

M.H. Ichan D₂(H) 2-5-20 Saturday
Topic - d.f block character
Mawani college

classmate

Date

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- Reducing agent:- Those substance which reduce other and oxidise itself. when central atom present in minimum oxidation state. All metal acts as reducing agent. Reducing agent nature increase with ↓ E.N. value of given atom.
- Both Oxidising and Reducing agent
- When central atom present b/w Maximum and Minimum oxidation state. It oxidise as well as reduce to other and itself.

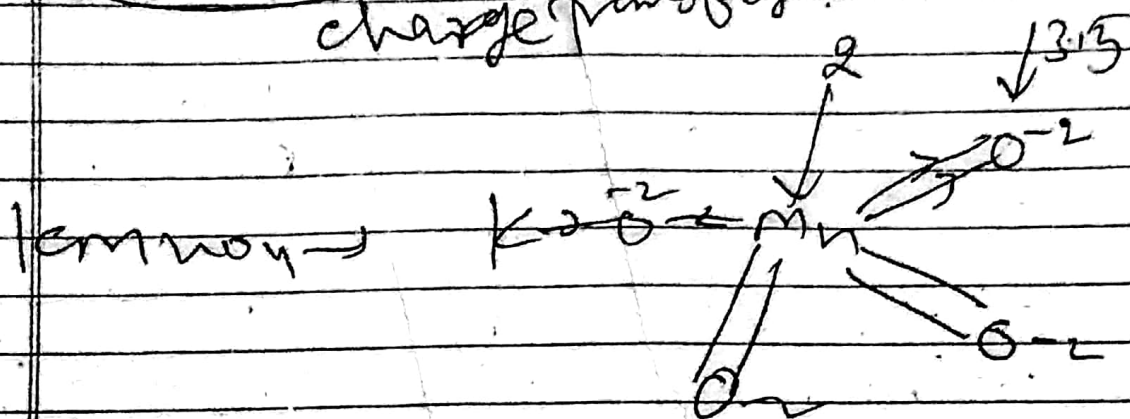
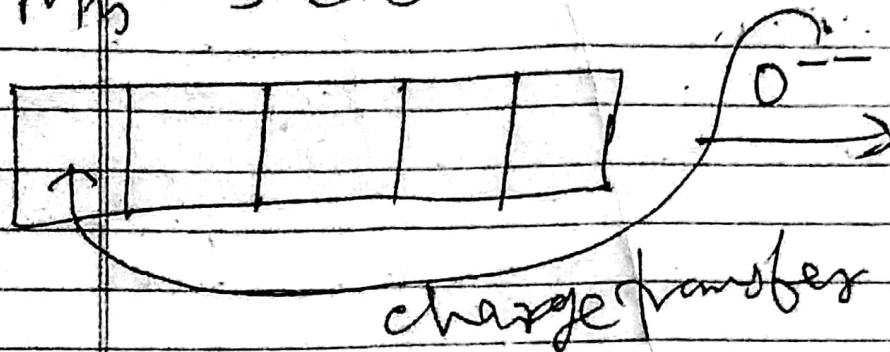
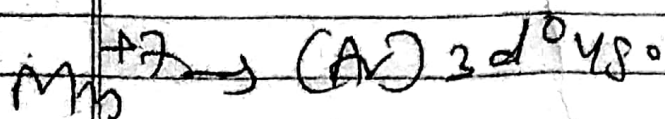
$KMnO_4$

- It is an oxidising agent because Mn present in max. oxidation state +7. It is a metal oxide but acts as acid. due to maximum oxidation state of Mn (+7). It having d⁰ configuration but colour due to charge transfer from ligand O to vacant orbital of metal ion (Mn^{+7})

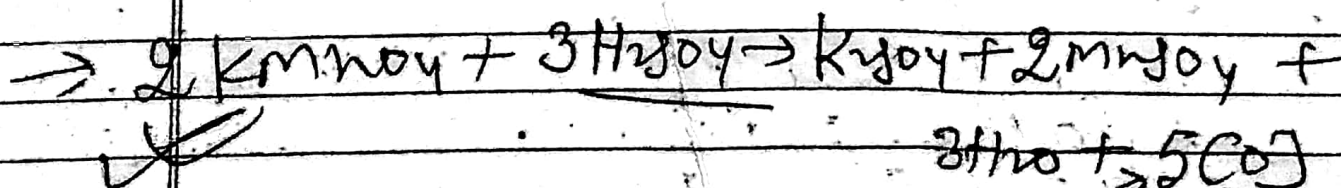
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- Balanced equation of $KMnO_4$ in acidic medium:



Always $\rightarrow CO_2$

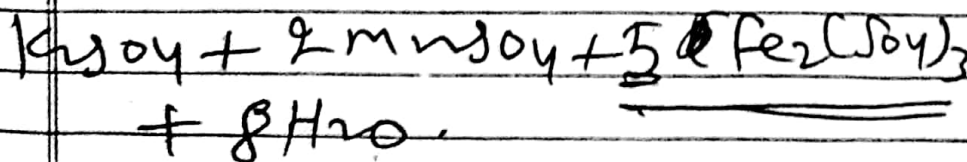
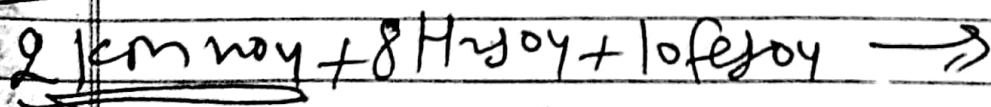
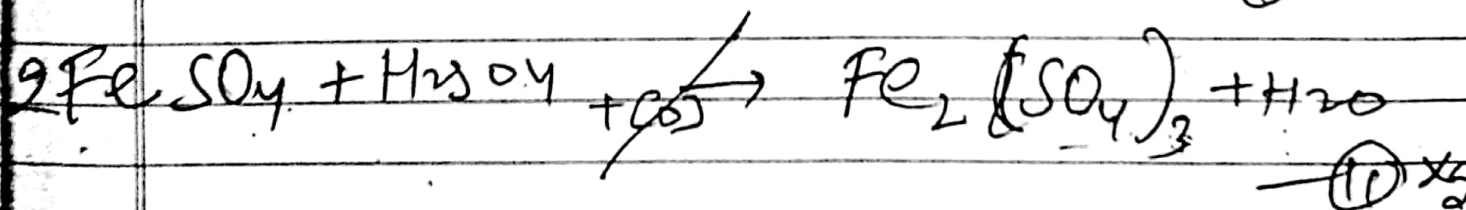
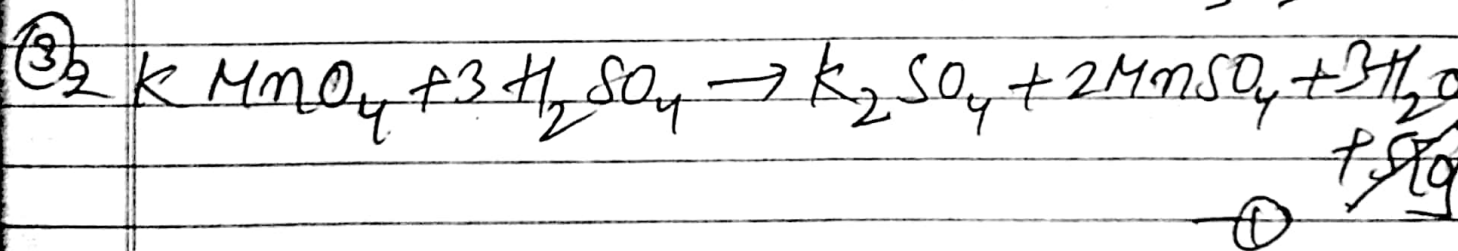
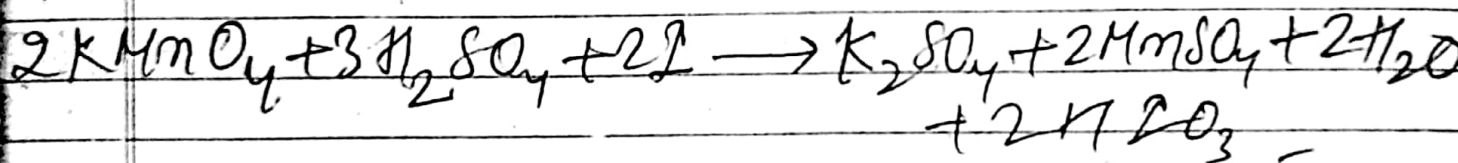
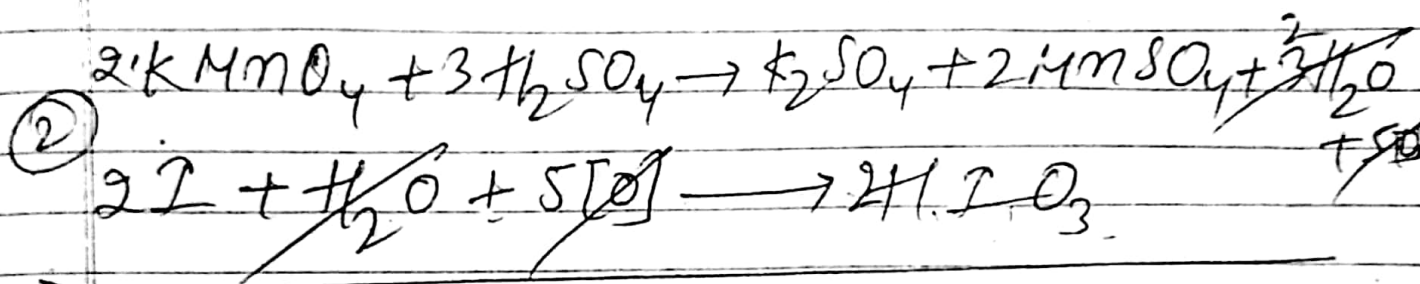
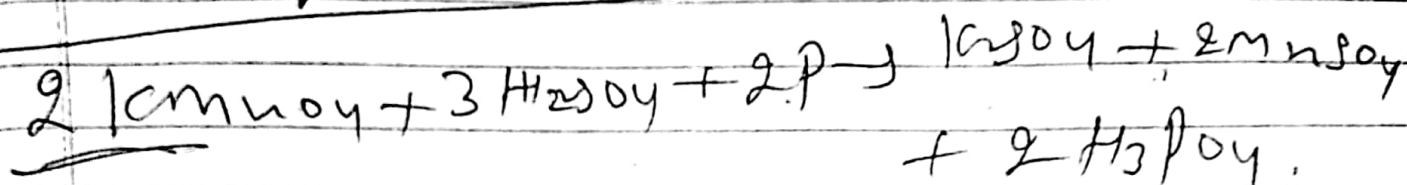
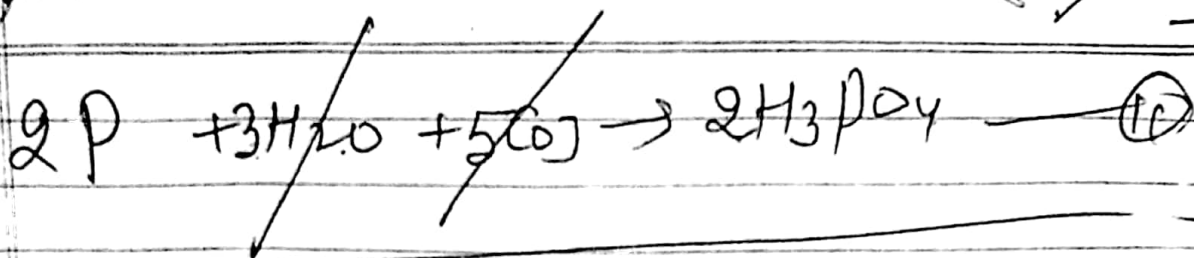
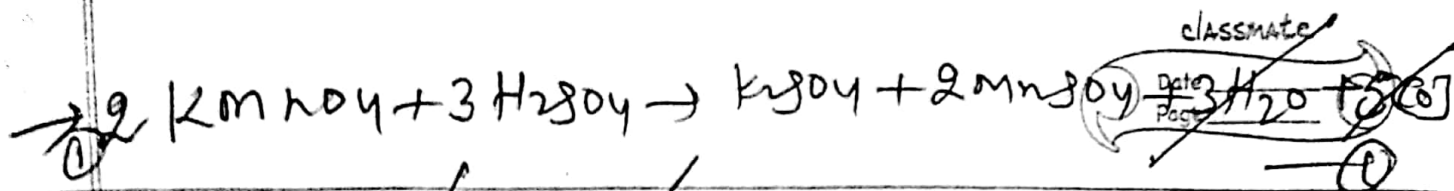
$H_2C_2O_4$ (oxalate) $\rightarrow CO_2$ Nascent oxygen

$Fe \rightarrow H_2O_3, P \rightarrow H_3PO_4$ act as o.a and highly reactive

$P \rightarrow 4H_3PO_4, S \rightarrow H_2SO_4$

$S_8 \rightarrow 8H_2SO_4, FeSO_4 \rightarrow Fe_2(SO_4)_3$

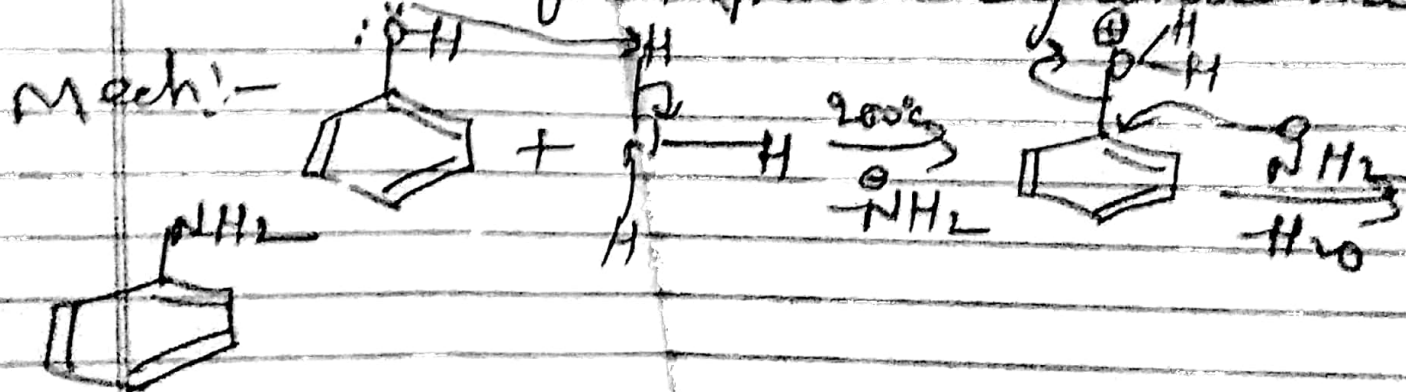
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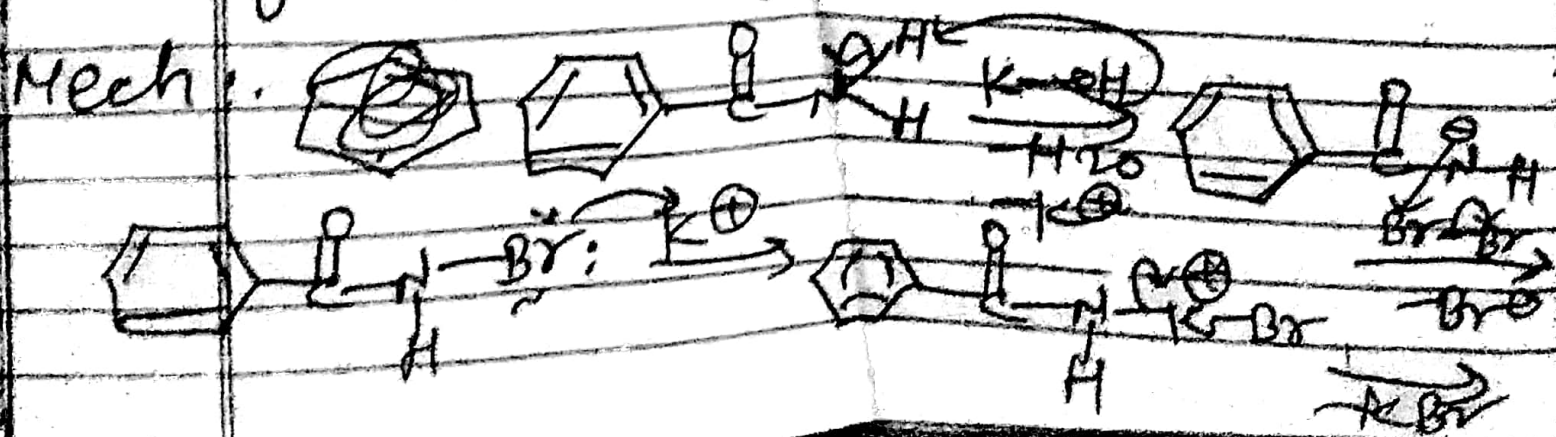
to balance
oxygen
down ref.

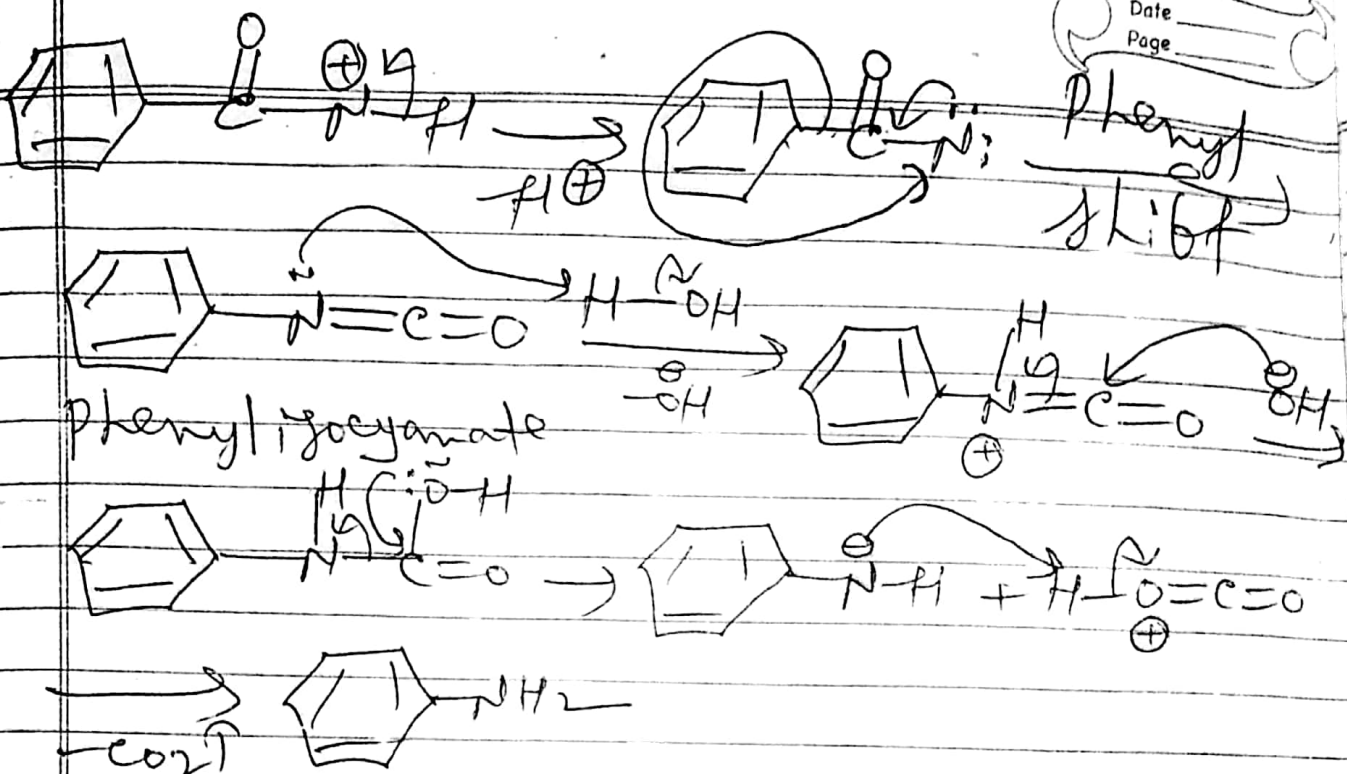
M.H. Ichan 20-5-20 Di(H). Sat
~~Monday~~, Marwaricollege
 topic synthesis of amine.

3. From Phenol:- when Phenol react with NH_3 in presence of ZnCl_2 at 300°C then form Aniline by ionic mech.



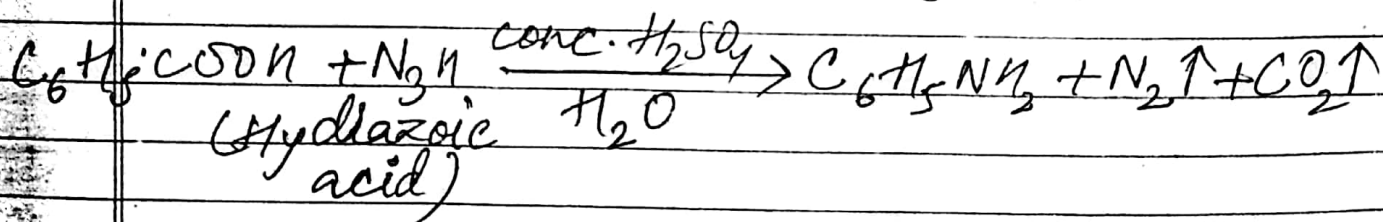
4. From benzamide (Hoffmann's bromide rxn)
 - when benzamide react with Br_2 in presence of base (KOH) then form Aniline by ionic Mech.



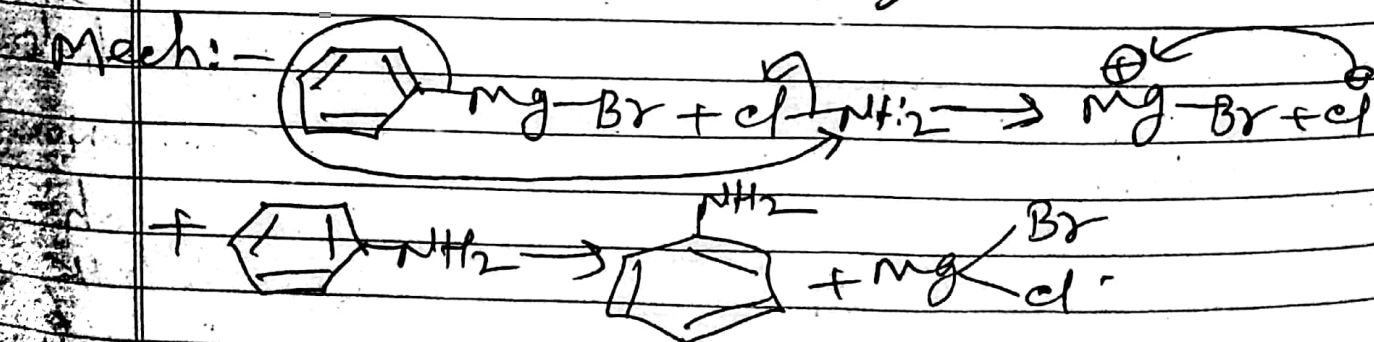


5- From benzoic acid

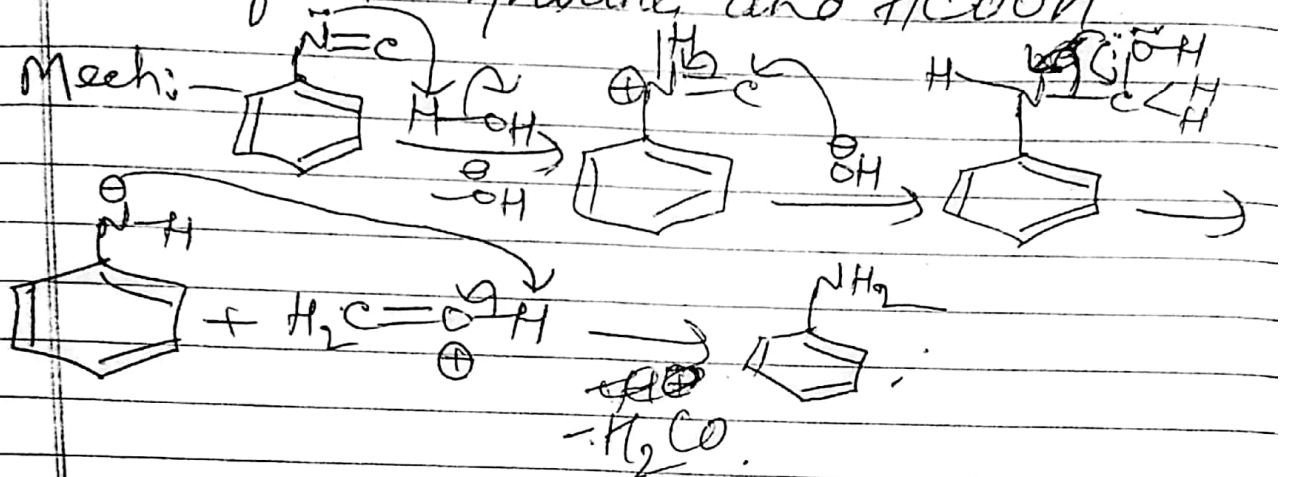
- when benzoic acid react with hydrazoic acid (N_3H) then form Aniline in presence of conc. H_2SO_4 and H_2O . It is known as Schmidt rxn.



6- From Grignard Reagent:- when Grignard Reagent react with chloramine then form Aniline by ionic mechanism.

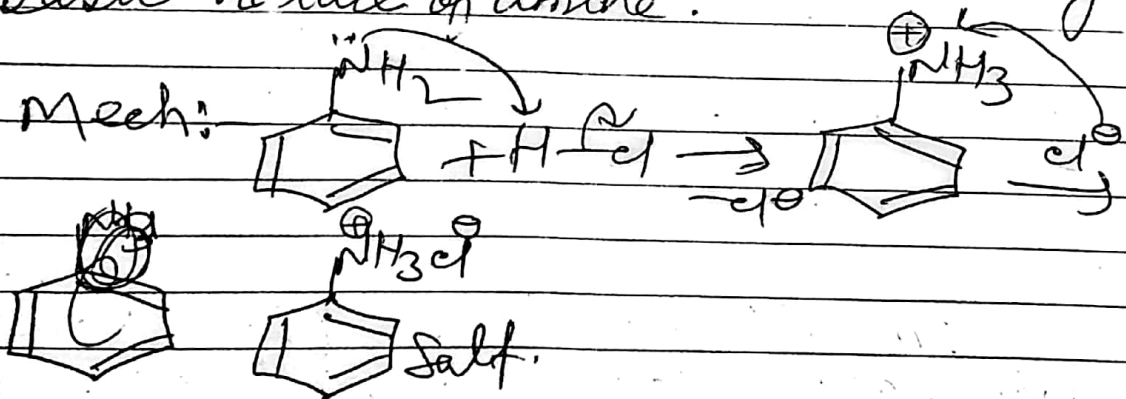


7. From phenyl isocyanide :- when phenyl isocyanide react with water then form Aniline and HCOOH



8. Rm of Aniline

1 - Basic nature :- when Aniline react with Acid then form salt. indicating basic nature of amine.



② Alkylation (addition of alkyl group) :- when aniline react with alkyl halide then form 1°, 2°, 3° and 4° ammonium salt (aniline salt) by ionic mech:-

