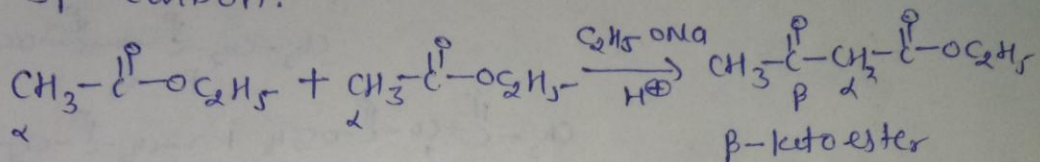
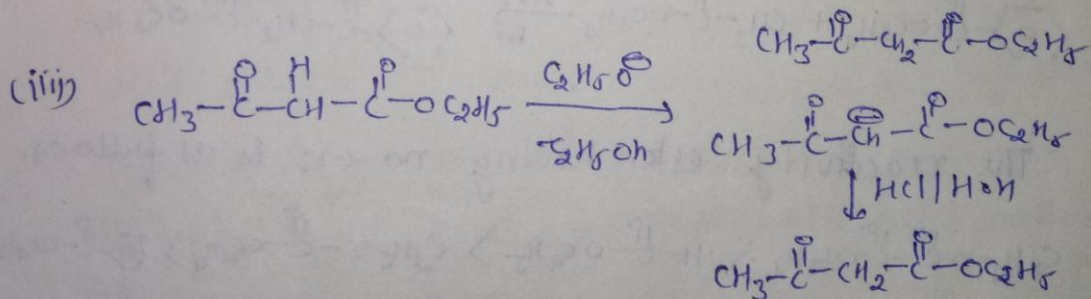
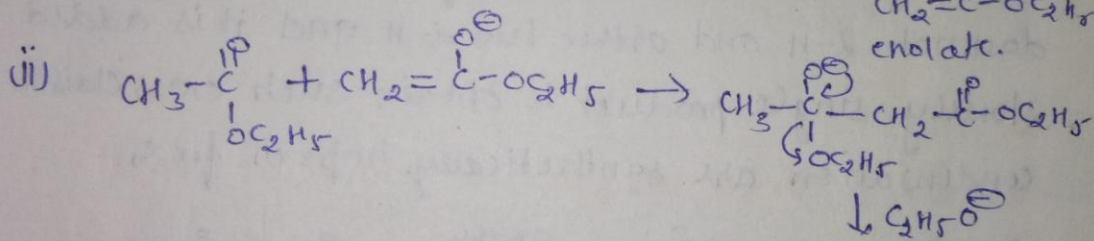
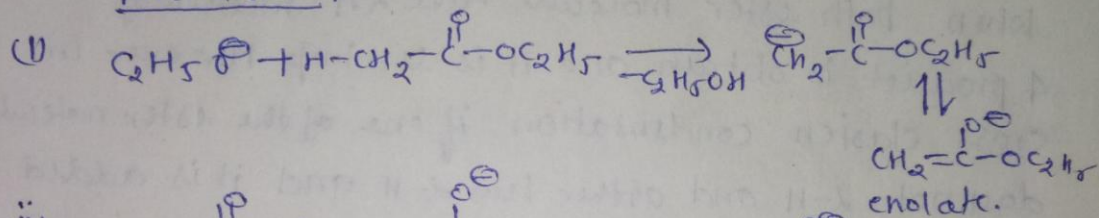


Claisen condensation: - Ester having atleast one α -H undergoes condensation in presence of base like Na ethoxide and form β keto ester. It is eq of nucleophilic substitution Rxn on sp^2 carbon.



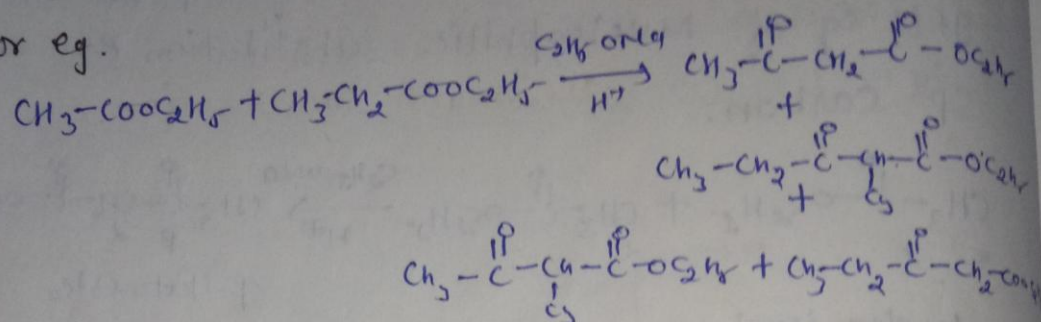
Mechanism:-



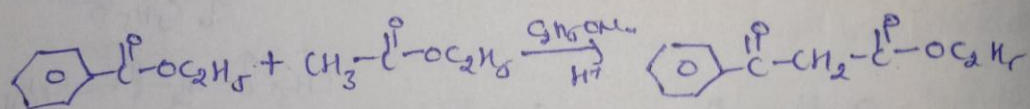
In this reaction new C-C bond is form between carbonyl carbon of 1 molecule and α carbon of ~~another~~ ^{another} molecule with elimination of alkoxy group with alcohol.

Base catalysed condensation between 2 different ester is called crossed claisen condensation

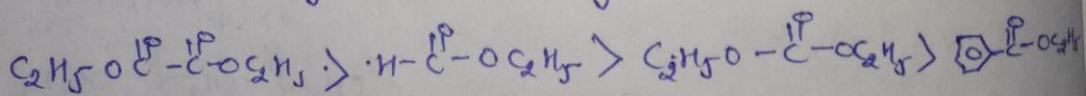
for eg.



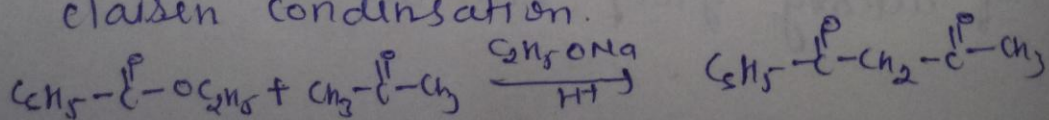
When both ester molecule have α -H mixture of 4 product is obtain and it is less imp. However in cross claisen condensation if one of the ester molecule does not α -H and other has α -H and it is added slowly single product is obtain such cross claisen condensation are synthetically imprxh for e,



The reactivity ester having no α -H is as follows.



→ Condensation between carbonyl, nitro, or cyano which can form carbanion, nucleophile and ester molecule having no α -H is called mixed claisen condensation.



→ Diesters of suitable dicarboxylic acid in which 5 or 6 membered ring structure may be formed undergo intramolecular Claisen condensation on treatment with base. Intramolecular Claisen condensation is called Dieckmann condensation.

