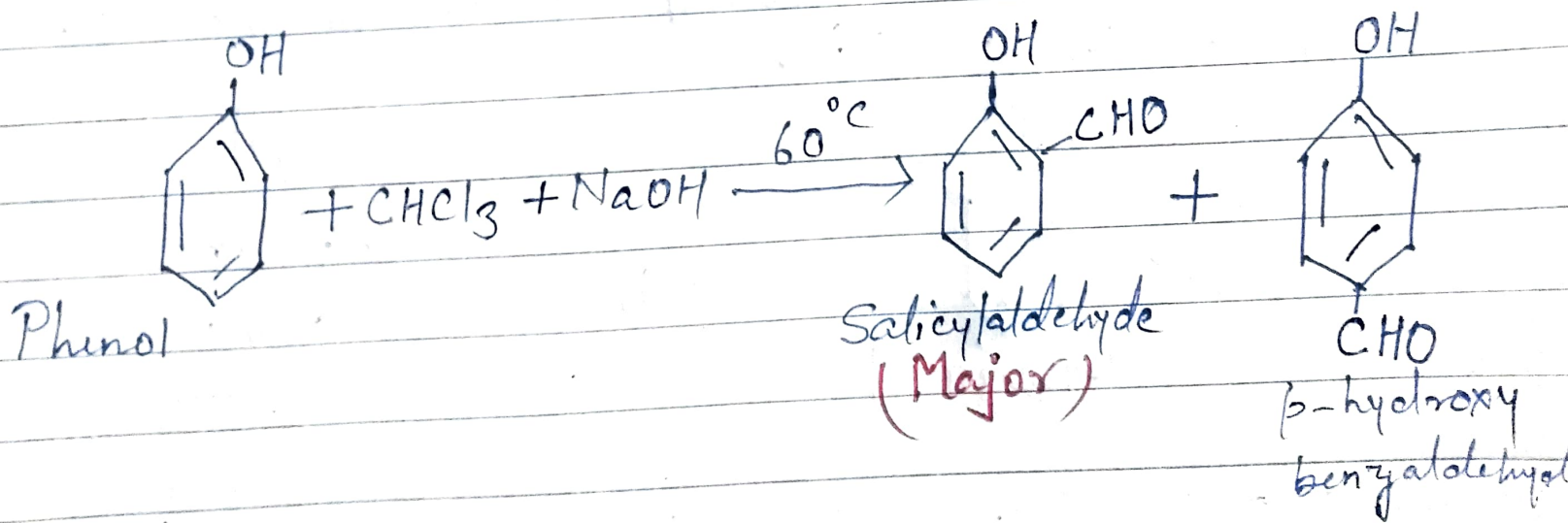


UG: B.Sc. Part II (Hons.), Chemistry.
Organic Chemistry.
Group "A"

by :

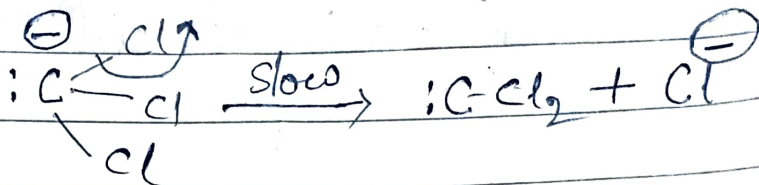
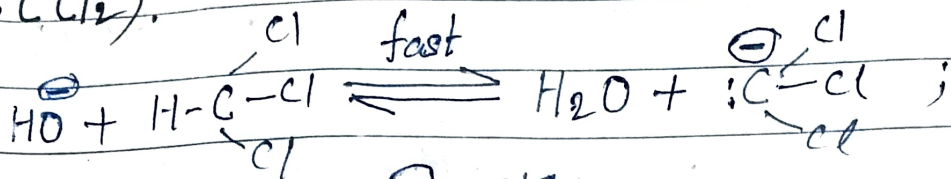
Dr. Manju Kumari

Reimer - Tiemann Reaction : This is the reaction of phenol. Formylation of phenols with chloroform in alkaline solution is known as Reimer - Tiemann reaction (RTR).

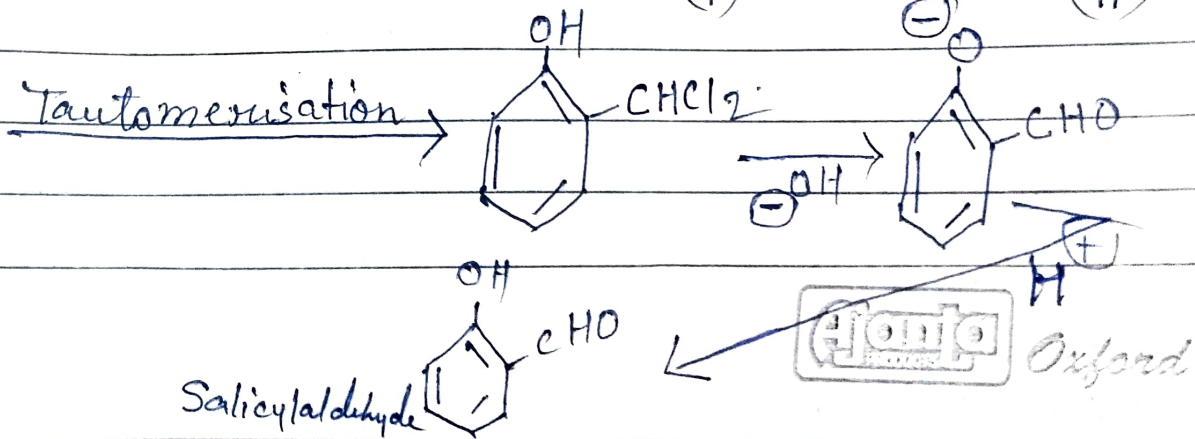
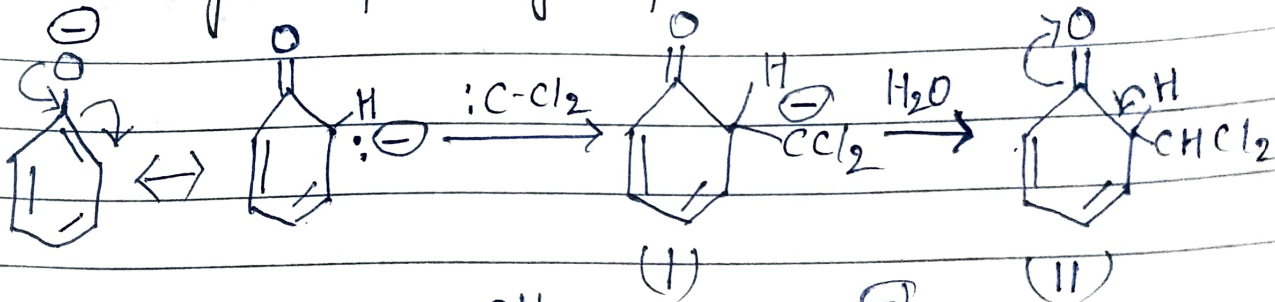


Mechanism:

Chloroform and sodium hydroxide react to produce an electron-deficient electrophile, dichlorocarbene ($:CCl_2$).



The hydroxide will also deprotonate the phenol to give a negatively charged phenoxide.



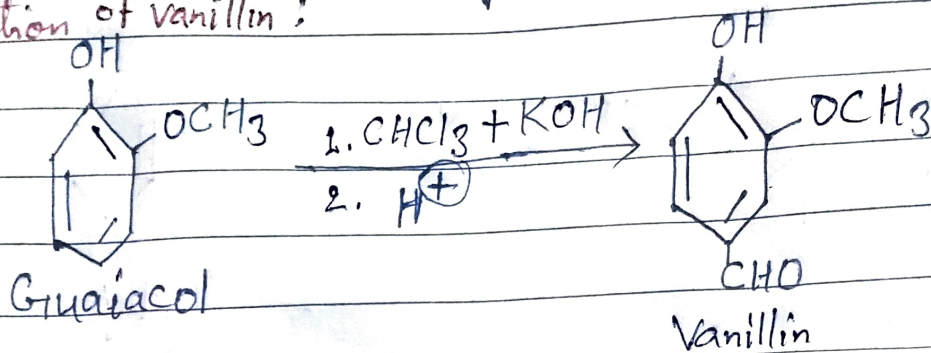
Dichlorocarbene then attacks the aromatic ring to yield a dichloro anion (I) which takes up a proton from the solvent.

The product (II) tautomerises to o-dichloromethyl phenol which after hydrolysis and acidification gives salicylaldehyde.

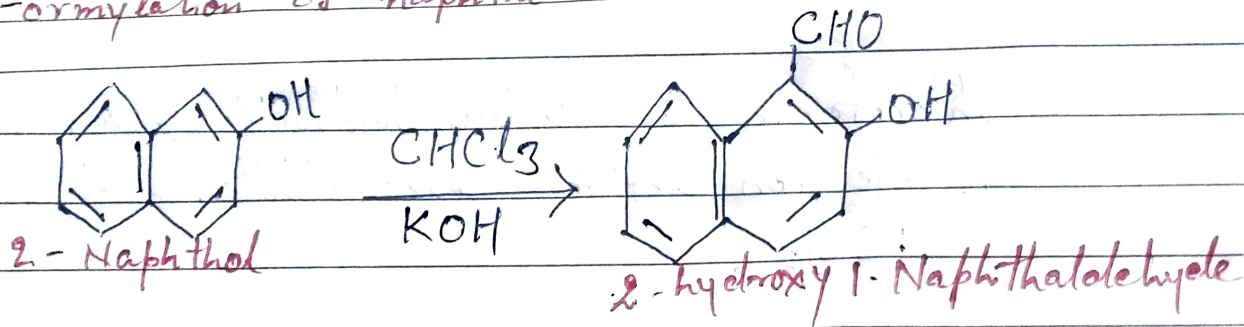
Applications:

A reaction affords a good method for introducing aldehyde or carboxyl group in phenols.

Preparation of vanillin:



Formylation of naphthol:



Preparation of acid:

