

For B.Sc-II, Paper-III (C)

CONDENSATION REACTIONS

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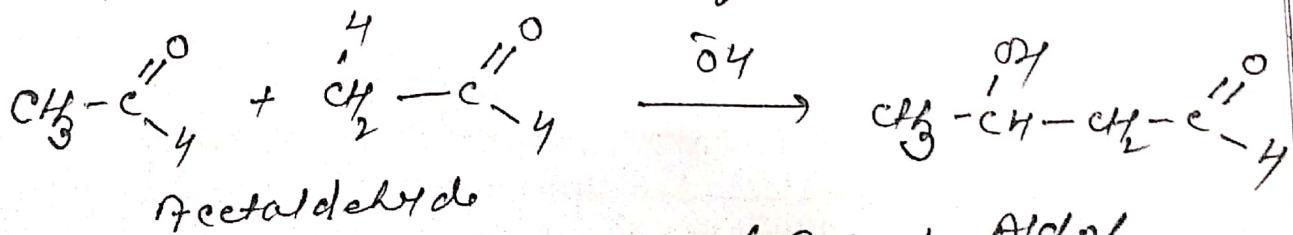
Condensation Reaction

Chemical combination of 1/2 molecules with the elimination of other simple molecule is called condensation reaction

- ⊙ molecules which are to be condensed are usually carbonyl compounds (aldehyde, ketone, ester etc.)
- ⊙ Atleast one of the two molecules ^{must} carry α-H
- ⊙ Base is used as a catalyst to generate carbanion on ~~the~~ α-carbon by releasing α-H

There are two very common steps

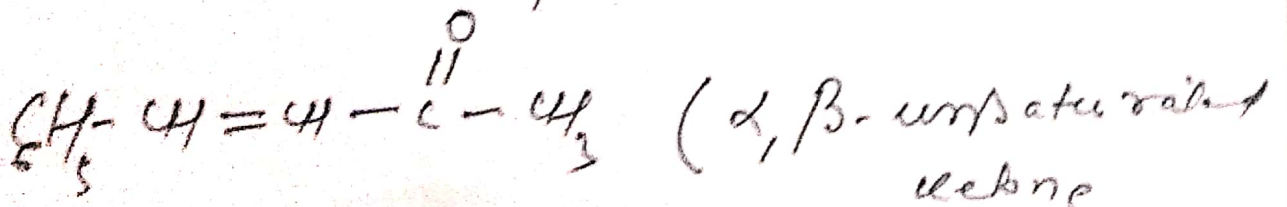
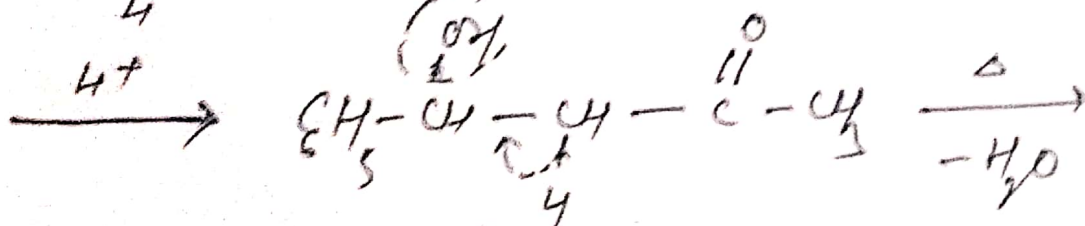
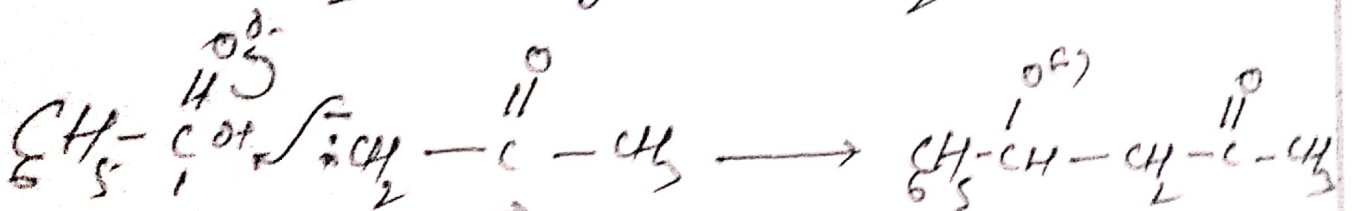
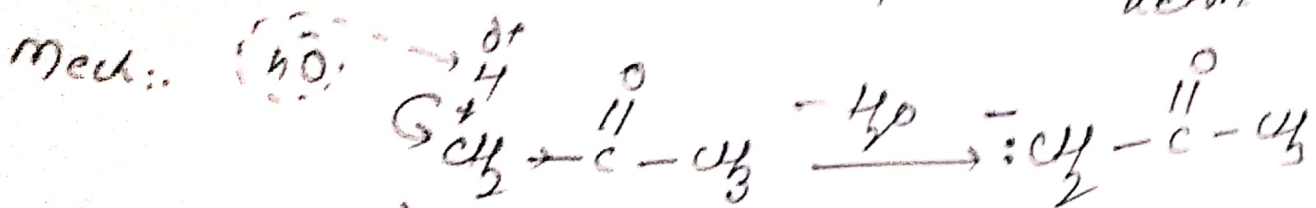
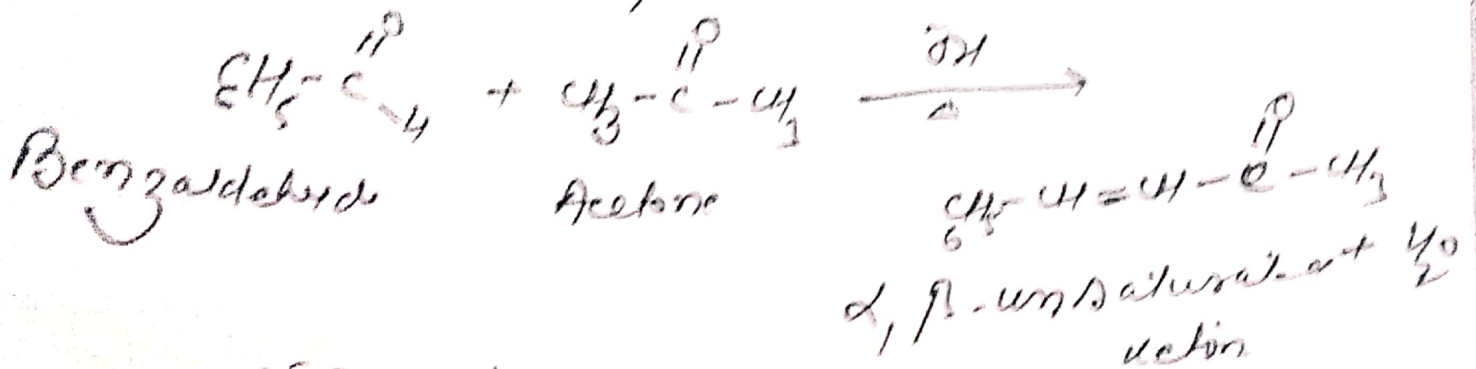
- (i) 1st ~~one~~ ^{step} is formation of carbanion with the help of catalyst (base)
- (ii) 2nd step is addition of carbanion (nucleophile) on another molecule of carbonyl carbon



Aldol condensation (β-hydroxy aldehyde) reaction

Claisen - Schmidt Condensation reaction

Benzaldehyde when react with acetone in presence of base, followed by heating, gives α, β -unsaturated ketone



* Reaction proceed via carbanion formation and is base catalyzed reaction.