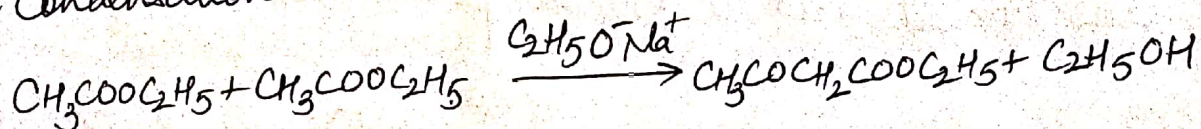


Claisen Condensation

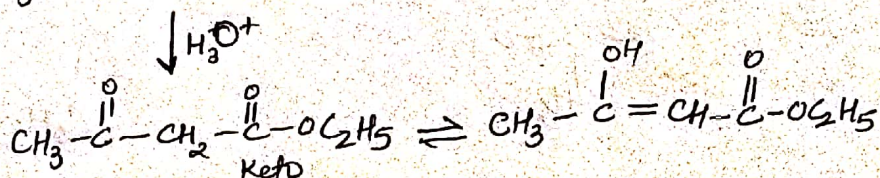
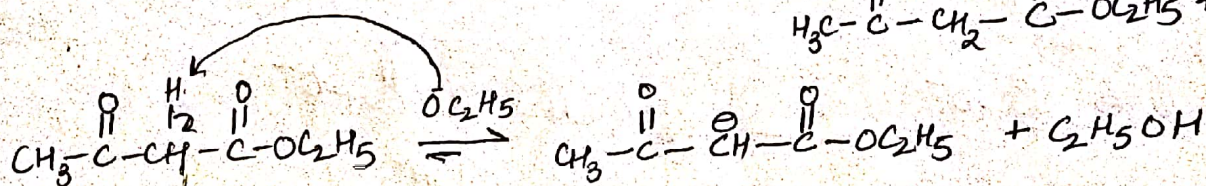
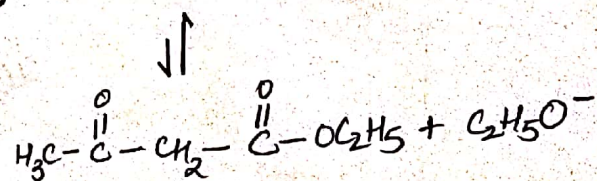
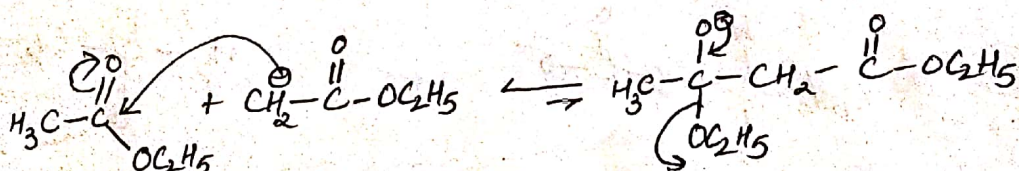
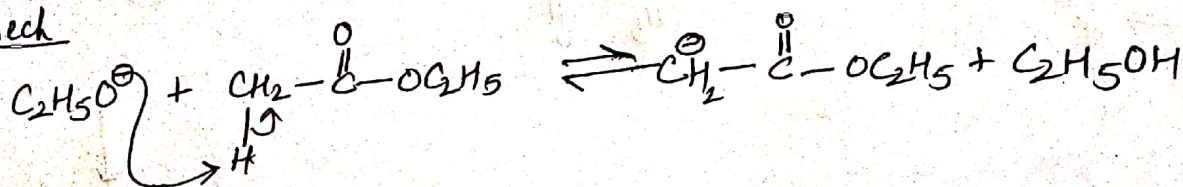
The base catalyzed Condensation of an ester containing an α -hydrogen atom with a molecule of the same ester or a different ester to give β -ketoester is known as Claisen Condensation



The base commonly employed in the Claisen Condensation is the sodium alkoxide corresponding to OR of the ester

$\text{R}'\text{COOR}$ functional group in order to avoid ester interchange which leads to mixed esters arising from transesterification

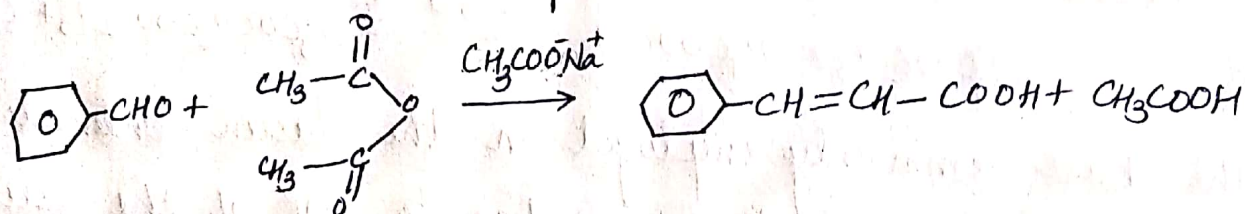
Mech



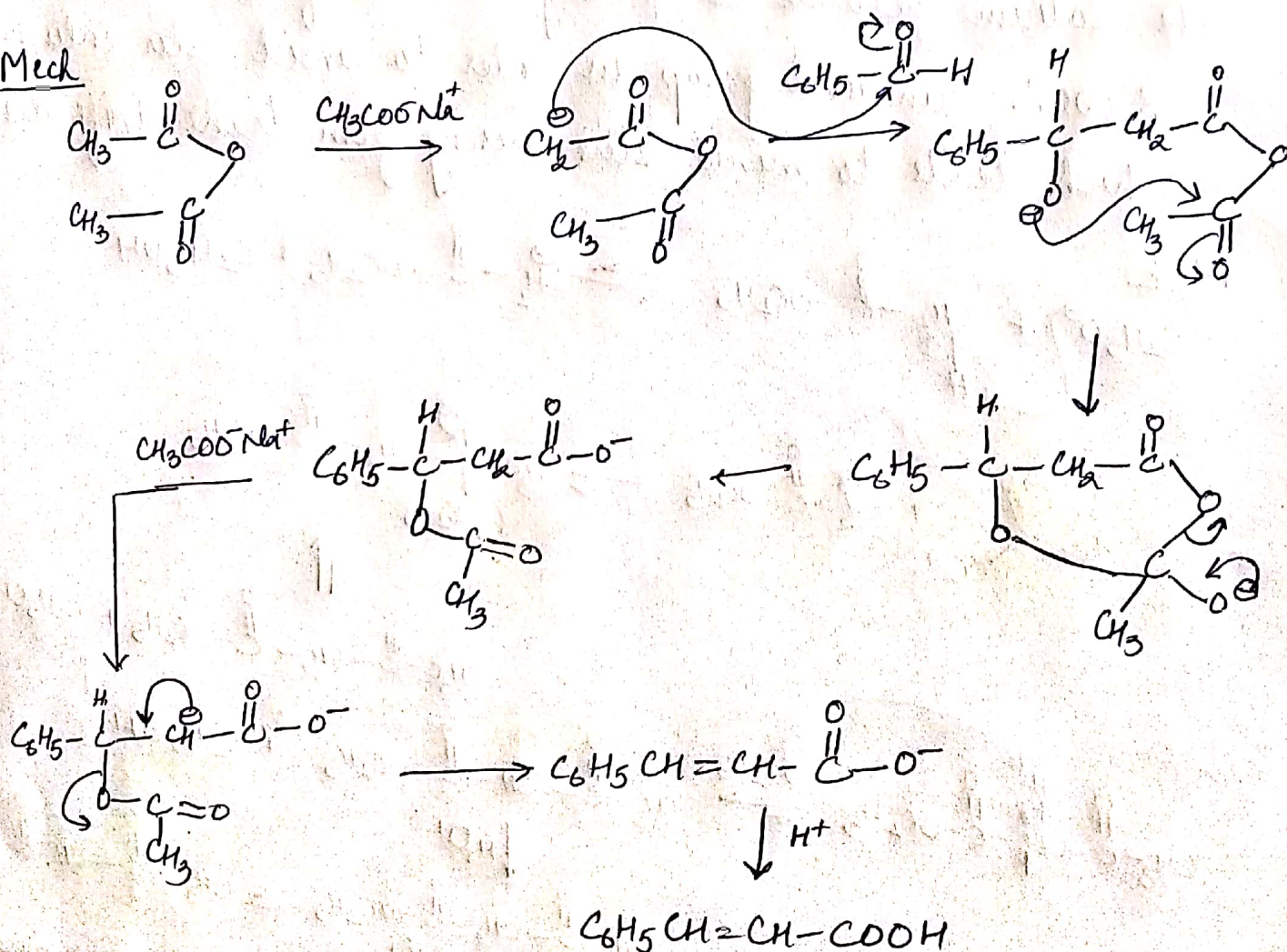
Addition of acid quenches the reaction by neutralising the base and protonating the Claisen Condensation product. The β -ketoester product exists as an equilibrium mixture of its keto and enol form.

Perkin Condensation

Aromatic aldehydes on reaction with aliphatic acid anhydride containing two α -hydrogens in presence of Na salt of the acid of corresponding to anhydride to give an α, β unsaturated acid is known perkin condensation



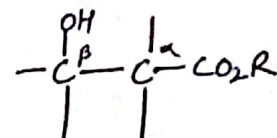
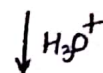
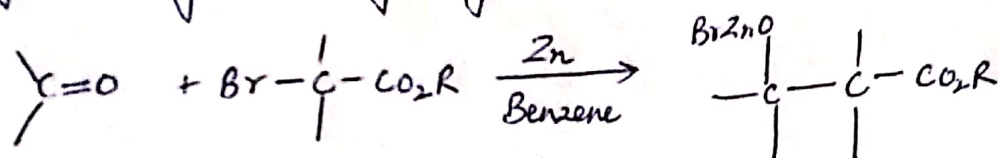
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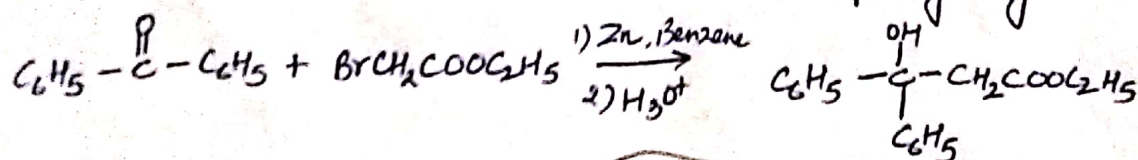
Reformatsky Reaction

It involves addition of an organozinc reagent to the carbonyl group of an aldehyde or ketone. This reaction, called the Reformatsky reaction, extends the carbon chain of an aldehyde or ketone and yields β -hydroxyesters.

It involves treating an aldehyde or ketone with an α -bromo ester in the presence of zinc metal; the solvent most often used is benzene. The initial product is zinc alkoxide which must be hydrolyzed to yield β -hydroxyesters.



β -hydroxyester



Mech

