

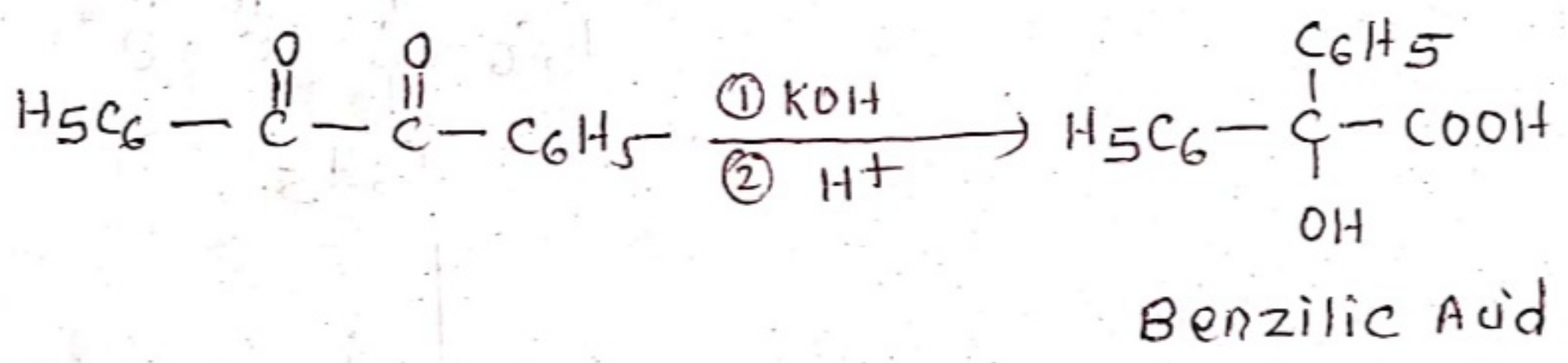
Benzil-Benzilic Acid Rearrangement

* α -diketones (Benzils) on treatment with a base, rearrange to give the salt of α -hydroxy acids (benzilic acid) and the reaction is known as Benzil Benzilic Acid Rearrangement.

* Salts of α -hydroxy carboxylic acid initially formed on acidification yield the hydroxy carboxylic acid.

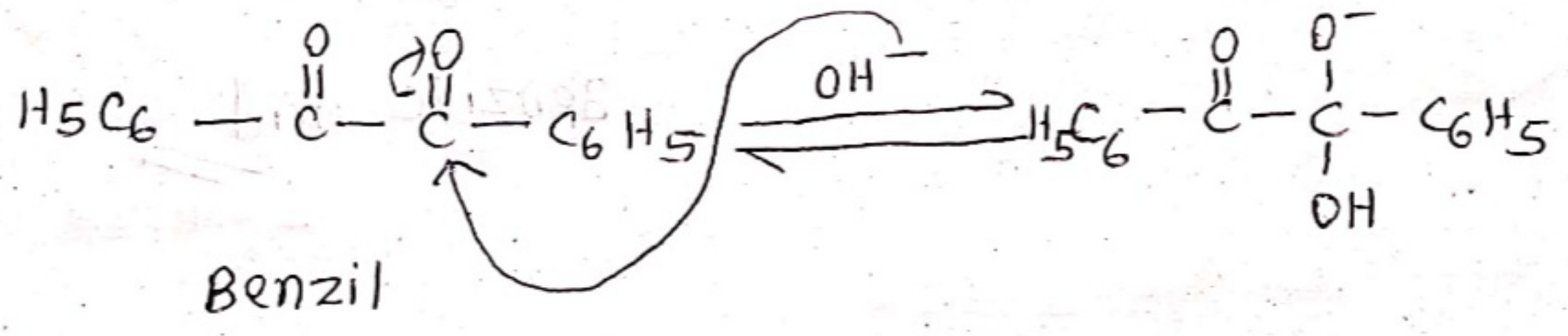
For example;

Benzil on treatment with KOH, followed by acidification yield benzilic acid.

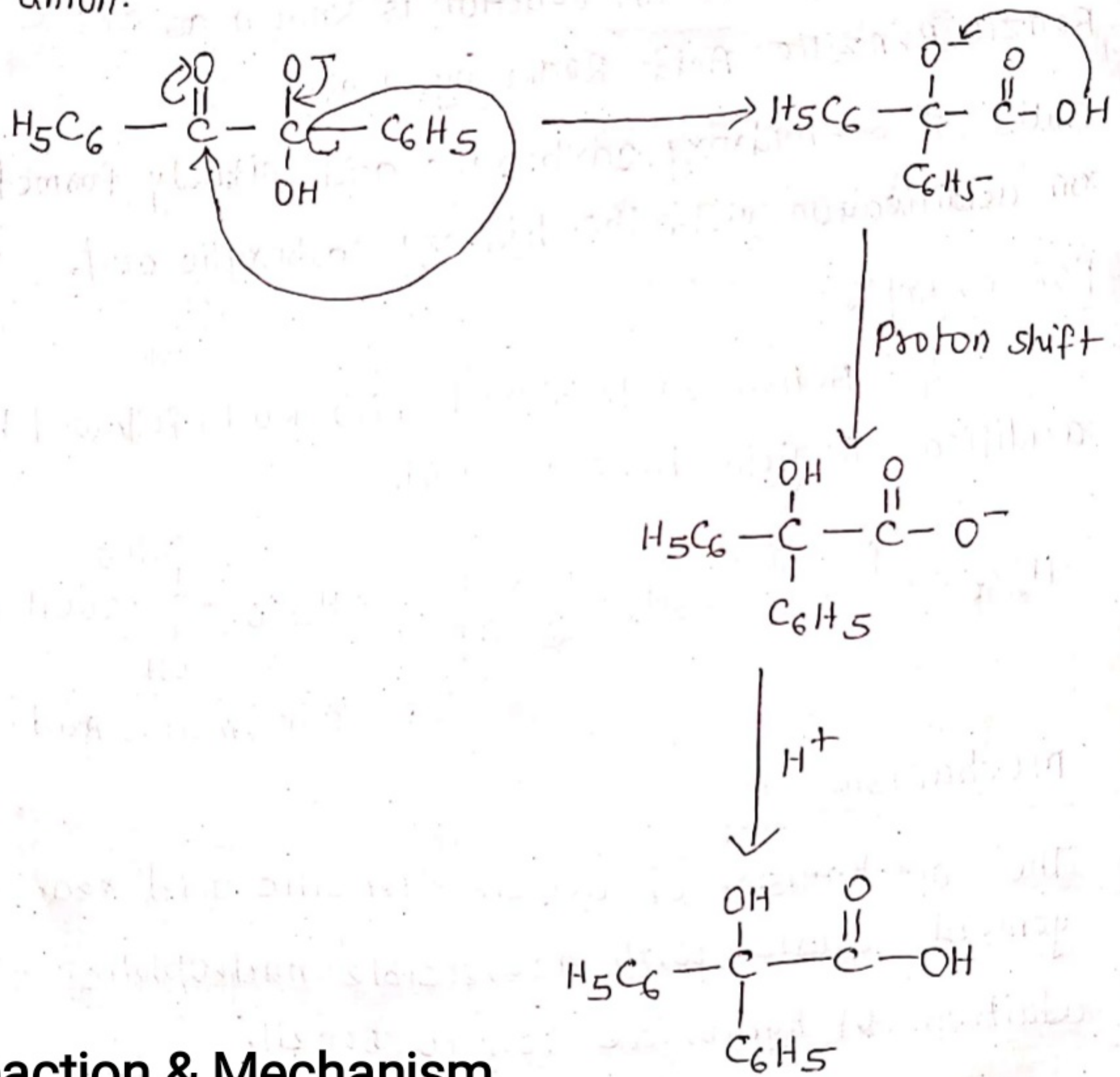


Mechanism

The mechanism of Benzil-benzilic acid rearrangement starts with a reversible nucleophilic addition of hydroxide ion to benzil.



* The resulting hydrate anion undergoes rearrangement by migration of aryl group, followed by shift of proton to give resonance stabilized carboxylate anion.



Benzilic Acid.

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Reaction & Mechanism

Chapter-5

Degree-II (Sub.)

Group-C

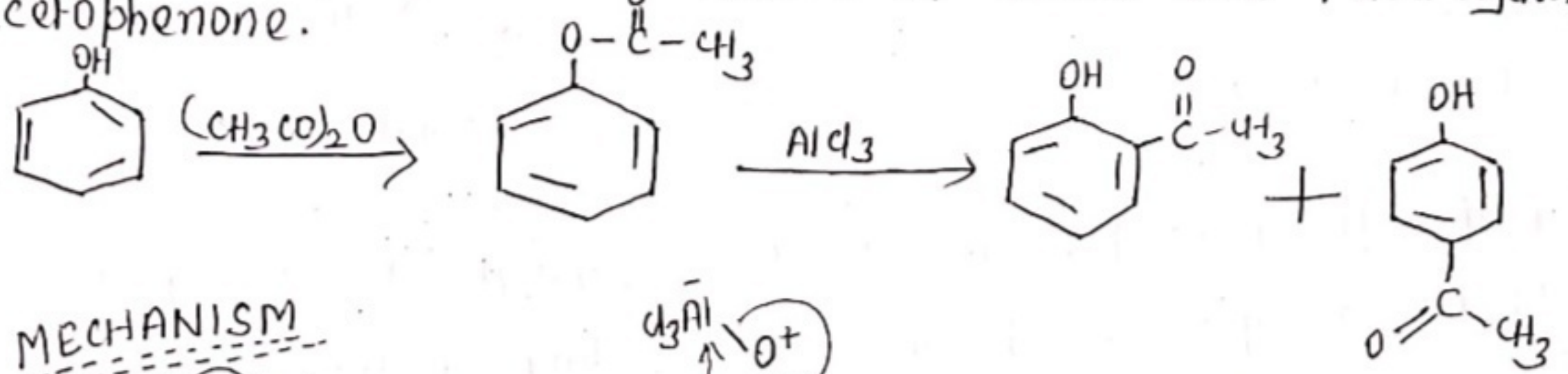
(Organic Chemistry)

11-04-2020

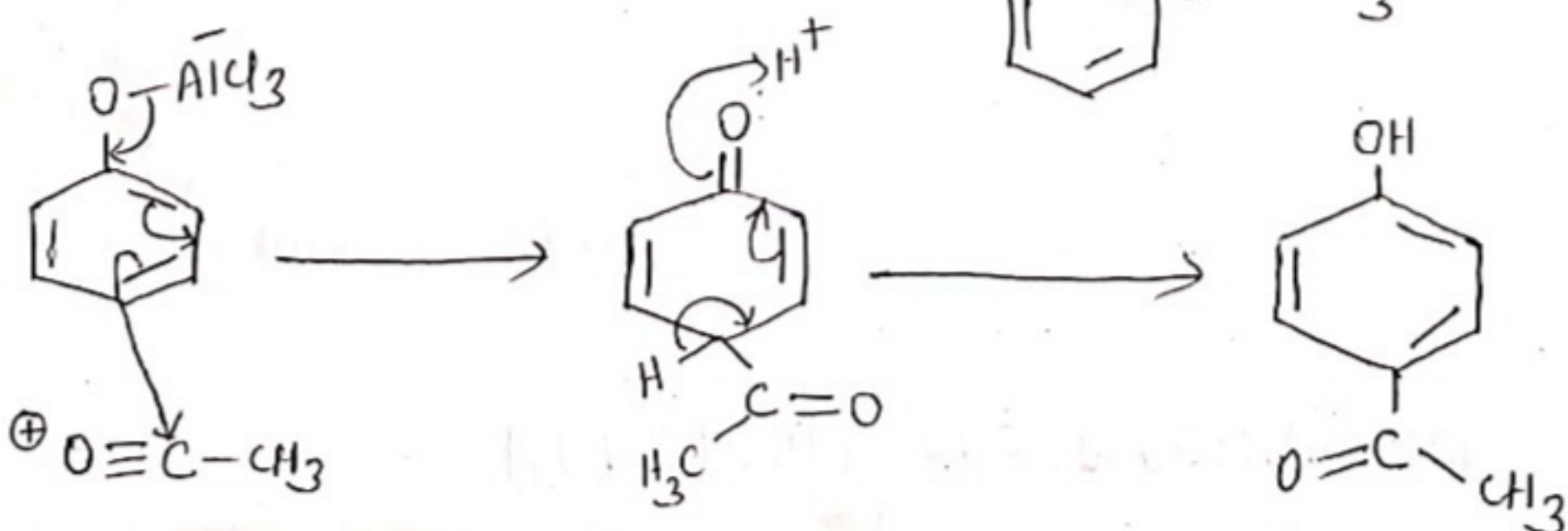
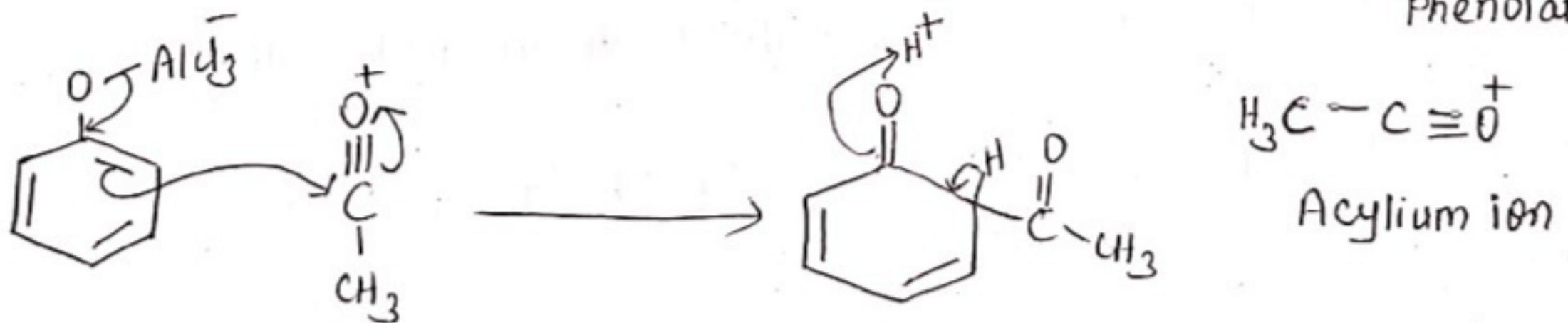
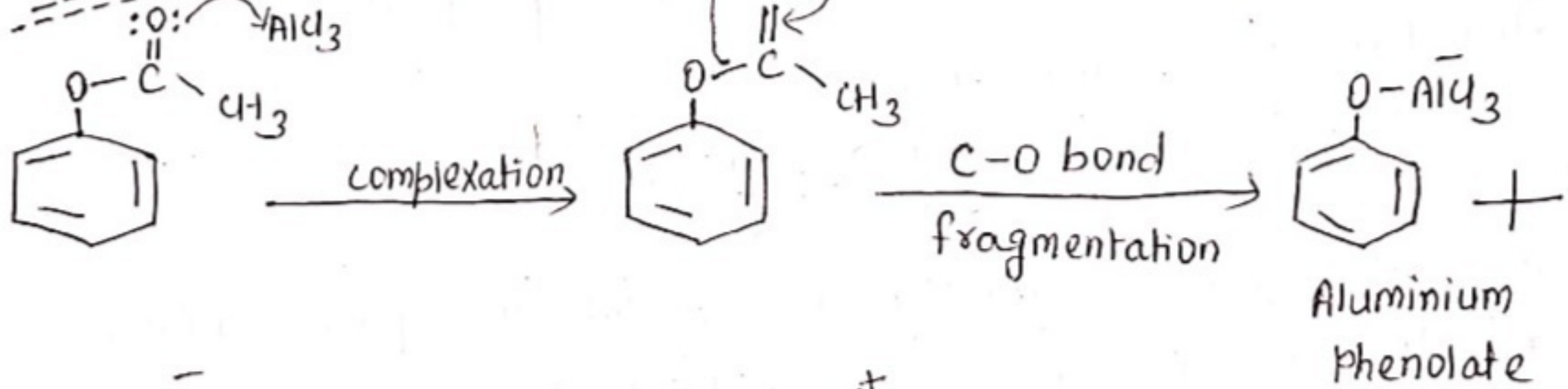
The phenol is first treated with ethanoic anhydride in the presence of aqueous sodium hydroxide to give phenylethanoate (Phenyl acetate).

The ester is then heated with aluminium chloride catalyst when the acyl group migrates from the phenolic oxygen to an ortho or para position of the ring.

The product is a mixture of ortho and Para hydroxy acetophenone.



MECHANISM



End