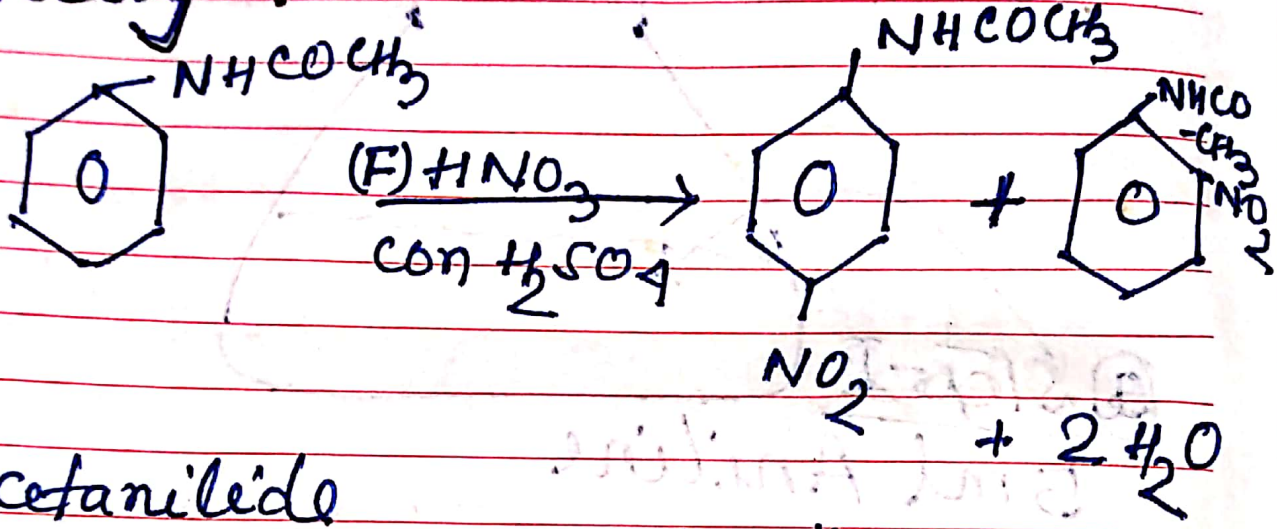
(2) Preparation of p-nitro acetanilide from Acetanilide.

Theory :-



Acetanilide — p-nitro acetanilide.

Chemical required :-

(I) Acetanilide – 10 gm

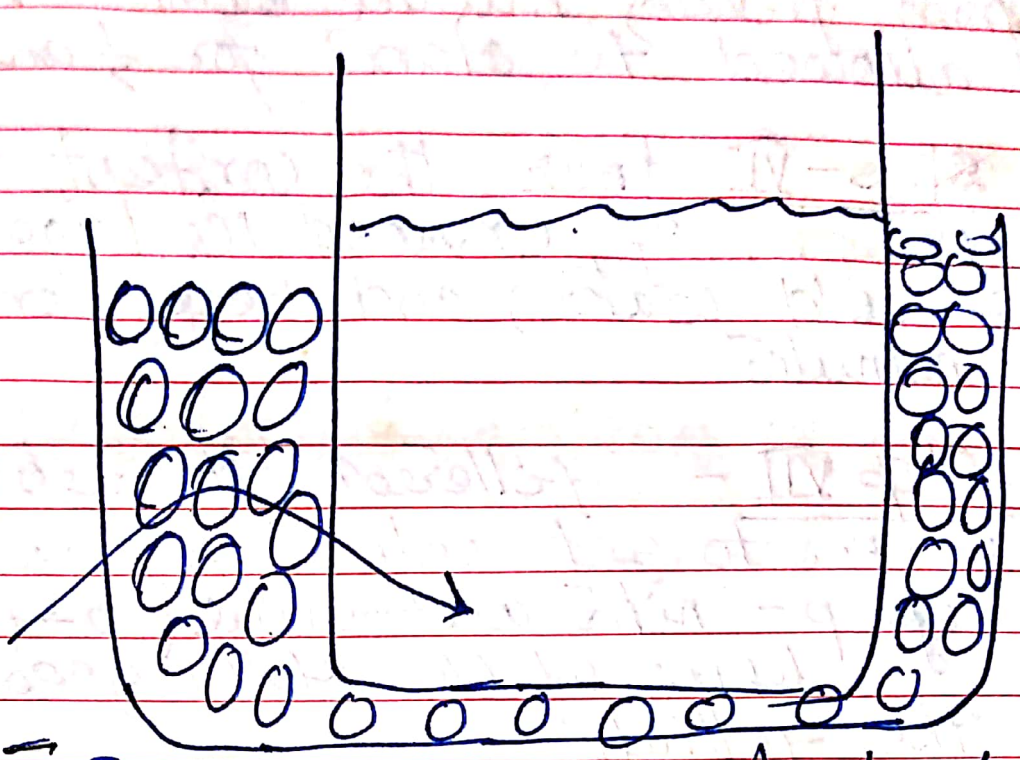
(II) Glacial CH_3COOH – 10 ml

(III) Fuming HNO_3 – 4 ml

(IV) Conc. H_2SO_4 – 20 ml

Freezing mixture bath – (ice + NaCl)

Procedure :-



Step I :- 10 gm (powder) Acetanilide
+
10 ml glacial CH_3COOH
+

Step-II – Stirred / warm to get clear solution
+
20 ml conc. H_2SO_4 dropwise with constant stirring

Step-III Placed the reaction mixture in a freezing mixture bath to get temp 0–5°c.

Step-IV Added 4 ml of Fuming HNO_3 dropwise with constant Stirring.

Notes

Step-V - Remove the beaker from freezing mixture bath and allowed to stand for $\frac{1}{2}$ an Hour.

Step-VI Pour the content to 100 gm of crushed ice (200 ml of cold water) and keep for 15 minutes

Step VII - filtered through vaccum pump. To get colourless crystal of p- nitro acetanilide (o-isomer being soluble which goes to the filtrate

Result :-

Yield - 8 gm expected
M.P - 214°C

Achual Yield - 6.96 gm.

Appearance → Colourless crystals