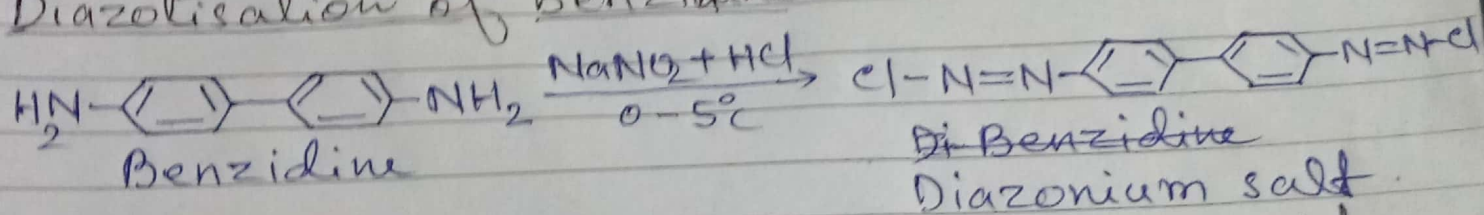


(2) Chemistry and synthesis of Congo red

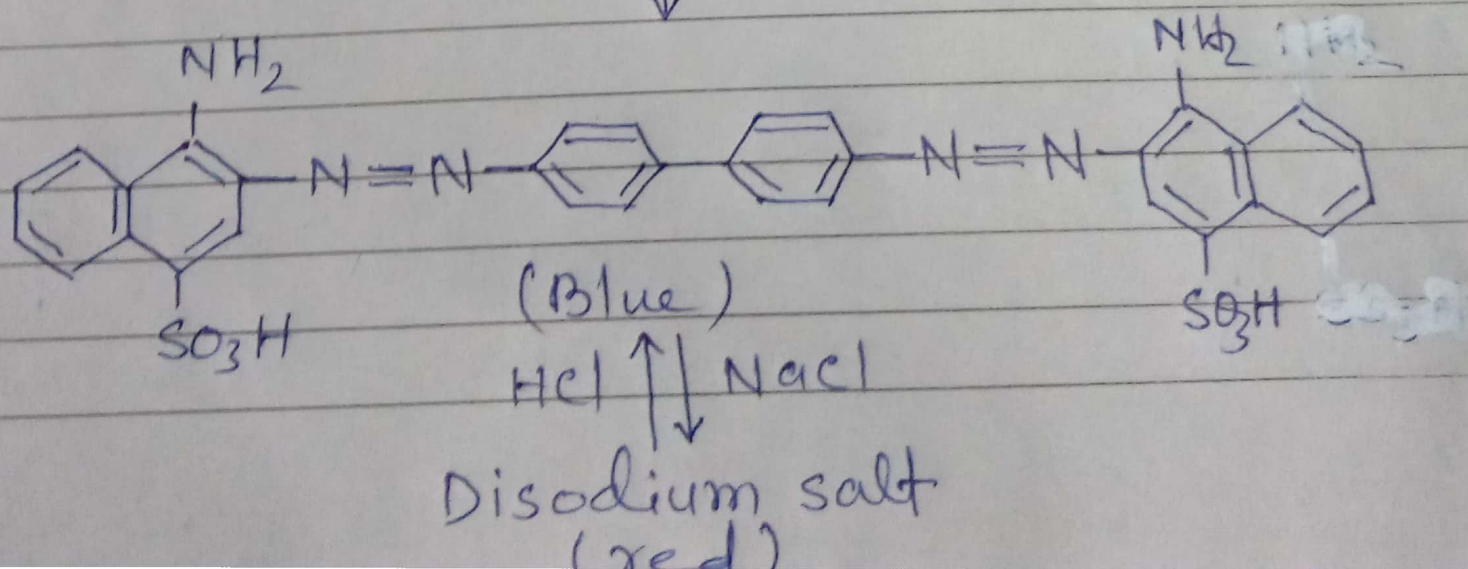
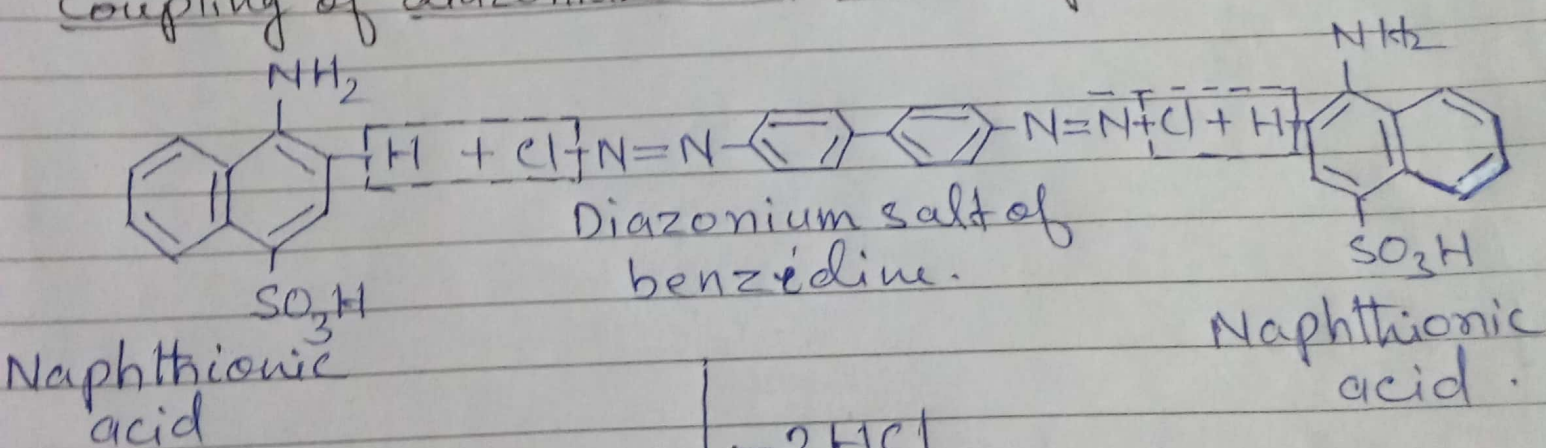
It was the 1st synthetic dye. It is an azodye which is capable of dyeing cotton directly.

It is synthesised by diazotisation of benzidine followed by coupling of both diazogroup with two molecules of naphthionic acid (1-Naphthylamine-4-sulphonic acid). The blue dye so obtained is converted into its red disodium salt by salting with sodium chloride.

Diazotisation of benzidine

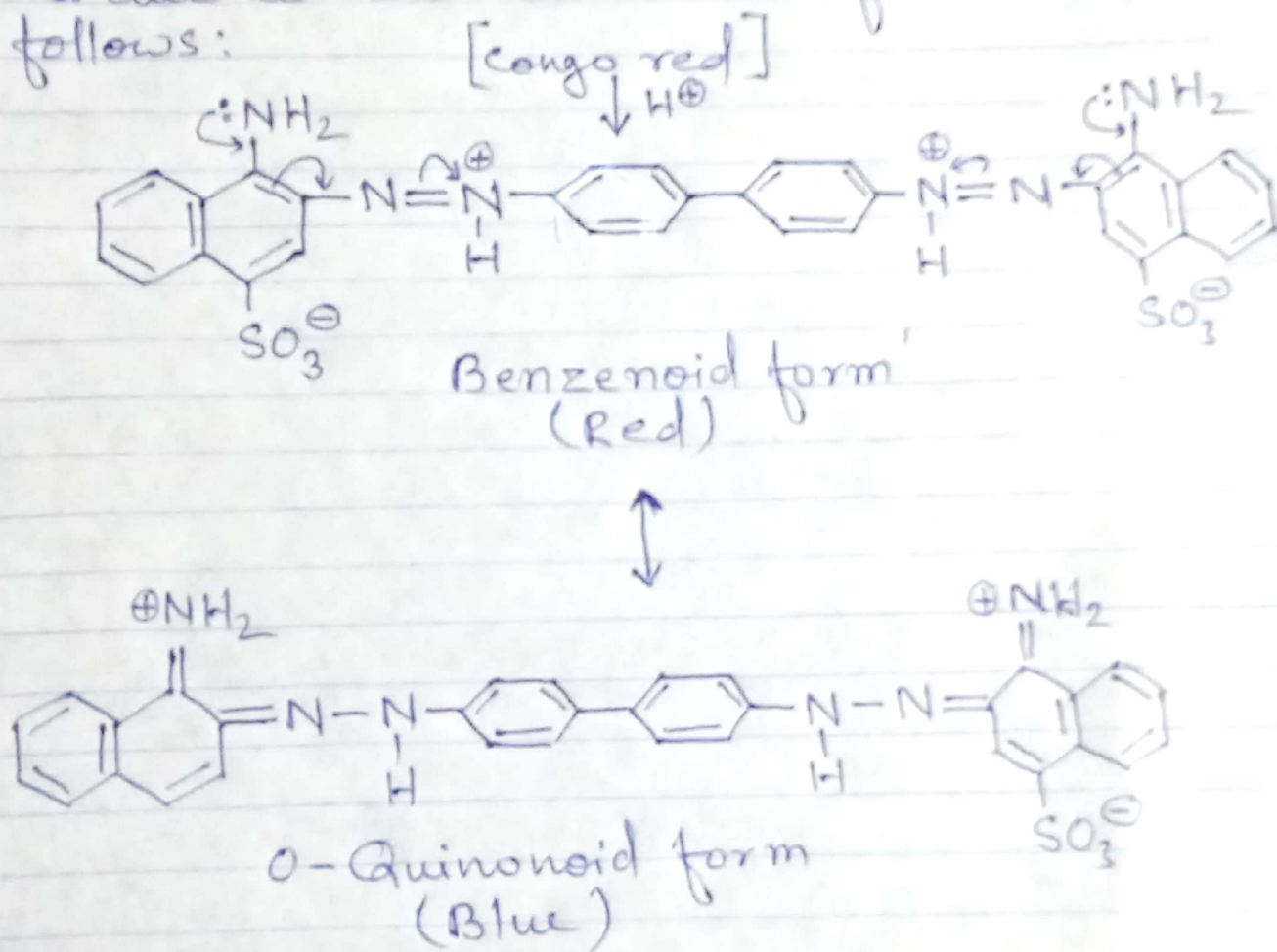


Coupling of diazonium salt with naphthionic acid.



The red salt is very sensitive to acids, the colour turns from red to deep blue in presence of strong mineral acids and to dull purple by organic acids.

The colour change from red to blue in presence of inorganic acids may be explained due to the occurrence of resonance as follows:



Uses:

- i) The red salt is used for dyeing cotton to red.
- ii) It is also used to distinguish as indicator to distinguish between mineral acid and organic acid. Congo paper is used for testing acidity of the solution (pH range 3.0-5.0).
- iii) It is used as indicator in acid-alkali titrations.