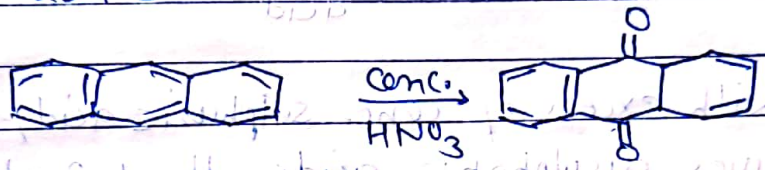
corresponding cupric halide in CCl_4 solution

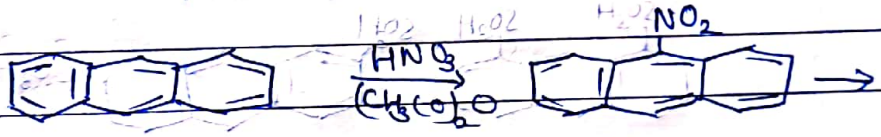
(2) → Nitration Reaction :- Anthracene when react with aqueous nitric acid lead to the formation of anthraquinone by oxidation.

→ Anthracene when treated with concentrated nitric acid in acetic anhydride at 15-20 °C give 9- nitroanthracene and 9,10-dinitroanthracene

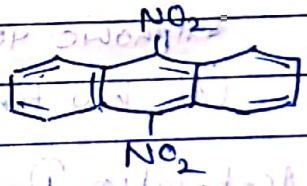
→ 9- nitroanthracene and 9,10-dinitroanthracene can be isolated because 9-nitroanthracene has a m.p. 145 °C while 9,10-dinitroanthracene has m.p- 294 °C



Anthracene → Anthraquinone



Anthracene 15-20°C 9-nitroanthracene



9,10-dinitroanthracene.

(3) Sulphonation Anthracene is readily sulphonated to a mixture of the 1 and 2-sulphonic acids some disulphonic acid also always being obtained; the position is favoured at high temperature.

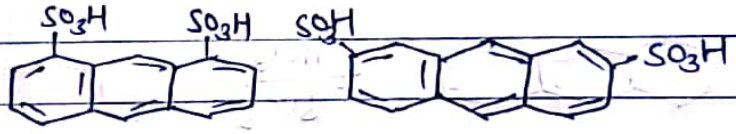
→ If the sulphonation of anthracene is carried out

glacial acetic acid, a mixture of about equal amount of 1- and 2- anthracenesulphonic acid is obtained.

→ The 1- sulphonic acid shows no tendency to rearrange the to the 2- acid

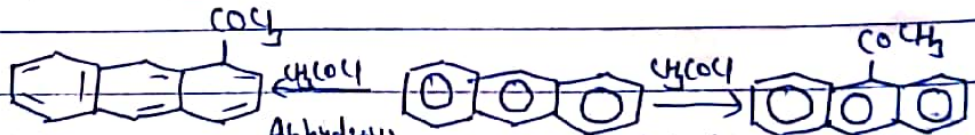
Anthracene — Anthr. 1-sulphonic acid — Anthr. 2-sulphonic acid

→ With excess of conc. sulphuric acid, Anthracene gives disulphonic acids, the 1,8 at low temp. and the 2,7- at high temperature.



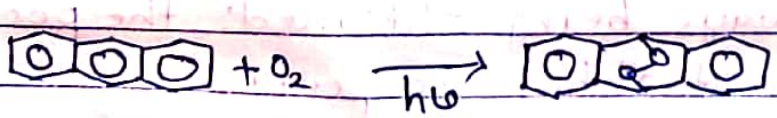
Anthracene-1,8-di sulphonic acid (At low temp.) — Anthracene-2,7-disulphonic acid (At higher temp)

4] Acetylation Reaction:



1-Acetyl anthracene — 9-acetyl anthracene

(5)



Anthracene peroxide

Q.1 Draw all possible resonating structure of anthracene

Q.2 Why anthracene is most reactive at position 9,10- positions or substitution reactions of anthracene takes place at position 9,10

Q.3 Why pyridine is more basic than pyrrole ? explain ?

Q.4 Complete the following reactions:

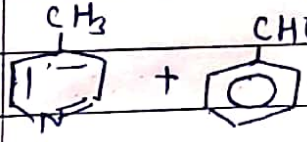
a)  $+ CHCl_3 + NaOH \longrightarrow$?

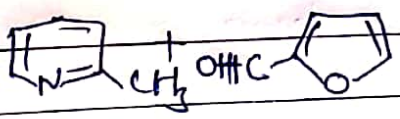
b)  $+$ Conc. HNO_3 $\xrightarrow[570K]{H_2SO_4}$?

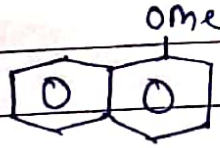
c)  $+ NaNH_2$ $\xrightarrow{Heat}$?

Q.5 How will you show that naphthalene consists of two benzene rings fused together ?

Q Give the products of the following reactions?

a)  $\xrightarrow{NaOH}$?

b)  $\xrightarrow{NaOH}$?

c)  $+$ Conc. $HNO_3 / H_2SO_4 \longrightarrow$?