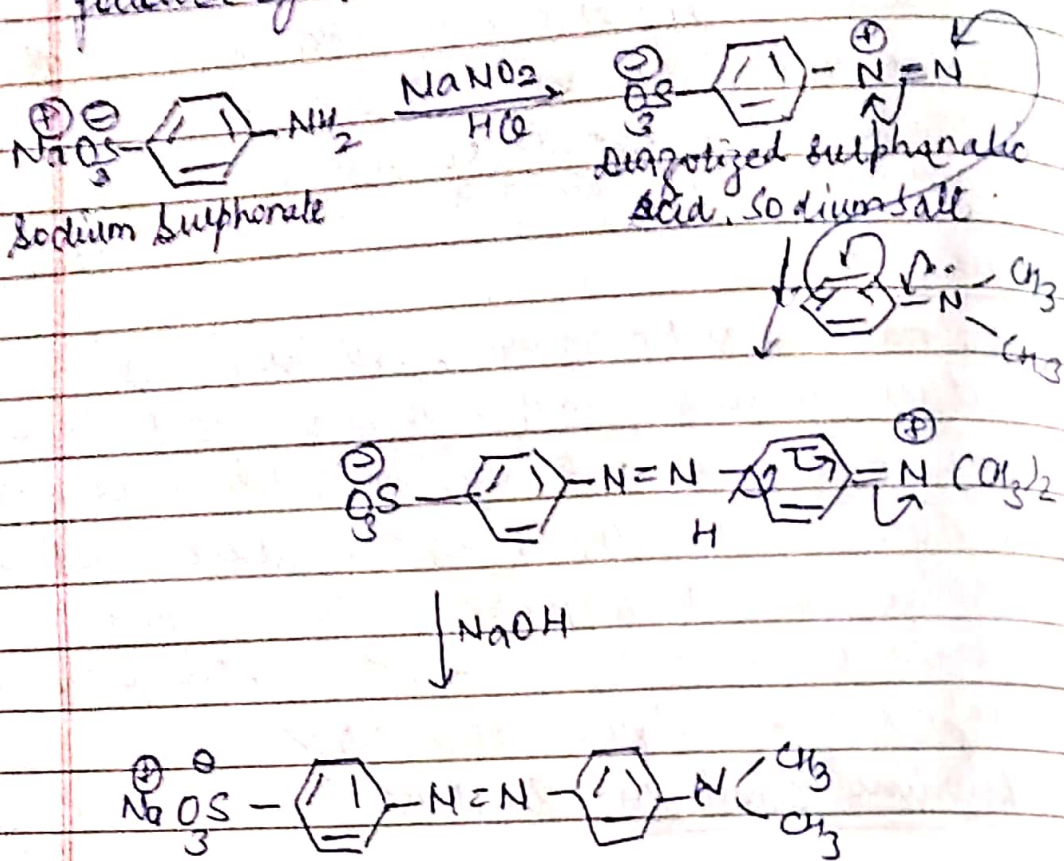


a) Methyl Orange

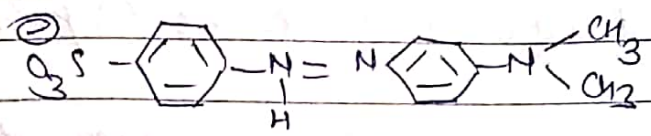
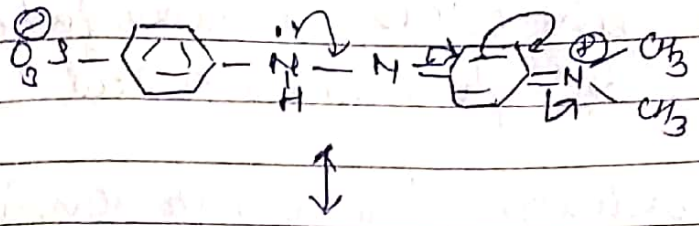
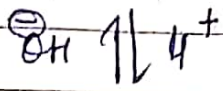
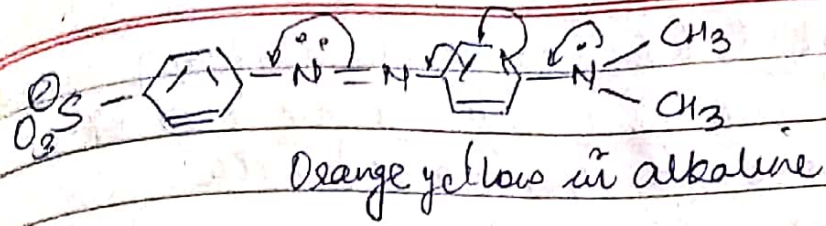
⇒ Acidic dye

⇒ prepared by coupling diazotised sulphuric acid with N,N-dimethylaniline in acetic acid followed by treatment with NaOH.



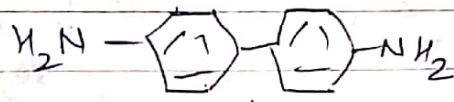
Methyl orange-

- ⇒ Used to dye wool and silk. But color fades on exposure of light and washing
- Mostly it is used as indicator in acid-base titrations (yellow in alkali & pink in acids)
- The color change from yellow to pink is due to change in benzenoid to quinonoid struct. which is resonance stabilized.

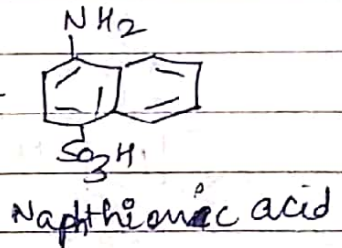
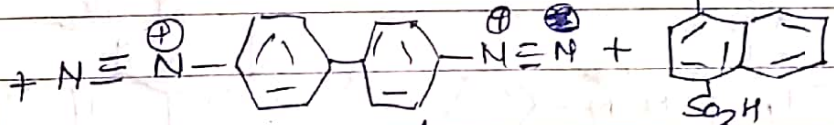
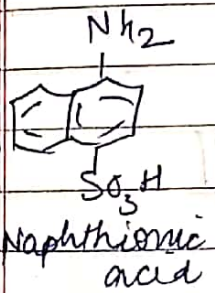


Red (Resonance stabilized)

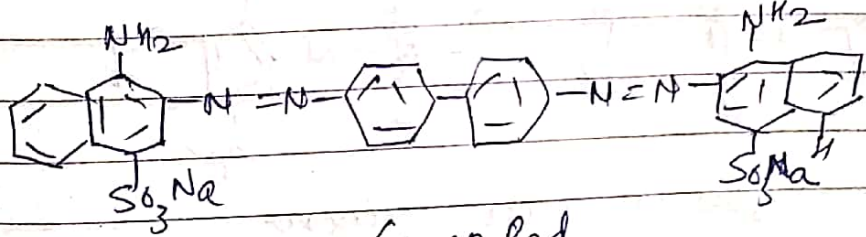
b) Congo Red :-



↓ diazotization
NaNO₂/dil HCl



↓ Na₂CO₃ (coupling)



Congo Red

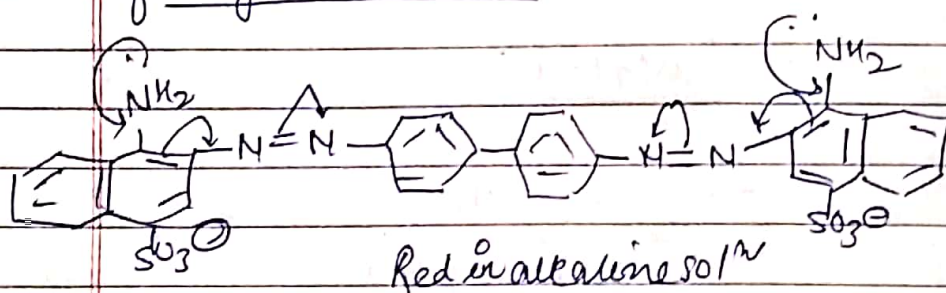
Colour = Color

⇒ It is a dark red bi-azo dye. (used in form of Na-salt)
⇒ prepared by coupling of naphthionic acid (1-naphthylamine-4-sulfonic acid) with tetra-azotised benzidine.

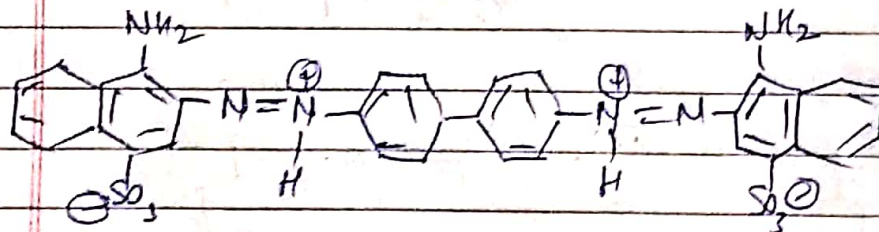
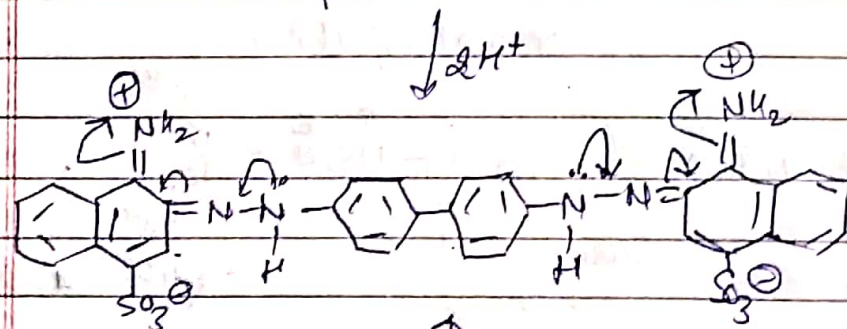
⇒ Used for dyeing cotton, but colour fades to light exposure since high sensitive to acid.

⇒ Used as indicator; blue color in strongly acidic ($< pH 3$) and red color in alkaline ($> pH 4$)

⇒ This color change is due to resonance stabilization of charged-anomical struct.



Red in alkaline solⁿ



Blue in acidic Medium
(Resonance Stabilized)