

SUBJECT - CHEMISTRY

CLASS - B.Sc (Sub/sem) PART-II

GROUP - C

TOPIC - Benzilic Acid rearrangement

Dr Harsi Mohan Prasad Singh

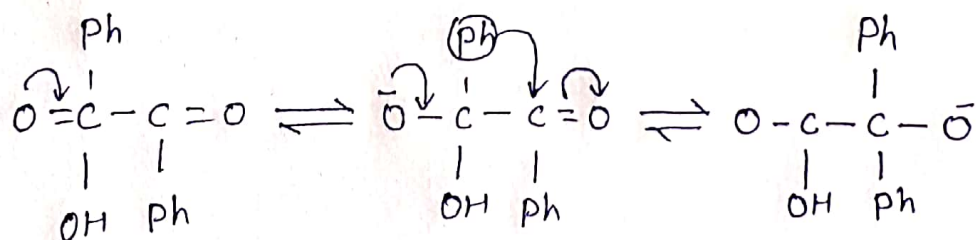
Department of Chemistry

Dr L.K.V.D College Tajpur Samastipur

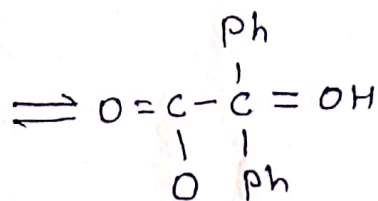
Benzilic Acid rearrangement:

We know that the oxidation of benzoin, $\text{Ph}-\overset{\text{OH}}{\text{C}}-\overset{\text{OH}}{\text{C}}-\text{Ph}$ gives benzil $\text{Ph}-\overset{\text{O}}{\parallel}{\text{C}}-\overset{\text{O}}{\parallel}{\text{C}}-\text{Ph}$. Benzil undergoes base catalysed rearrangement to give the benzilate anion $\text{Ph}_2\overset{\text{OH}}{\text{C}}-\text{COO}^-$. This reaction is called Benzilic acid rearrangement.

This reaction occurs as shown below-



Benzil



Benzilic anion

Firstly, the HO^- ion attacks on the carbonyl C-atom. Then, the migration of Ph group occurs along with its bonded pair of electron to adjacent C-atom followed by the shift of proton as shown above.