

Maharaja College, Ara.
Chemistry Deptt.

B.Sc. Part II. (Hons.)

Organic Chemistry

Paper III C, Group "A"

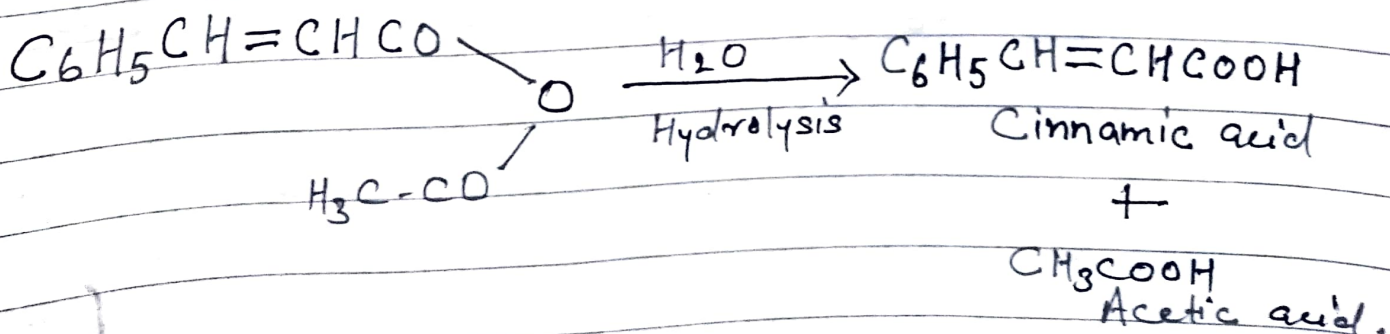
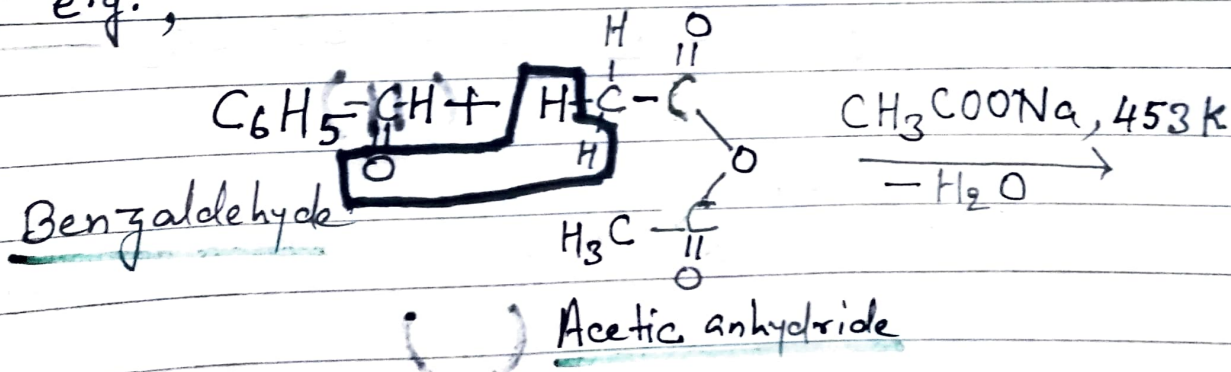
Name Reaction with mechanism.

- By Dr. Manju Kumari

Perkin Reaction: When benzaldehyde

(aromatic aldehyde) is heated with acetic anhydride in presence of sodium acetate the product obtained on hydrolysis gives an α, β -unsaturated acid. This reaction is called Perkin reaction.

e.g.,



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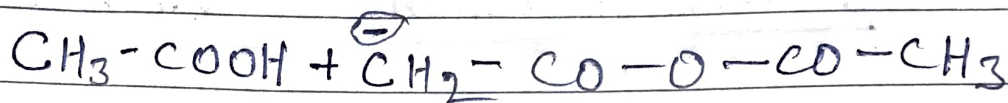
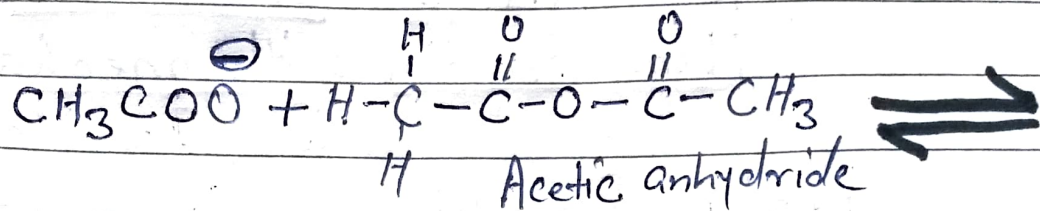
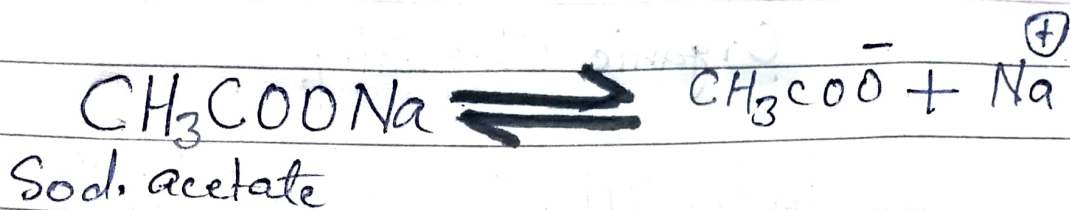
Mechanism:

The acetate ion abstracts a proton from the α -carbon of the anhydride, producing a carbanion (I) which then attacks the carbonyl group of the anhydride. The product (II) then abstracts a proton from the acid to form an aldol-type compound (III). The latter then undergoes dehydration in the presence of hot acetic anhydride and finally it is hydrolysed to α, β -unsaturated acid (IV).

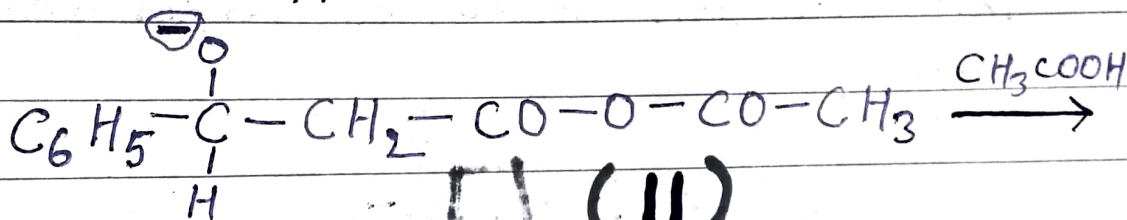
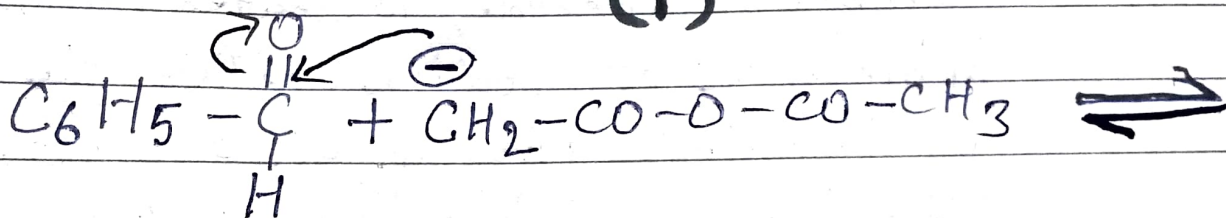


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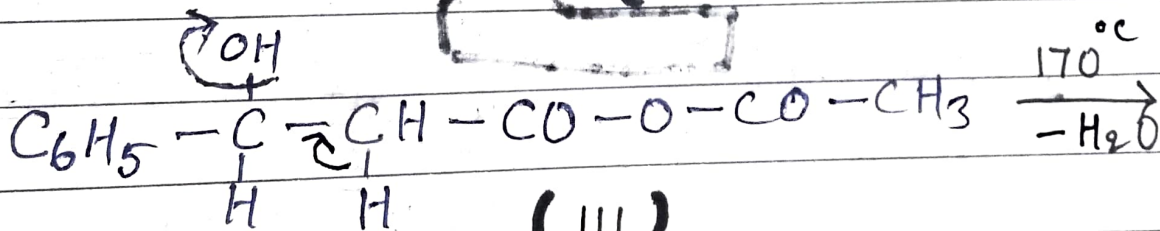
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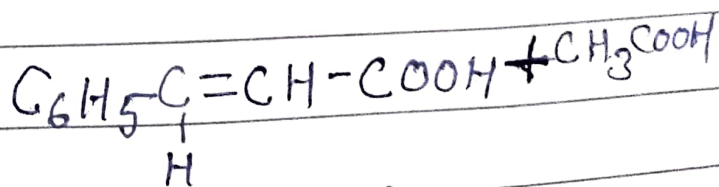
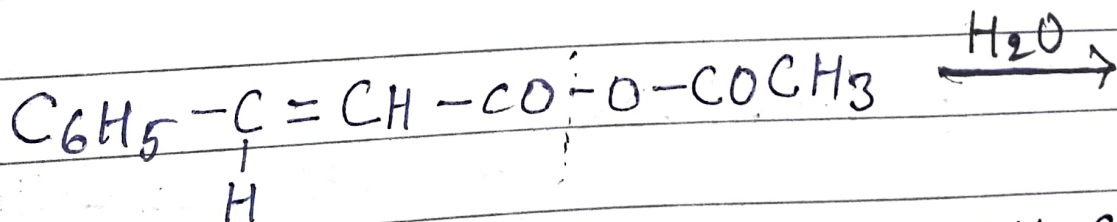
(I)



(II)



(III)



(IV)

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Applications : Perkin reaction has many...

useful synthetic applications.

Synthesis of phenanthrene :

