

**Topic :- Amines**

- Hinsberg's method to separate amines is based on the use of:
  - Benzene sulphonyl chloride
  - Benzene sulphonic acid
  - Ethyl oxalate
  - Acetyl chloride
- A primary amine heated with  $\text{CS}_2$  in presence of excess of  $\text{HgCl}_2$  gives isothiocyanate. The reaction is called:
  - Hofmann's bromamide reaction
  - Hofmann's mustard oil reaction
  - Perkin's condensation
  - Hofmann's elimination
- Pyrolysis of  $\text{Me}_3\text{N}^+\text{O}^-$  would give
  - Mixture of  $\text{CH}_2 = \text{CH} - \text{CD}_3$  and  $\text{CH}_3 - \text{CH} = \text{C}_{\text{D}_2}$
  - $\text{CH}_3 - \text{CH} = \text{CD}_2$
  - $\text{Me}_2\text{N}^+ = \text{C}(\text{CD}_3)(\text{CH}_3)$
  - $\text{CH}_2 = \text{CH} - \text{CD}_3$
- Ethyl isocyanide on hydrolysis in acidic medium generates
  - Ethylamine salt and methanoic acid
  - Propanoic acid and ammonium salt
  - Ethanoic acid and ammonium salt
  - Methylamine salt and ethanoic acid
- When aniline is treated with sodium nitrite and hydrochloric acid at  $0^\circ\text{C}$ , it gives
  - Phenol and  $\text{N}_2$
  - Diazonium salt

c) Hydrazo compound d) No reaction takes place

6. Which of the following is not correct?

- a) Ethylamine and aniline both have  $\text{NH}_2$  group
- b) Ethylamine and aniline both dissolve HCl
- c) Ethylamine and aniline both react with  $\text{CHCl}_3$  and KOH to form unpleasant smell
- d) Ethylamine and aniline both react with  $\text{NaNO}_2 + \text{HCl}$  to give hydroxyl compounds in cold

7. Amine is not formed in the reaction

- (A) Hydrolysis of  $\text{RCN}$
- (B) Reduction of  $\text{RCH} = \text{NOH}$
- (C) Hydrolysis of  $\text{RNC}$
- (D) Hydrolysis of  $\text{RCONH}_2$

The correct answer is

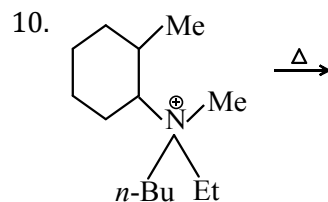
- a) A, B, D b) A, D c) B, C d) A, B, C

8. During coupling reaction of benzene diazonium chloride and aniline, the pH of reaction medium should be approximately

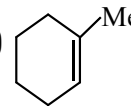
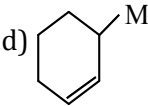
- a) 1 – 2 b) 9 – 10 c) 4 – 5 d) 7 – 8

9. The amine which will not liberate nitrogen on reaction with nitrous acid is

- a) Trimethyl amine b) Ethyl amine c) Sec-butyl amine d) *t*-butyl amine



The alkane formed as a major product in the given elimination reaction is:

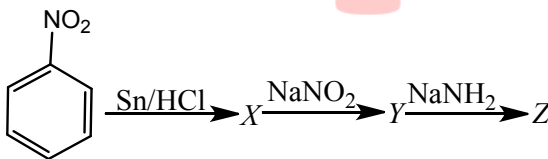
- a)  b)  $\text{CH}_2 = \text{CH}_2$  c)  d) 

11. Carbylamine reaction is given by aliphatic

- a) Primary amine b) Secondary amine
- c) Tertiary amine d) Quaternary ammonium salt

12. Nitrobenzene is reduced by Zn and alcoholic potash mixture to get

- a)  $\text{C}_6\text{H}_5 - \text{NH}_2$  b)  $\text{C}_6\text{H}_5 - \text{NH} - \text{NH} - \text{C}_6\text{H}_5$

- c)  $C_6H_5-N-N-C_6H_5$  d)  $C_6H_5-NH-CO-C_6H_5$
13. The decreasing order of basic characters of the three amines and ammonia is
- a)  $NH_3 > CH_3NH_2 > C_2H_5NH_2 > C_6H_5NH_2$  b)  $C_2H_5NH_2 > CH_3NH_2 > NH_3 > C_6H_5NH_2$
- c)  $C_6H_5NH_2 > C_2H_5NH_2 > CH_3NH_2 > NH_3$  d)  $CH_3NH_2 > C_2H_5NH_2 > C_6H_5NH_2 > NH_3$
14. Which of the following is strongest base?
- a)  $C_6H_5NH_2$  b)  $p-NO_2-C_6H_4NH_2$  c)  $m-NO_2-C_6H_4NH_2$  d)  $C_6H_5CH_2CH_2$
15. Benzyl amine cannot be prepared by
- a)  $C_6H_5CONH_2 \xrightarrow[\text{ether}]{LiAlH_4}$  b)  $C_6H_5CH_2CONH_2 + Br_2 + KOH \rightarrow$
- c)  $C_6H_5CN \xrightarrow{LiAlH_4}$  d)  $C_6H_5CH_2NC \xrightarrow{LiAlH_4}$
16. Urea when heated a white residue is formed. Its alkaline solution when treated with few drops of  $CuSO_4$  solution gives:
- a) Red colour b) Violet colour c) Green colour d) Yellow colour
17. An organic compound 'A' having molecular formula  $C_2H_3N$  on reduction gave another compound B, upon treatment with nitrous acid 'B' gave ethyl alcohol. On warming with chloroform and alcoholic KOH, it formed an offensive smelling compound 'C'. The compound 'C' is
- a)  $CH_3CH_2NH_2$  b)  $CH_3CH_2N \rightleftharpoons C$  c)  $CH_3C \equiv N$  d)  $CH_3CH_2.OH$
18. What is 'Z' in the following reaction?
- 
- a) Benzoic acid b) Cyanobenzoic acid c) Benzamide d) Aniline
19. Amino group is *ortho/para*-directing for aromatic electrophilic substitution. On nitration of aniline, a good amount of *m*-nitroaniline is obtained. This is due to
- a) In nitration mixture, *ortho, para*-activity of  $NH_2$  group is completely lost
- b)  $-NH_2$  because  $-NH_3^+$ , which is *m*-directing
- c)  $-NH_2$  becomes  $-NH^+SO_4^-$ , which is *m*-directing
- d)  $-NH_2$  becomes  $-NH^-NO_2^+$ , which is *m*-directing
20. Carbonyl chloride reacts with ammonia to form:

a)  $\text{CO}_2$

b)  $\text{NH}_2\text{CONH}_2$

c)  $\text{CH}_3\text{COONH}_4$

d)  $\text{CH}_3\text{CONH}_2$

PE