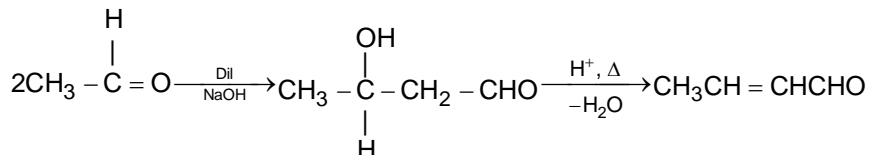


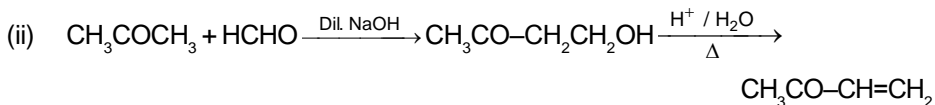
## • Points to remember in Aldehyde & ketone

### Aldol condensation :

Carbonyl compounds having acidic  $sp^3 \alpha$ -H shows this reaction in presence of dil. NaOH or dil. acid.

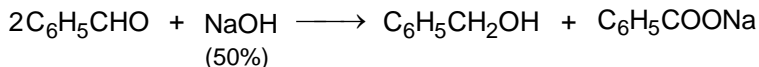
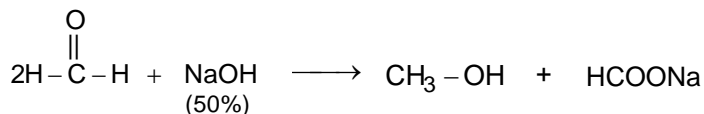


Crossed aldol condensation

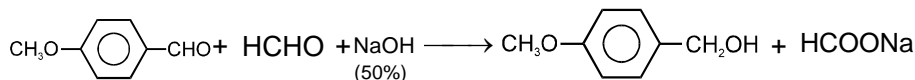


### Cannizzaro reaction :

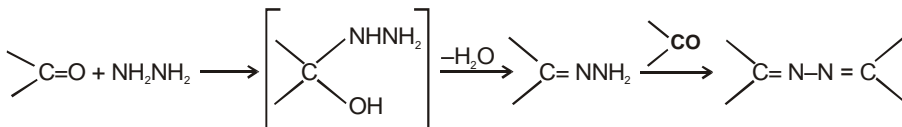
Carbonyl compounds not having  $sp^3 \alpha$ -H shows following disproportionation reaction



Crossed Cannizzaro reaction :



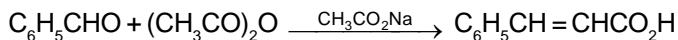
### Formation of hydrazones and azines



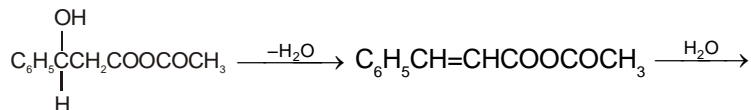
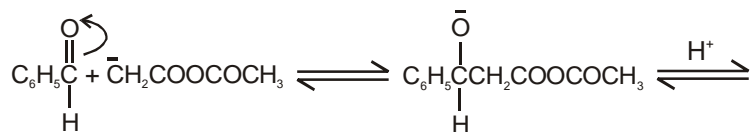
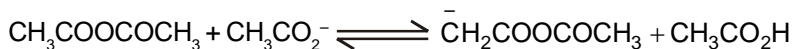
### Perkin reaction :

When benzaldehyde (or any other aromatic aldehyde) is heated with the

anhydride of an aliphatic acid (containing two  $\alpha$ -hydrogen atoms) in the presence of its sodium salt, condensation takes place to form a  $\beta$ -arylacrylic acid ; e.g., with acetic anhydride and sodium acetate, cinnamic acid is formed.

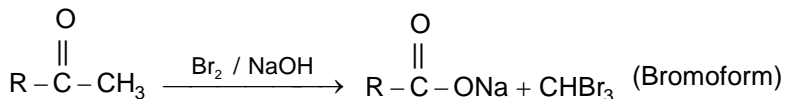


**Mechanism :**



### Haloform reaction :

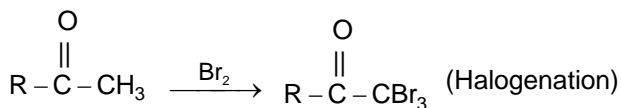
Acetaldehyde and methylalkyl ketones react rapidly with halogen ( $\text{Cl}_2$ ,  $\text{Br}_2$  or  $\text{I}_2$ ) in the presence of alkali to give haloform and acid salt.



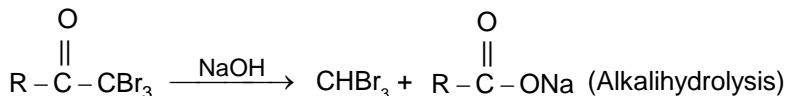
In this reaction  $-\text{CH}_3$  of  $\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_3-\text{C}- \end{array}$  group is converted into haloform as it contains acidic hydrogen atom and rest-part of alkyl methyl ketone give acid salt having carbon atom corresponding to alkyl ketone.

Preparation of haloform from methylketone involves two steps.

#### (a) Halogenation



## (b) Alkali hydrolysis



**Note :** This reaction is used to distinguish the presence of  $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-$  group.

### Other reactions :

