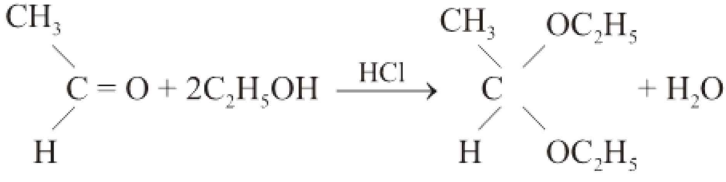
Q.6 What is oxime and how it is prepared?

Ans. When an aldehyde or ketone reacts with hydroxylamine, the addition product is called oxime. e.g.,



Q.7 What is acetal? What is its use?

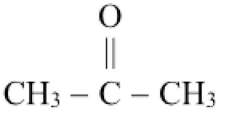
Ans. Aldehydes react with alcohols in the presence of dry hydrogen chloride gas to form acetal.



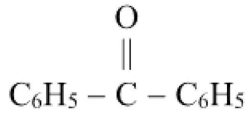
The reaction may be used to protect aldehyde group against alkaline oxidising agent. To regenerate aldehyde, the acetal is hydrolysed in the presence of an acid.

Q.8 What is difference between symmetrical and unsymmetrical ketones?

Ans. The ketone having similar alkyl or aryl group on both side of carboxyl group is called symmetrical ketone e.g.,

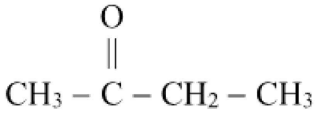


(Di-methyl ketone)

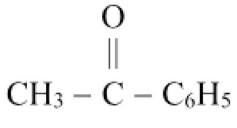


(Diphenyl ketone)

The ketone in which two different alkyl or aryl groups are attached with carbonyl group is called unsymmetrical ketone.



(Ethyl methyl ketone)



(Methyl-phenyl ketone)