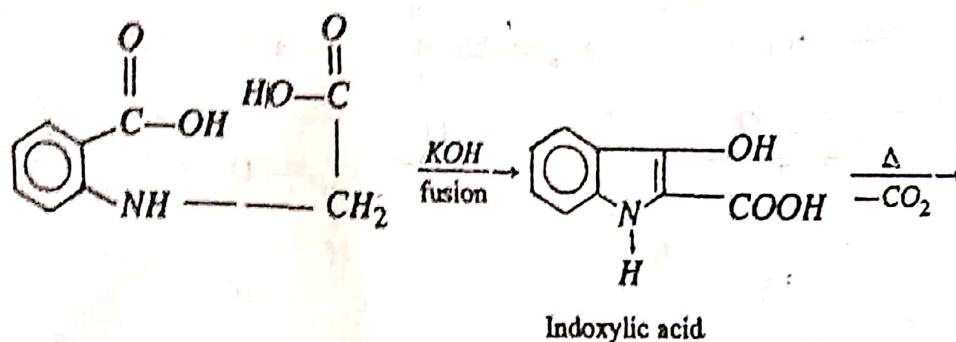
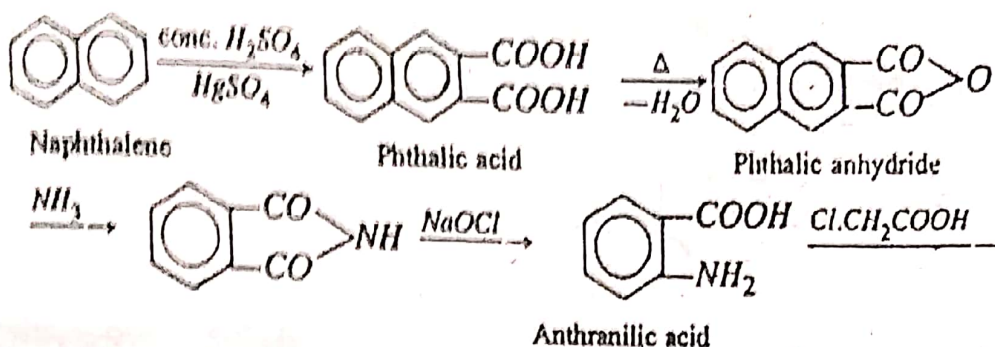


2. From Synthesis : Synthetic indigotin is cheaper, hence indigotin is at present mainly available in synthetic form.

Heumann's Synthesis :



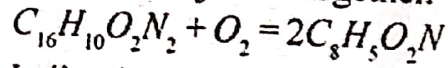
Q.8. Discuss the analytical and synthetic evidences based on which the structure of indigo has been established.

Ans. : Structure of Indigo (or Indigotin) :

1. From elemental analysis and mol. wt. determination, the mol. formula of indigotin comes $\text{C}_{16}\text{H}_{10}\text{O}_2\text{N}_2$.

2. Since the oxidation with HNO_3 gives two molecules of isatin hence its

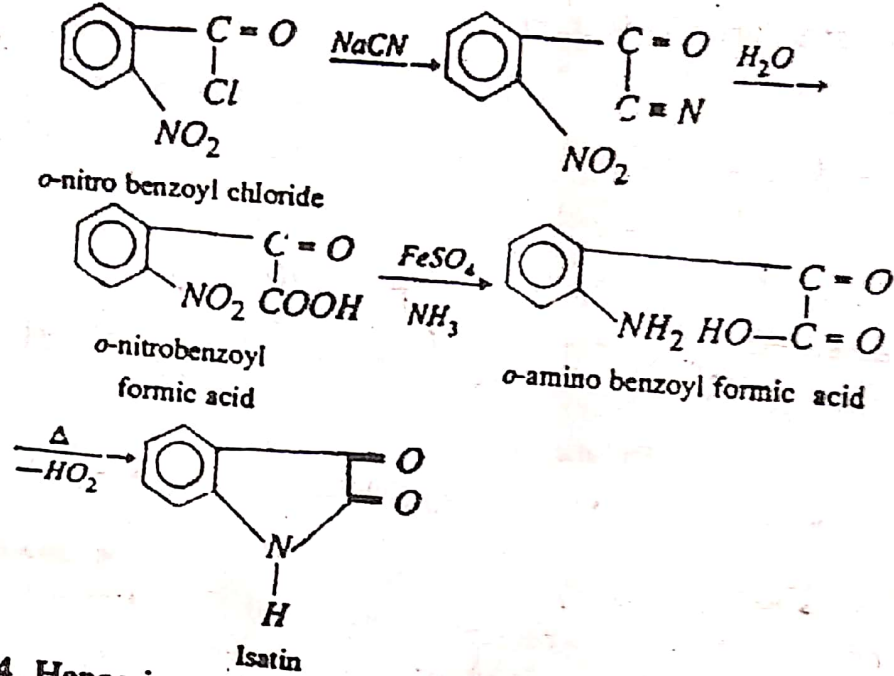
molecule has two isatin units joined together.



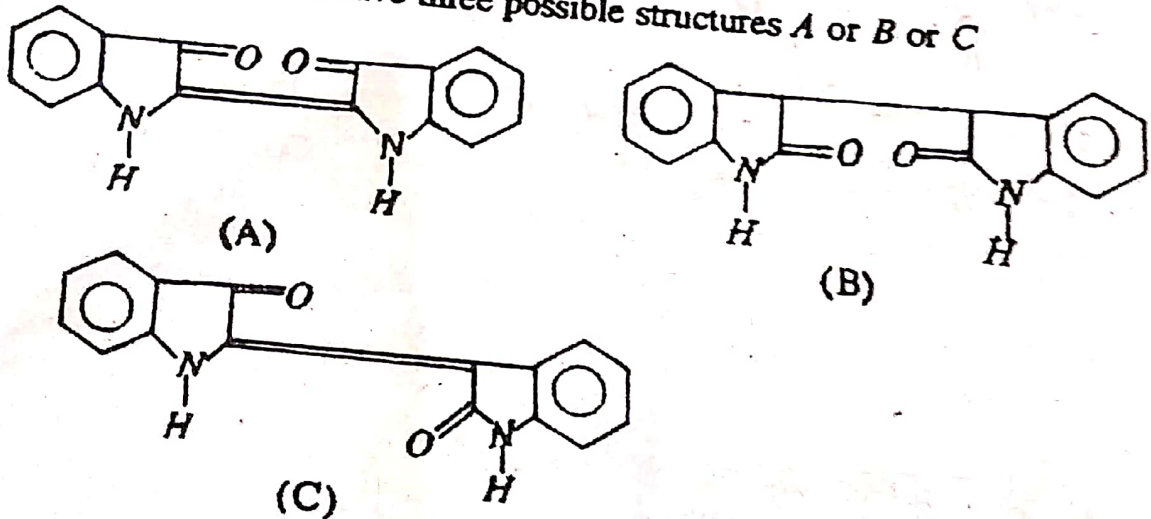
Indigotin

Isatin

3. The structure of isatin as 2, 3-diketo-hydroindole follows from the following synthesis—



4. Hence it can have three possible structures A or B or C



5. Baeyer (1878) synthesised indigotin as given below

