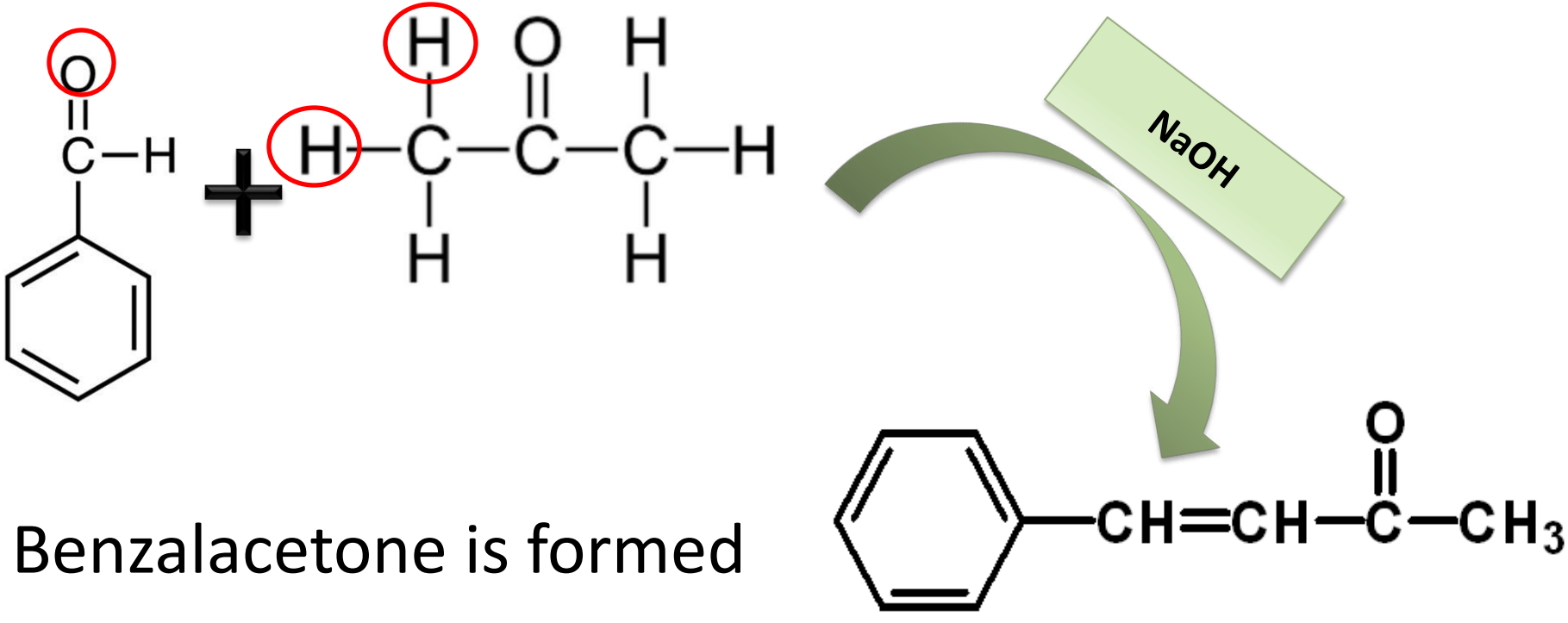
CLAISEN SCHMIDT REACTION

DEPTH OF BIOLOGY

- Reaction between aromatic [benzene] carbonyl compound without alpha hydrogen and aliphatic [long chain] carbonyl compound with alpha hydrogen in the presence of NaOH [which acts as a catalyst]
- It yields alpha, beta unsaturated carbonyl compound
- Carbonyl compounds are compounds having aldehyde or ketone group

- Benzaldehyde reacts with acetone to in presence of catalyst NaOH, removal of water takes place

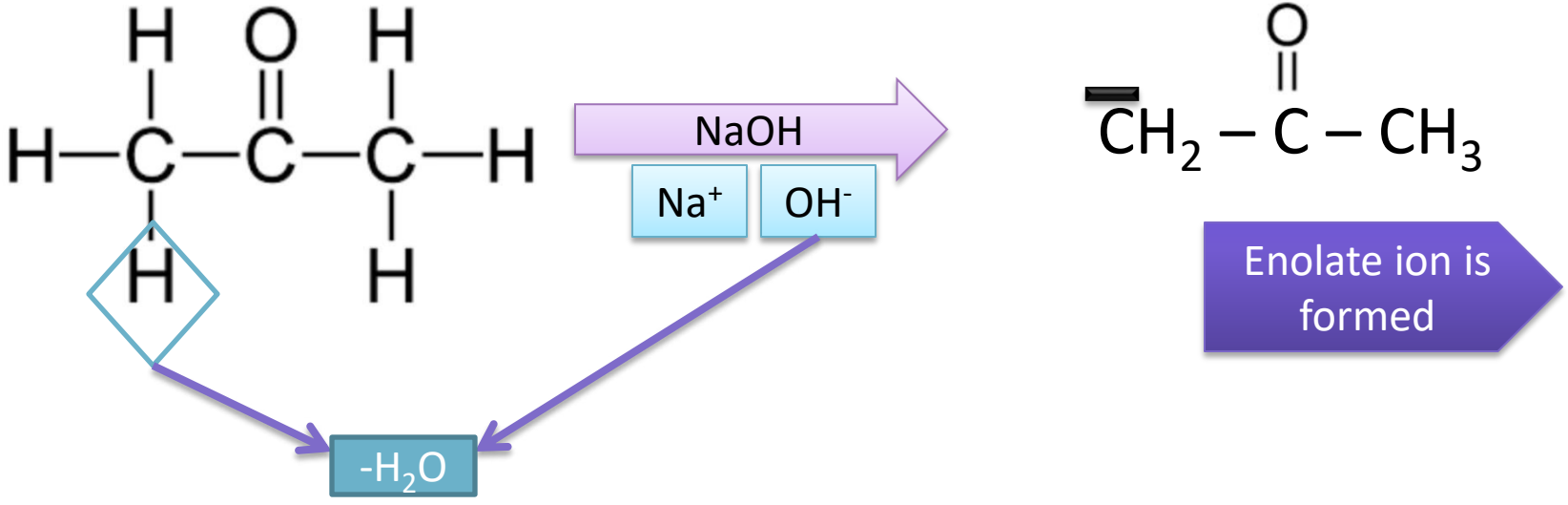


- Benzalacetone is formed

DEPTH OF BIOLOGY

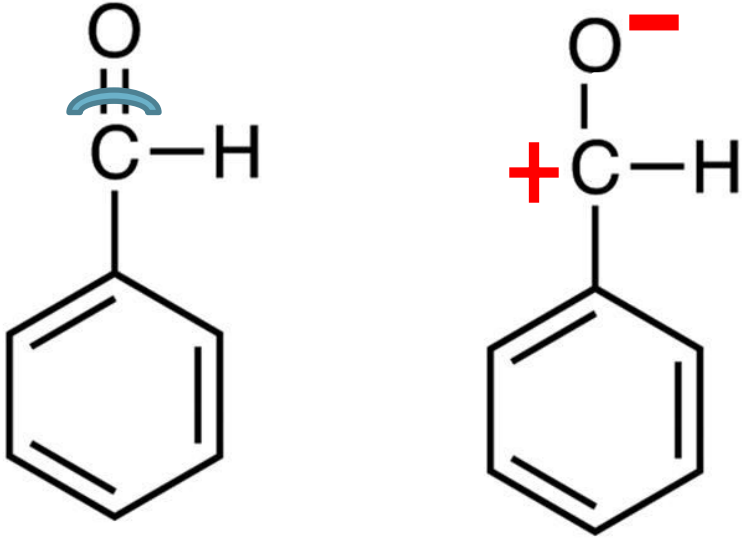
- 2 steps occur-

1. Aldol formation
2. Removal of water i.e condensation

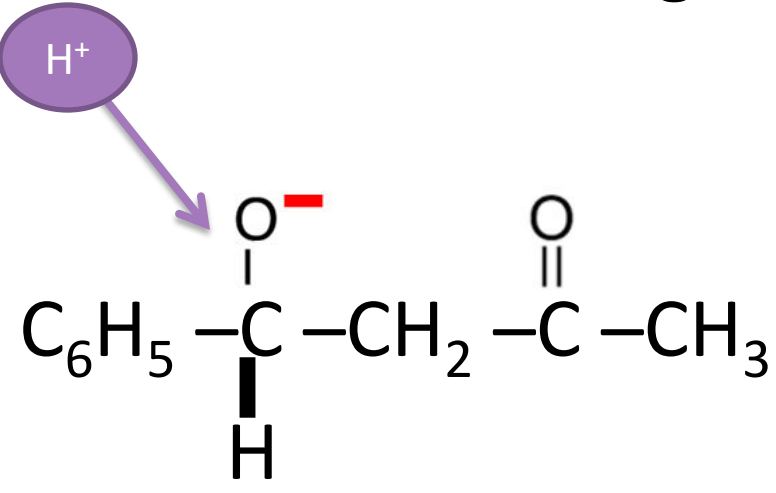


DEPTH OF BIOLOGY

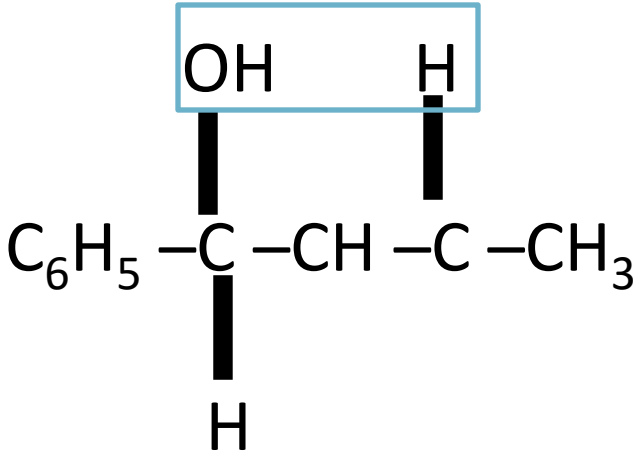
- O is highly electronegative element so it breaks the double bond and a negative charge is created on Oxygen and a positive charge on carbon



- The enolate ion gets attached to the benzene ring and the following structure is formed

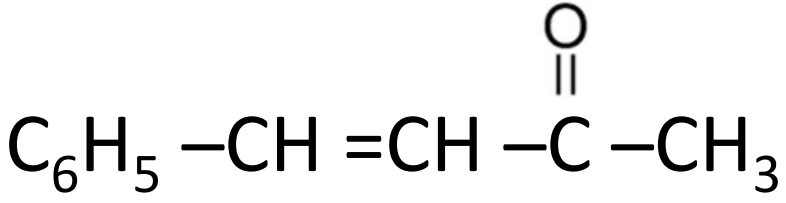


Since there is a negative charge on oxygen so a hydrogen ion comes to stabilise it



H_2O is removed and aldol is formed

- After the removal of water a C=C is formed to maintain the valency of the compound



benzalacetone