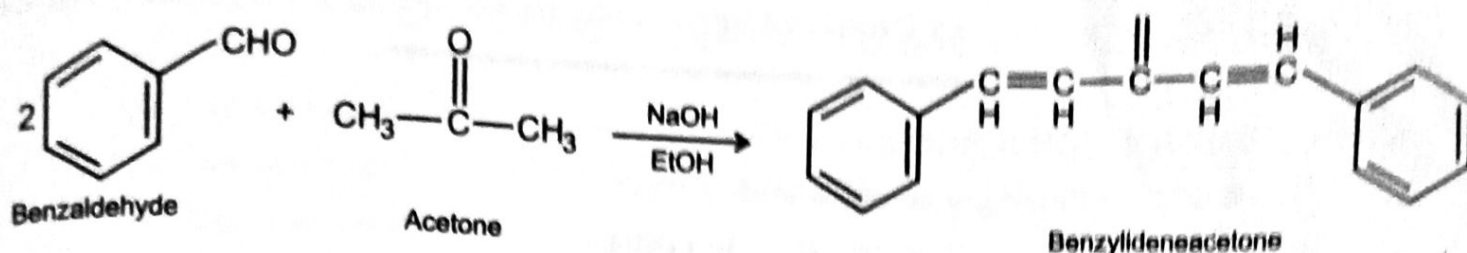


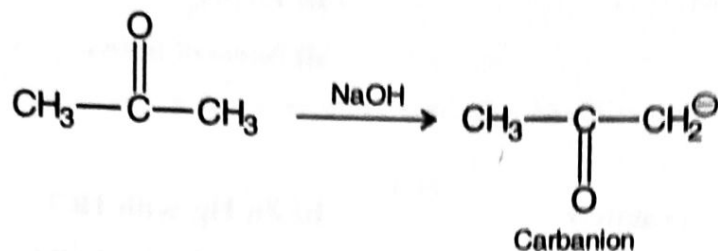
CLAISEN-SCHMIDT CONDENSATION

It is also known as cross aldol condensation. It involves reaction between an aldehyde or ketone and an aromatic carbonyl compound lacking an alpha hydrogen. For example synthesis of benzylideneacetone. It is generally carried out in the presence of solvent using sodium hydroxide as the base and benzaldehyde with acetone.

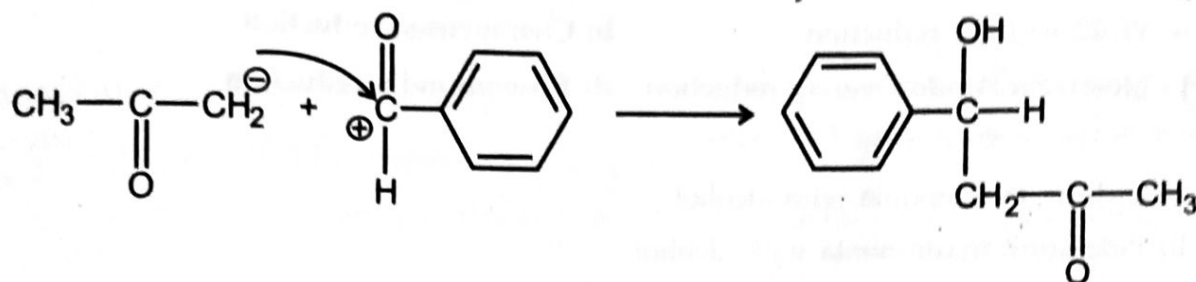


Mechanism

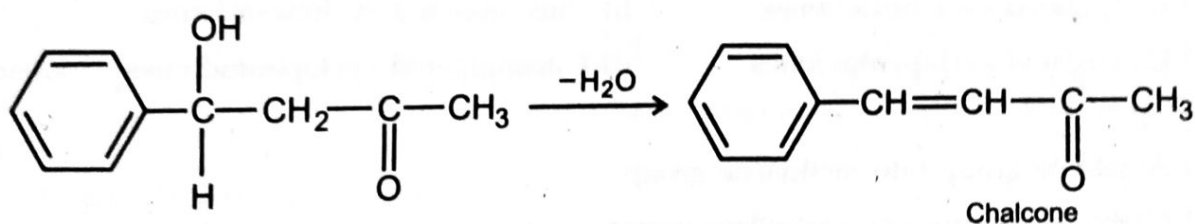
Step 1 : Base abstracts a proton from ketone to form a carbanion.



Step 2 : Carbanion attack at carbonyl carbon of an aldehyde to form an addition product.



Step 3 : The addition product then loses a water molecule to give the final product (chalcone).



IMPORTANCE OF CLAISEN-SCHMIDT CONDENSATION

This method is useful for the synthesis of Chalcones (α, β unsaturated carbonyl compounds) which have variety of uses like Antitumour, Antiviral, Antitubercular, Fungicidal, Antiinflammatory, Antimicrobial, Insecticidal etc. Chalcones are also used as a precursors for the synthesis of various other heterocyclic compounds like pyrazole, oxazole, isoxazole etc.