

Daily Tutorial Sheet-8

Level-2

96.(C) CHO + CH₃ - C - OEt
$$\frac{C_2H_5ONa}{C_2H_5OH, \Delta}$$

(Visualise cross type aldol condensation)

$$\begin{array}{c} C\,H_2 - COOEt \\ | & (Loses\,\alpha\,-H) \end{array} \xrightarrow{EtONa} \begin{array}{c} \Theta \\ C\,H_2 - COOEt \\ enolate \ type \ carbanian \ (resonance \ stabilised) \end{array}$$

$$\begin{array}{c}
\Theta \\
\text{CH}_2 - \text{COOEt} + \\
\text{(as Substrate)}
\end{array}$$

$$\begin{array}{c}
\Delta \\
\text{CHO}
\end{array}$$

$$\begin{array}{c}
\Delta \\
\text{CH} = \text{CH COOEt}$$

97.(D)
$$H_2C$$

COOEt

* If (Y) is further heated, then it forms an anhydride

$$\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_2-\text{COOH} & \xrightarrow{\Delta} \\ \mid \\ \mid \\ \text{COOH} \end{array} \qquad \begin{array}{c} \text{Me} \\ \xrightarrow{-\text{H}_2\text{O}} \end{array} \qquad \begin{array}{c} \text{O} \\ \text{(Methyl succinic anhydride)} \end{array}$$

98.(D)
$$\stackrel{\circ}{\downarrow}_{1}^{2} \stackrel{\circ}{\downarrow}_{3}^{4} \stackrel{\circ}{\downarrow}_{5} \stackrel{\circ}{\downarrow}_{6} \stackrel{\circ}{\longrightarrow} \stackrel{\circ}{\longrightarrow}$$

(Intramolecular aldol condensation)

(Intramolecular claisen condensation)

Ketone side loses α -H atom and ester side loses alkoxide to give β -dicarbonyl compound.

101.(C)
$$(\frac{4}{C}H_2 - \frac{3}{C}H_2 - \frac{2}{C}H_2 - \frac{0}{C}H_2 - \frac{0}{C}$$



102.(A) Acyl nucleophilic substitution is a Nucleophilic addition – elimination reaction. X^- : Leaving group is very important apart from Y^- : a nucleophile.

 NH_2^- is poor leaving group (strong base) and Cl^- is poor nucleophile

103.(A)
$$CH_3 - C \xrightarrow{O} \xrightarrow{CI + Me - CH - OH} \xrightarrow{-HCI} CH_3 - C - O - CH - Me$$

Clearly the product retains same configuration.

104.(D) Calcium adipate
$$A \longrightarrow CO_2$$
 O PhCO₃H O (Baeyer Villiger oxidn.)

 CH_3COCl or $(CH_3CO)_2O$ being acid derivatives will acetylate alcoholic group i.e., H attached to -OH group will be acetylated.

105.(C) Primary amide produce effervescence due to $N_2(g)$ on reaction with $NaNO_2$ and conc. HCl.