DPP

DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

Solutions

Subject : CHEMISTRY
DPP No. : 6

Topic :- Amines

2 **(a)**

$R—CN \xrightarrow{\text{Reduction}} RCH_2CH_2$

3 **(d)**

C_3H_9N may have the structures as:

$\underset{(a)}{(CH_3)_3N}, \underset{(b)}{CH_3CH_2CH_2NH_2}, \underset{(c)}{(CH_3)_2CHNH_2}$

4 **(b)**

Tertiary amines, due to lack of H-atom, attached directly with N, does not react with benzene sulphonyl chloride ($C_6H_5SO_2CI$), i.e., Hinsberg's reagent. $(C_2H_5)_3N$ is a tertiary amine, so does not react with $C_6H_5SO_2CI$.

5 **(d)**

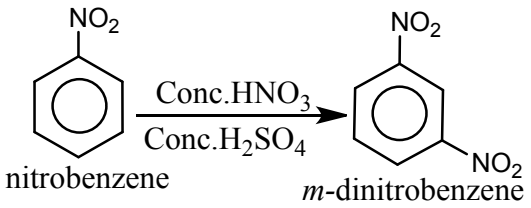
$$CH_3CN \xrightarrow[+2H_2O\ -NH_3]{\text{aq.}H_2SO_4} CH_3COOH \xrightarrow[\Delta\ -CO_2]{\text{Sodalime}} \text{Decarboxylation} \; CH_4$$

Ethane ethanoic acid methane

Nitrile (A)

8 **(a)**

Nitrobenzene on nitration gives *m*-dinitro benzene as $-NO_2$ group is meta-directing.



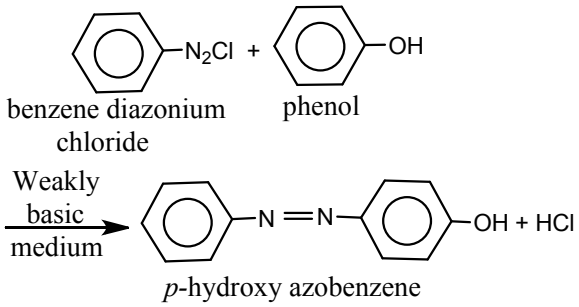
In this reaction the attacking reagent is NO_2^+.

9 **(a)**

Presence of—OCH_3 gp. on aniline makes it more basic than the presence of —NO_2, —Cl or —CH_3 gp.

10 **(b)**

Benzene diazonium chloride reacts with phenol in weakly basic medium gives *p*-hydroxy azobenzene.



11 **(c)**

$R—NC+2HgO \longrightarrow RNCO+Hg_2O$

19 **(d)**

The abnormal trend of 3 amines is explained in terms of steric effect. Note basic order of amines on the basis of pK_b reported in Finar

$(CH_3)_2NH > CH_3NH_2 > (CH_3)_3N > NH_3$

3.23 3.32 4.2 4.73

pK_b

$(C_2H_5)_2NH > (C_2H_5)_3N > C_2H_5NH_2 > NH_3$

3.07 3.13 3.37 4.73

pK_b

20 **(c)**

$SnCl_2 + 2HCl(g) \rightarrow SnCl_4 + 2[H]$

$CH_3CN + 2[H] + HCl \rightarrow CH_3CH = NH.HCl \xrightarrow[\text{boil}]{} H_2OCH_3CHO + NH_4Cl$

(X) (Y)

(X) is acetaldimine hydrochloride and (Y) is acetaldehyde.

ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**A**	**A**	**D**	**B**	**D**	**C**	**C**	**A**	**A**	**B**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**C**	**B**	**B**	**A**	**D**	**B**	**C**	**D**	**D**	**C**