

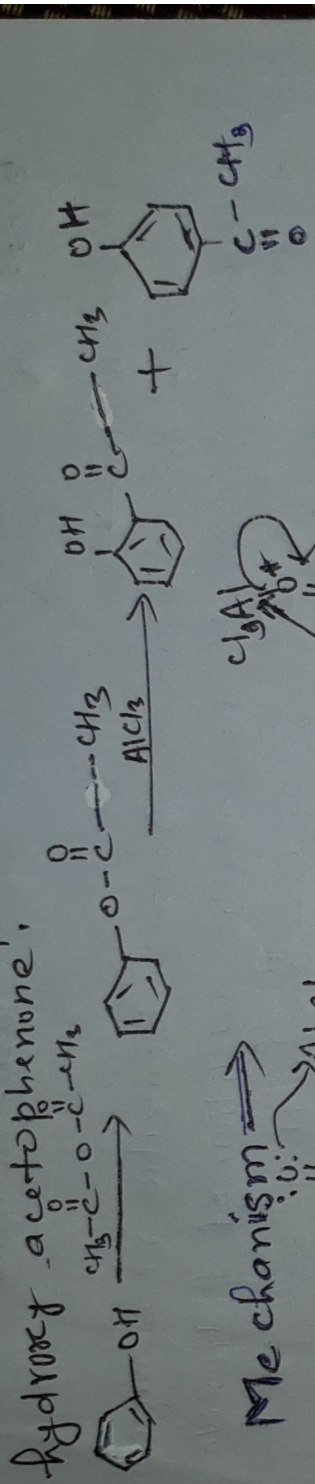
~ 4 ✓ Fries Rearrangement (1908)

The phenol is first treated with ethanolic anhydride in the presence of aqueous sodium hydroxide to give phenylacetate (phenylacetate)

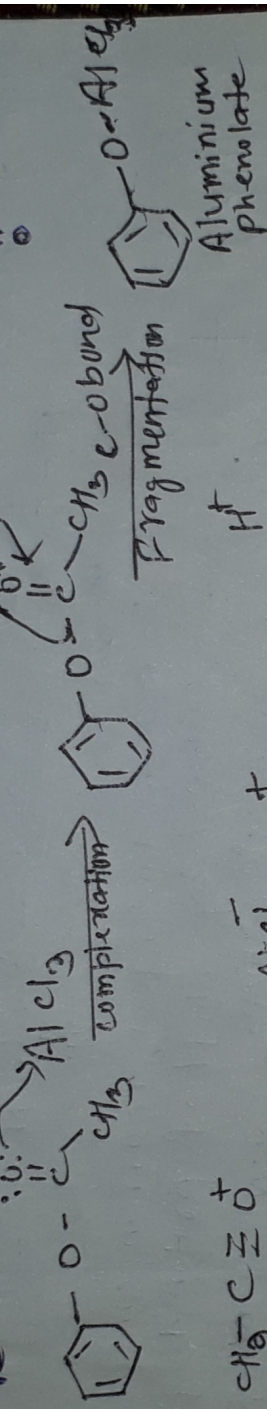
The ester is then heated with aluminium chloride (AlCl₃) catalyst, when the acyl group migrates from the phenolic oxygen to an ortho or para position of the ring.

The product is a mixture of ortho and para

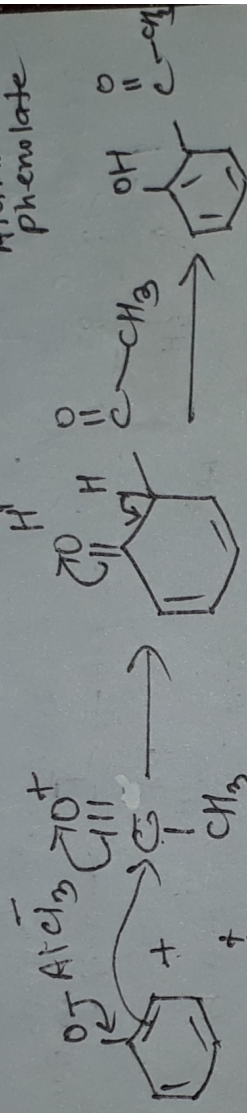
hydroxy acetophenone.



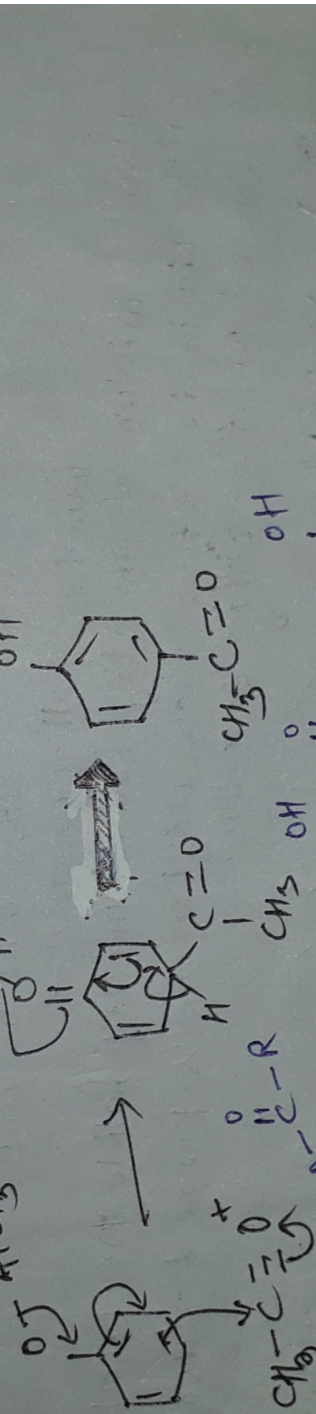
Mechanism



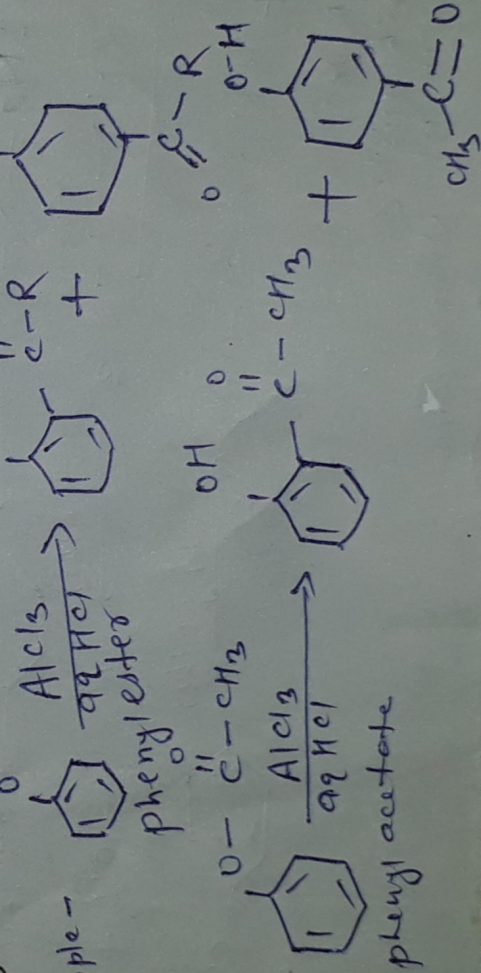
+ CC(=O)O- Acylium



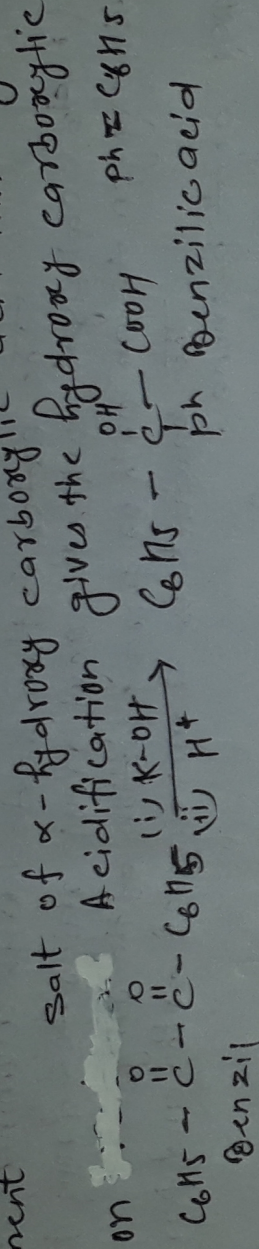
AlCl₃



Example -

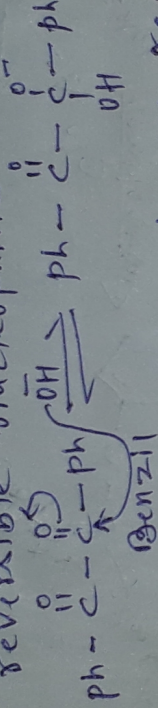


3 Benzil-Benzilic Rearrangement
 α -Diketones (Benzils) on treatment with a base, rearrange to give the salt of α -hydroxy acids (Benzilic acid) and the reaction is known as Benzil-Benzilic acid rearrangement.

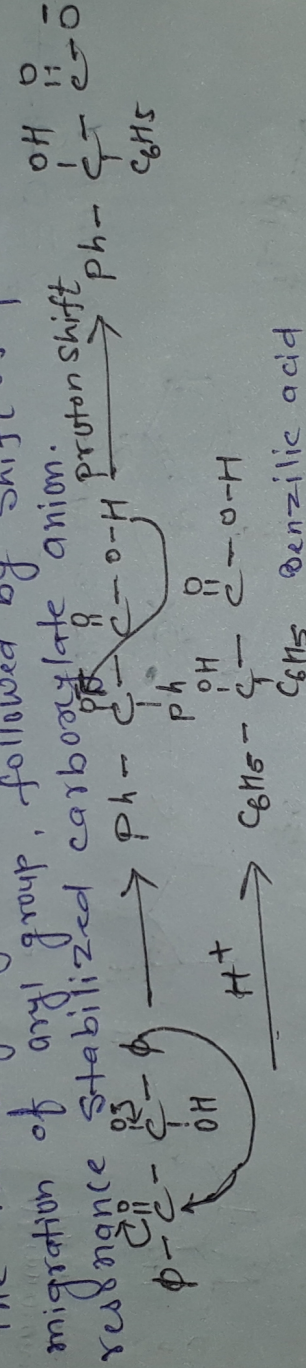


Mechanism \rightarrow

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

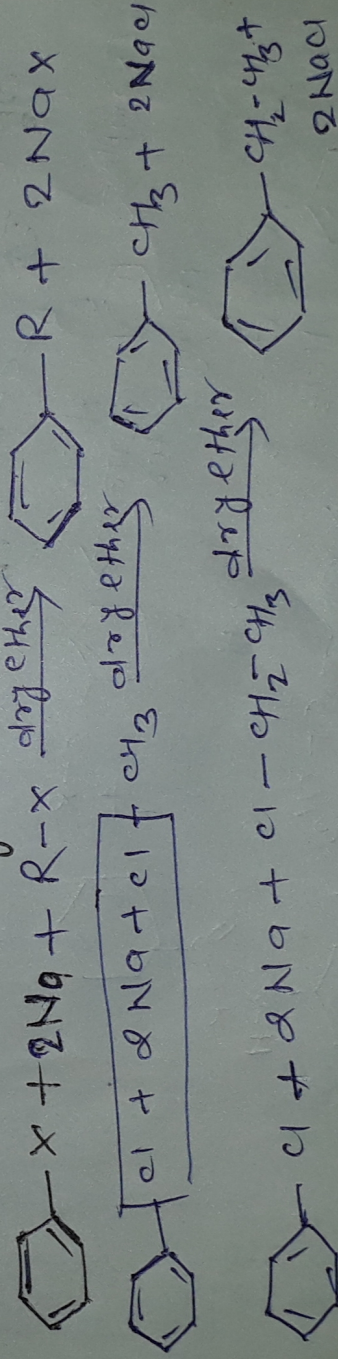


The resulting hydrate anion undergoes rearrangement by migration of aryl group, followed by shift of proton to give resonance stabilized carboxylate anion.



Wurtz-Fittig reaction -

When a mixture of an alkyl halide and aryl halide are treated with Na in dry ether then alkyl arene is formed thus it is called Wurtz-Fittig reaction.



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 Degree II (H), Name reaction.