

# Exercise # 1

- Q.1** Nitrobenzene has a smell similar to that of :  
(1) Benzaldehyde [2] Formaldehyde [3] Acetaldehyde [4] Salicylaldehyde
- Q.2** Nitration mixture contains both conc.  $\text{H}_2\text{SO}_4$  and conc.  $\text{HNO}_3$ . Here  $\text{HNO}_3$  works as :  
[1] An aprotic solvent [2] An acid [3] A base [4] An oxidant
- Q.3** Select a reaction where nitrobenzene gives o & p substituted product :  
[1] With solid KOH [2] With conc.  $\text{H}_2\text{SO}_4$   
[3] With conc.  $\text{H}_2\text{SO}_4$  and  $\text{F.HNO}_3$  [4] With  $\text{Cl}_2$  and catalyst
- Q.4** An example of nucleophilic aromatic substitution reaction is :  
[1]  $\text{C}_6\text{H}_5\text{NO}_2/\text{H}_2\text{SO}_4$  [2]  $\text{C}_6\text{H}_5\text{OH}/\text{HNO}_3$  [3]  $\text{C}_6\text{H}_6/\text{CH}_3\text{Cl}/\text{AlCl}_3$  [4]  $\text{C}_6\text{H}_5\text{NO}_2/\text{KOH}$
- Q.5** Solvent used in the, Friedel Craft's reaction is :  
[1] Nitrosobenzene [2] Nitrobenzene [3] Benzene [4] Toluene
- Q.6** In the reaction sequence :  
$$\text{A} \xrightarrow{\text{SnCl}_2/\text{HCl}} \text{B} \xrightarrow[\text{o}^\circ]{\text{NaNO}_2/\text{HCl}} \text{C} \xrightarrow{\text{H}_2\text{O}} \text{C}_6\text{H}_5\text{OH}$$
 A, B and C are –  
[1] Benzene, nitrobenzene, aniline [2] Nitrobenzene, aniline and azo-compound  
[3] Nitrobenzene, benzene, aniline [4] Benzene, amino compound, aniline
- Q.7** In the reaction sequence identify the functional group present in A, B, C  
$$\text{A} \xrightarrow{\text{Sn}/\text{HCl}} \text{B} \xrightarrow[\text{o}^\circ\text{C}]{\text{HNO}_2} \text{C} \xrightarrow{\text{C}_2\text{H}_5\text{OH}} \text{C}_6\text{H}_6 -$$
  
[1]  $\text{NO}_2$ ,  $\text{NH}_2$ ,  $\text{N}=\text{N}$  [2]  $\text{NO}_2$ ,  $\text{NH}_2$ ,  $\text{OH}$  [3]  $-\text{OH}$ ,  $-\text{NH}_2$ ,  $-\text{NO}_2$  [4]  $-\text{NH}_2$ ,  $-\text{NO}_2$ ,  $-\text{N}=\text{N}$
- Q.8** In order to isolate azoxy benzene as the chief reduction product of nitrobenzene, the suitable reductant would be  
[1] Alkaline sodium arsenite [2] Alkaline glucose solution  
[3] Both the above [4] Alkaline sodium stannite
- Q.9** Using Fe-Water-HCl, which one of the following reaction is possible [Here  $\phi = \text{C}_6\text{H}_5$ ]  
[1]  $\phi-\text{NO}_2 \rightarrow \phi-\text{NH}-\text{NH}-$  [2]  $\phi-\text{NO}_2 \rightarrow \phi-\text{NH}_2$   
[3]  $\phi-\text{NO}_2 \rightarrow \phi-\text{NHOH}$  [4]  $\phi-\text{NO}_2 \rightarrow \phi-\text{N}=\text{N}-\phi$
- Q.10**  $\text{NO}_2$  group in benzene nucleus ;  
[1] Activates the ring [2] Deactivates the ring  
[3] Suppresses the ring [4] Keeps the ring unaffected
- Q.11** Isomeric change of phenyl hydroxylamine yields ;  
[1] Mono functional compound [2] Nitroso compound  
[3] Bifunctional compound [4] Secondary amino compound
- Q.12** Which one of the following aromatic amino compound gives alcohol with  $\text{HNO}_2$  ;  
[1] Phenylamine [2] Benzylamine  
[3] N-methylaniline [4] Aniline.
- Q.13** Reaction of nitrobenzene with sodium arsenite gives the product ;  
[1] Azoxy benzene [2] Azobenzene [3] Hydrazobenzene [4] Nitrosobenzene
- Q.14** Both reduction and rearrangement occur in the reaction :-  
[1] Sodium phenate +  $\text{CO}_2 \rightarrow$  Sodium salicylate  
[2] Nitrobenzene  $\rightarrow$  p-Aminophenol  
[3] Aniline  $\rightarrow$  Sulphanilic acid  
[4] Acetamide  $\rightarrow$  Methylamine



- Q.27** What are the names of the following reactions :
- [a]  $\text{RMgCl} + \text{CINH}_2 \rightarrow \text{RNH}_2 + \text{MgCl}_2$   
 [b]  $(\text{CH}_3)_3\text{C-OH} + \text{HCN} + \text{H}_2\text{SO}_4 \rightarrow (\text{CH}_3)_3\text{C-NH}_2$   
 [c]  $\text{CH}_3\text{CONH}_2 + \text{KOH} + \text{Br}_2 \rightarrow \text{CH}_3\text{NH}_2$   
 [d]  $\text{CH}_3\text{CN} + 4\text{H} \xrightarrow{\text{Na/alc.}} \text{CH}_3\text{CH}_2\text{NH}_2$
- [1] Ritter, Hofmann, Medius, Grignard      [2] Grignard, Ritter, Hofmann, Mendius  
 [3] Hofmann, Ritter, Grignard, Mendius      [4] None of the above
- Q.28**  $\text{RCOCl} \xrightarrow{\text{NaN}_3} \text{A} \xrightarrow{-\text{N}_2} \text{R-N=C=O} \xrightarrow{\text{OH}^-} \text{B}$ . The name of the reaction and the endproduct would be-
- [1] Curtius degradation, 2° amine      [2] Curtius degradation, 1° amine  
 [3] Schmidt reaction, primary amine      [4] Schmidt reaction, secondary amine
- Q.29** Which compound is soluble in water :
- [1]  $(\text{CH}_3)_2\text{NH}_2^+\text{Cl}^-$       [2]  $\text{CH}_3\text{NH}_3^+\text{Cl}^-$       [3]  $(\text{CH}_3)_3\text{NH}^+\text{Cl}^-$       [4] All the above
- Q.30** Ethylamine on oxidation with 'acidified  $\text{KMnO}_4$ ' gives :
- [1] Acetaldehyde      [2] Ethylamine oxide [3] Ethanol      [4] Acetamide
- Q.31** Most basic compound is : [R = tert. butyl group]
- [1]  $\text{NH}_3$       [2]  $\text{RNH}_2$       [3]  $\text{R}_2\text{NH}$       [4]  $\text{R}_3\text{N}$
- Q.32** Ethylamine is ..... basic than ammonia while aniline is ..... basic than  $\text{NH}_3$  -
- [1] More, less      [2] Less, more      [3] Both      [4] None
- Q.33**  $\text{CH}_3\text{CH}_2\text{CONH}_2 \xrightarrow[\text{Br}_2]{\text{NaOH}} \text{A}$
- Aqueous solution of A :
- [1] Turns blue litmus to red      [2] Turns red litmus to blue  
 [3] Does not effect the litmus'      [4] Decolourise the litmus
- Q.34** In which of the following reaction sulphur containing compound is not produced :
- [1] Primary amine + Hinsberg reagent      [2] Bromoethane + sodium bisulphide  
 [3] Primary amine + Tilden reagent      [4] Primary amine + carbon disulphide + Mercuric chloride
- Q.35** Which of the following compound does not liberate nitrogen with  $\text{HNO}_2$  :
- [1] Carbamide      [2] primary amine      [3] Secondary amine      [4] Alkanamide
- Q.36** Conversion,  $-\text{COOH} \rightarrow -\text{NH}_2$  is affected by the reagent :
- [1] Sodium azide      [2] Hydrazoic acid      [3] Cyanic acid      [4] Chloramine
- Q.37** Which of the following pair will yield primary amine on hydrolysis :
- [1]  $\text{CH}_3\text{NCO}$ ,  $\text{CH}_3\text{NC}$       [2]  $\text{CH}_3\text{CN}$ ,  $\text{CH}_3\text{NC}$   
 [3]  $(\text{CH}_3)_2\text{NH}$ ,  $\text{CH}_3-\text{CH}=\text{NOH}$       [4] None of the above
- Q.38** A primary amine on treatment with a solution of  $\text{AuCl}_3$  in conc.  $\text{HCl}$  yields a compound whose formula would be :
- [1]  $(\text{BH})^+ \cdot \text{AuCl}_4^{-1}$       [2]  $(\text{BH}_2)^+\text{AuCl}_4^{-2}$       [3]  $\text{BH}^+ \cdot \text{HAuCl}_4^{-1}$       [4]  $\text{B} \cdot \text{AuCl}_4$
- Q.39** Tilden's reagent is :
- [1]  $\text{C}_6\text{H}_5\text{SO}_2\text{Cl}$       [2]  $\text{NOCl}$       [3]  $\text{CINH}_2$       [4]  $(\text{C}_2\text{H}_5)_2\text{Zn}$
- Q.40** The order of basic character of  $\text{CH}_3\text{NH}_2$  and  $(\text{CH}_3)_3\text{N}$  is :
- [1]  $\text{CH}_3\text{NH}_2 < (\text{CH}_3)_3\text{N}$       [2]  $\text{CH}_3\text{NH}_2 > (\text{CH}_3)_3\text{N}$   
 [3]  $\text{CH}_3\text{NH}_2 = (\text{CH}_3)_3\text{N}$       [4] None of the above

- Q.41** Which of the following compound is an isomer of urea :
- [1] Glycine, [2] Ammonium cyanide  
[3] Ammonium cyanate [4] Ammonium carbamate
- Q.42** Reduction of acetaldoxime gives :
- [1] Ethylamine [2] Acetaldehyde [3] Dimethylamine [4] Methylcarbamide
- Q.43** Which of the following compound liberates CO<sub>2</sub> when treated with NaHCO<sub>3</sub> :
- [1] CH<sub>3</sub>COCH<sub>2</sub>NH<sub>2</sub> [2] CH<sub>3</sub>NH<sub>2</sub> [3] (CH<sub>3</sub>)<sub>4</sub>N<sup>⊕</sup>OH<sup>⊖</sup> [4] CH<sub>3</sub>N<sup>⊕</sup>H<sub>3</sub>Cl<sup>⊖</sup>
- Q.44** C<sub>2</sub>H<sub>5</sub>NH<sub>2</sub> cannot be prepared by the reduction of :
- [1] C<sub>2</sub>H<sub>5</sub>NO<sub>2</sub> [2] CH<sub>3</sub>CH = NOH [3] C<sub>2</sub>H<sub>5</sub>NC [4] CH<sub>3</sub>CN
- Q.45** Methylamine on treatment with chloroform and ethanolic caustic alkali gives foul smelling compound, the compound is :
- [1] CH<sub>3</sub>NCO [2] CH<sub>3</sub>CNO [3] CH<sub>3</sub>CN [4] CH<sub>3</sub>NC
- Q.46** The reagent used in the conversion of C<sub>2</sub>H<sub>5</sub>NH<sub>2</sub> to C<sub>2</sub>H<sub>5</sub>Cl would be :
- [1] Sulphuryl chloride [2] Thionyl chloride [3] Nitrosyl chloride [4] Phosphoryl chloride
- Q.47** Formation of parabanic acid from oxalic acid and urea is carried out in presence of :
- [1] Phosphoryl chloride [2] Phosphorus trichloride  
[3] Phosphorus pentachloride [4] None of the above
- Q.48** Mendius reaction involves the reduction of :
- [1] Cyanoalkanes [2] Alkyl isocyanides  
[3] Oximes [4] Nitroalkanes
- Q.49** Which one of the following compound will yield 1° amine on hydrolysis :
- [1] Nitroalkane [2] Cyanoalkane [3] Alkyl isocyanate [4] All the above
- Q.50** Which of the following compound gives the smell of mustard oil :
- [1] Alkyl isocyanate [2] Alkyl isothiocyanate  
[3] Alkyl isocyanide [4] Alkyl isonitrile
- Q.51** Apart from CO<sub>2</sub> and H<sub>2</sub>O one more product is formed in the reaction of urea and nitrous acid. The product is :
- [1] NH<sub>3</sub> [2] N<sub>2</sub> [3] CO [4] O<sub>2</sub>
- Q.52** Urea can be prepared from :
- [1] Urethane [2] Ethyl carbonate [3] Cyanamide [4] All the above
- Q.53** Iso-urea is a tautomeric form of :
- [1] Carbonic acid [2] Carbamide  
[3] Ammonium carbonate [4] Cyanamide
- Q.54** Step involved in the Wohler's synthesis is :
- [1] NH<sub>4</sub>CNO → NH<sub>2</sub>CONH<sub>2</sub> [2] H<sub>2</sub>NCN NH<sub>2</sub>CONH<sub>2</sub>  
[3] 3HCNO → H<sub>3</sub>C<sub>3</sub>N<sub>3</sub>O<sub>3</sub> [4] None of the above
- Q.55** Conversion of ammonium cyanate to urea is done by :
- [1] Pyrolysis [2] Alkylation [3] Rearrangement [4] Elimination
- Q.56** Which one of the following reaction gives sulphamic acid :
- [1] Urea + fuming sulphuric acid [2] Urea + Thionyl chloride  
[3] Urea + sulphuryl chloride [4] Urea + sulphurous acid
- Q.57** In the formation of urea from carbon monoxide, it is essential to prepare first the compound:
- [1] (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>CO<sub>3</sub> [2] COCl<sub>2</sub> [3] H<sub>2</sub>NCOOC<sub>2</sub>H<sub>5</sub> [4] H<sub>2</sub>NCOONH<sub>4</sub>

- Q.58** The product formed from the reactants  $\text{NH}_2\text{CONH}_2$  and  $\text{Br}_2, \text{NaOH}$  would be :  
 [1]  $\text{NaOBr}, \text{Na}, \text{CH}_2, \text{H}_2\text{O}$  [2]  $\text{NaBr}, \text{CO}_2$   
 [3]  $\text{NaBr}, \text{H}_2\text{O}$  [4]  $\text{NaBr}, \text{H}_2\text{O}, \text{N}_2, \text{CO}_2$
- Q.59** Which form of the, barbituric acid serves as sedative and hypnotic :  
 [1] Keto form [2] Enol form [3] Resonating form [4] Charged form
- Q.60** Parabanic acid is another name of :  
 [1] Malonyl urea [2] Oxalyl urea [3] Dimethylol urea [4] None of the above
- Q.61** Urea is strong base than ordinary amides because :  
 [1] Urea molecule contains two -  $\text{NH}_2$  groups [2] Protonated urea shows resonance  
 [3] Urea itself shows resonance [4] Deprotonated urea shows resonance
- Q.62** A reaction in which an organic compound is synthesized from purely inorganic compound is associated with the name :  
 [1] Wohler [2] Williamson [3] Fischer - Tropsch [4] Kolbe
- Q.63** Excretion of urea by a grown up man per day is nearly :  
 [1] 25 - 30 gm. [2] 1 - 5 gm. [3] 40 - 50 gm. [4] 10 - 20 gm.
- Q.64** A mixture of  $1^\circ, 2^\circ$  and  $3^\circ$  amine is formed in the reaction :  
 [1]  $1^\circ$  amide + caustic potash + bromine [2] Methyl halide and ammonia  
 [3] Cyclic imide +  $\text{H}_3\text{O}^+$  [4] Alkyl isocyanide +  $\text{H}_2$
- Q.65** Ethylamine reacts with carbon disulphide in presence of mercuric chloride and gives the main product  
 [1] Ethyl carbylamine [2] Ethyl isonitrile [3] Ethyl isothiocyanate [4] Ethyl thiocyanide
- Q.66** Aqueous solution of methylamine will be :  
 [1] Acidic [2] Basic [3] Neutral [4] Amphoteric
- Q.67**  $\text{CH}_3\text{CONH}_2 \xrightarrow{\text{Br}_2/\text{KOH}} \text{A} \xrightarrow{\text{CHCl}_3/\text{KOH}} \text{B} \xrightarrow{\text{H}_3\text{O}^+} \text{CH}_3\text{NH}_2$   
 What are A' and B respectively :  
 [1]  $\text{CH}_3\text{NH}_2, \text{CH}_3\text{NC}$  [2]  $\text{CH}_3\text{CH}_2\text{NH}_2, \text{CH}_3\text{CH}_2\text{NC}$   
 [3]  $\text{CH}_3\text{NH}_2, \text{CH}_3\text{CH}=\text{NH}$  [4] None of the above
- Q.68** Gabriel reaction for the synthesis of amines, involves the use of :  
 [1]  $1^\circ$  amide [2]  $2^\circ$  amide [3] Cyclic imide [4] Aliphatic amide
- Q.69** If alkyl group of the compound  $\text{R} - \text{CH}=\text{NH}$  is replaced by hydrogen atom, it would be:  
 [1] Acetaldimine [2] Methyleneamine [3] Formaldimine [4] None of these
- Q.70** Which one of the following tests can be used to identify primary amino group in a given organic compound :  
 [1] Iodoform test [2] Victor Meyer's test  
 [3] Carbylamine reaction [4] Libermann's reaction
- Q.71** A compound contains 38.8% C, 16.0% H and 45.2% N. The formula of the compound would be  
 [1]  $\text{CH}_3\text{NH}_2$  [2]  $\text{CH}_3\text{CN}$  [3]  $\text{C}_2\text{H}_5\text{CN}$  [4]  $(\text{CH}_3)_2\text{NH}$
- Q.72** Schotten-Baumann reaction involves :  
 [1] Acylation [2] Benzoylation [3] Esterification [4] Amination
- Q.73**  $\text{CH}_3\text{CONH}_2 \xrightarrow{?} \text{CH}_3\text{CN} \xrightarrow{\text{reduction}} \text{amine}$   
 In the first step oxide of this nonmetal is taken :  
 [1] P [2] N [3] S [4] Cl

- Q.74** When hydrogen atom of isocyanic acid is replaced by methyl group, the compound is nothing but a rearrangement product of :-  
 [1] Acetyl nitrene      [2] Ethyl nitrite      [3] Cyanic acid      [4] Ethyl nitrate
- Q.75**  $\text{CH}_3\text{Cl} \xrightarrow{\text{KCN}} \xrightarrow{+4\text{H}} \text{A} \xrightarrow{\text{NaNO}_2/\text{HCl}} \text{Ethanol} + ?$   
 Apart from ethanol as the main product and the other products would be :  
 [1] Ethylene      [2] Ethyl nitrite      [3] Ethyl chloride      [4] All the above
- Q.76** Proton attached to nitrogen is released in the reaction :  
 [1]  $\text{RCONH}_2 + \text{NaNH}_2$     [2]  $\text{RNH}_2 + \text{Na}$       [3] Both the above      [4] None of the above
- Q.77** Suitable explanation for the order of basic character  $(\text{CH}_3)_3\text{N} < (\text{CH}_3)_2\text{NH}$  is :  
 [1] Steric hindrance of bulky methyl group  
 [2] Higher volatility of 3° amine  
 [3] Decreased capacity for H-bond formation with  $\text{H}_2\text{O}$   
 [4] Decreased electron - density at N-atom
- Q.78** Ethaneamine can be obtained if the following compound is heated with  $[\text{KOH} + \text{Br}_2]$  :  
 [1] Ethanamide      [2] Methanamide      [3] Propionamide      [4] All the above
- Q.79** The structures of  $(\text{CN})_4\text{N}^+$  and  $\text{NH}_3$  are :  
 [1] Square pyramidal and Trigonal Pyramidal    [2] Tetrahedral and Trigonal Pyramidal  
 [3] Trigonal pyramidal and Tetrahedral      [4] Square planar and square pyramidal
- Q.80** [A]  $\text{CH}_3\text{CONH}_2 + \text{KOH} + \text{Br}_2$       [B]  $\text{CH}_3\text{COOH} + \text{soda lime}$       [C]  $\text{CH}_3\text{COOAg} + \text{Br}_2$   
 All the three reactions show similarity in :  
 [1] Descending of carbon atoms      [2] Ascending of carbon atoms  
 [3] Both the above      [4] None of the above
- Q.81**  $[\text{NaNO}_2 + \text{HCl}]$  gives effervescence with the following compound :  
 [1] Acetamide      [2] Urea      [3] Ethane amine      [4] All the above
- Q.82** Weakest amine is :  
 [1] Aniline      [2] Methylamine      [3] Dimethyl amine      [4] Ethylamine
- Q.83** On analysis, an organic compound was found to contain 74% C, 8.65% H and 17.3% N. What is the empirical formula of the compound :  
 [1]  $\text{C}_5\text{H}_8\text{N}$       [2]  $\text{C}_{10}\text{H}_{12}\text{N}$       [3]  $\text{C}_5\text{H}_7\text{N}$       [4]  $\text{C}_{10}\text{H}_{14}\text{N}$
- Q.84** If primary amines are treated with ketones the product is :  
 [1] Urea      [2] Guanidine      [3] Amide      [4] Schiff's base
- Q.85** Gabriel phthalimide reaction is used in the synthesis of :-  
 [1] Primary aromatic amines      [2] Secondary amines  
 [3] Primary aliphatic amines      [4] Tertiary amines
- Q.86** N-ethyl- N-methyl- I-propane amine is :  
 [1] 1° amine      [2] 2° amine      [3] 3° amine      [4] All the above
- Q.87** When ethylamine is treated with sodium nitrite and dil. hydrochloric acid the following products are formed, except :  
 [1] Chloroethane      [2] Ethene      [3] Ethanol      [4] Nitroethane
- Q.88** Least availability' of lone pair of electrons is associated with the following compound :  
 [1]  $\text{NH}_2\text{CONH}_2$       [2]  $\text{CH}_3\text{CH}_2\text{NH}_2$       [3]  $\text{CH}_3\text{NHCH}_2\text{CH}_3$       [4]  $(\text{CH}_3)_3\text{N}$





- Q.101** The product obtained by the alkaline hydrolysis of  $C_2H_5-N=C=O$  when treated with t-butyl magnesium bromide, the compound obtained will be :  
 [1] t-butylamine      [2] n-butylamine .      [3] Isobutane      [4] n-butane
- Q.102** Which of the following property of urea is explained by resonance :  
 [1] High m.p.      [2] Mono acid base      [3] Solubility      [4] All the above
- Q.103** A prolong reaction between- urea and formaldehyde leads to the formation of :  
 [1] Resin      [2] Additive polymer      [3] Homopolymer      [4] None of these
- Q.104** On heating urea and caustic soda solution, the liberated gas is :-  
 [1]  $N_2$       [2]  $CO_2$       [3]  $NH_3$       [4]  $N_2$  and  $NH_3$
- Q.105** Reactants of reaction - I are :  $CH_3CONH_2$ ,  $KOH$ ,  $Br_2$   
 Reactants of reaction-II are :  $CH_3NH_2$ ,  $CHCl_3$ ,  $KOH$   
 The intermediate species of reaction-I and reaction-II are respectively :  
 [1] Carbonium ion, carbene      [2] Nitrene, carbene  
 [3] Carbene, nitrene      [4] Carbocation, carbanion
- Q.106** 0.4 gm. of impure urea when treated with  $Br_2$  and  $NaOH$  produces 112 ml. of nitrogen at NTP. What was the quantity of pure urea in the sample :  
 [1] 0.1 gm.      [2] 0.2 gm.      [3] 0.3 gm.      [4] 0.4 gm.
- Q.107** The percentage of C, H and N in an organic compound are 48, 24 and 28 respectively. The empirical formula of the compound is :  
 [1]  $C_2H_{12}N$       [2]  $C_3H_{12}N$       [3]  $CH_6N$       [4]  $CH_4N$
- Q.108** A compound of molecular formula  $C_3H_9N$  when reacts with benzene sulphonyl chloride gives a product soluble in dilute  $NaOH$  solution. The compound should be –  
 [1]  $CH_3-\underset{\begin{array}{c} | \\ CH_3 \end{array}}{CH}-NH_2$       [2]  $CH_3-NH-C_2H_5$       [3]  $(CH_3)_3N$       [4] All of these
- Q.109** N,N-dimethylacetamide is obtained in the reaction :  
 [1] Acetyl chloride and methanamine      [2] Acetyl chloride and ethanamine  
 [3] Acetyl chloride and dimethylamine      [4] Acetyl chloride and diethylamine
- Q.110** Solubility of ethylamine in water is due to :  
 [1] Low molecular weight      [2] Ethyl group as present in ethyl alcohol  
 [3] Formation of H-bonding with water      [4] Being a derivative of ammonia
- Q.111**  $RNH_2 + CHCl_3 + 3KOH(alc.) \rightarrow A + 3KCl + 3H_2O$   
 From the product 'A',  $RNH_2$  can again be obtained by :  
 [1] Ammonolysis      [2] Reduction      [3] Oxidation      [4] Hydrolysis
- Q.112** Reaction for the preparation of 1° amine is :  
 [1] Hofmann carbylamine reaction      [2] Hofmann mustard oil reaction  
 [3] Hofmann bromamide reaction      [4] Lieberman nitroso reaction
- Q.113** Effervescence are given by which of the following. compounds, when treated with  $[NaNO_2 + HCl]$   
 [1]  $RCOOH$       [2]  $RCH_2NH_2$       [3]  $RCH_2OH$       [4] None
- Q.114** Lowest value of  $pK_b$  will be of -  
 [1]  $NH_3$       [2]  $(CH_3)_2NH$       [3]  $(CH_3)_3N$       [4]  $CH_3NH_2$
- Q.115** Hofmann's rearrangement during the conversion of- an amide to amine is :  
 [1] Intramolecular      [2] Intermolecular      [3] Both      [4] None.



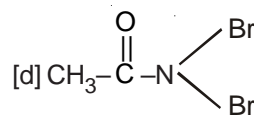
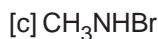
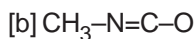
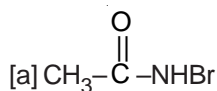
- Q.116** The basic character of amines can be explained:-  
 [1] In terms of Lewis and Arrhenius concept  
 [2] In terms of Lowry and Bronsted concept  
 [3] In terms of Lewis and Lowry Bronsted concept.  
 [4] Only by Lewis concept
- Q.117** t-butyl isocyanide on reduction gives :  
 [1] t-butylamine. [2] t-butyl methylamine  
 [3] t-butylethylamine [4] None
- Q.118** The reaction:  $[C_2H_5Br + NH_3]$  is in fact an example of :  
 [1] Ammonolysis only  
 [2] Nucleophilic substitution only  
 [3] Ammonolysis as well as nucleophilic substitution  
 [4] None
- Q.119** Which of the following reagents converts carbamide into ammonium chloride and  $CO_2$  :  
 [1]  $SOCl_2$  [2] dil. HCl [3] Urease [4]  $H_2O$  and heat
- Q.120** How many primary amines can be formulated by  $C_3H_9N$  and how many  $1^\circ$  hydrogen are associated with carbon atoms .of each compound :  
 [1] Two primary amines [3, 6] [2] One primary amine [3]  
 [3] Three primary amines [3, 6, 6] [4] Two primary amines [5, 6]

## Answer-key

<b>Qus.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
<b>Ans.</b>	1	3	1	4	2	2	1	3	2	2	3	2	1	2	2	4	4	1	2	2	1	2	4	2	4
<b>Qus.</b>	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
<b>Ans.</b>	4	2	2	4	1	1	1	2	3	3	2	1	1	2	2	3	1	4	3	4	3	1	1	3	2
<b>Qus.</b>	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
<b>Ans.</b>	2	4	2	1	3	1	2	4	2	2	2	1	1	2	3	2	1	3	3	3	1	2	1	1	4
<b>Qus.</b>	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
<b>Ans.</b>	3	1	3	2	1	4	1	3	4	3	3	4	1	3	3	1	4	4	4	4	3	3	3	4	2
<b>Qus.</b>	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120					
<b>Ans.</b>	3	4	1	3	2	3	1	1	3	3	4	3	2	2	1	3	2	3	2	4					

# Exercise # 2

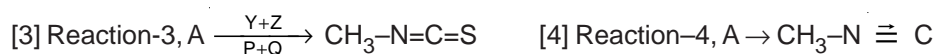
- Q.1** Urea does not produce ammonia gas if heated with the reagent :-  
 [1] Nitrous acid [2] dil. base [3] Urease [4] Hydrazine
- Q.2** Chloroplatinic acid is a :-  
 [1] Dibasic acid [2] Monobasic acid [3] Tribasic acid [4] None of these
- Q.3**  $\text{CH}_3\text{CONH}_2$ ,  $\text{Br}_2$  &  $\text{KOH}$ . give  $\text{CH}_3\text{NH}_2$  as the product. The intermediates of the reaction are :



The correct answer is :

- [1] a, b [2] a, c [3] b, d [4] c, d
- Q.4** Gabriel phthalimide reaction is used in the preparation of:-  
 [1] Secondary amine [2] Primary aliphatic amine  
 [3] Primary aromatic amine [4] Tertiary amine
- Q.5** Which compound does not react with  $\text{Br}_2$  :-  
 [1] Propene [2] Phenyl amine [3] Phenol [4] Chloroform
- Q.6** An organic compound was found to contain C = 38.8%, H = 16.0%, N = 45.2%. The formula of the compound is:  
 [1]  $\text{CH}_3\text{NH}_2$  [2]  $\text{CH}_3\text{CN}$  [3]  $\text{C}_2\text{H}_5\text{CN}$  [4]  $\text{CH}_2(\text{NH}_2)_2$
- Q.7**  $(\text{CH}_3)_4\text{NOH}$  is basic than  $\text{NH}_4\text{OH}$  :-  
 [1] More [2] Less [3] Both the above [4] None of the above
- Q.8**  $\text{RCOOH} + \text{H}_2\text{N}\phi \rightarrow \text{RCONH}\phi$ . The class name of the products :  
 [1] Anilide [2] Anils [3] Amine [4]. None of these
- Q.9** Formation, of urea oxalate  $(\text{NH}_2\text{CONH}_2)_2(\text{COOH})_2$ . proves that urea is a -  
 [1] Diacid base [2] Mono acid base [3] Both the above [4] None of these
- Q.10** Oxalic acid + Urea  $\xrightarrow[-2\text{H}_2\text{O}]{\text{POCl}_3}$  Cyclic compound Number of  $\text{sp}^2$  hybridised carbon in the cyclic compound are:  
 [1] 2 [2] 5 [3] 3 [4] 1
- Q.11** This compound does not respond to carbylamine reaction :  
 [1] Isopropylamine [2] -Diethylamine [3] t-Butylamine [4] Sec-Butylamine
- Q.12**  $\text{A} + \text{CS}_2 + \text{HgCl}_2$  gives  $\text{C}_2\text{H}_5-\text{N}=\text{C}-\text{S}$ . Thus compound A is :  
 [1]  $\text{C}_2\text{H}_5\text{NH}_2$  [2]  $\text{C}_2\text{H}_5\text{NHC}_2\text{H}_5$  [3]  $\text{CH}_3-\text{CH}=\text{NOH}$  [4]  $\text{CH}_3\text{CH}_2\text{NO}_2$
- Q.13** Ammonolysis of alkyl halide gives :  
 [1] Primary amine [2] Secondary amine  
 [3] Tertiary amine [4] Mixture of amines and quaternary compound
- Q.14** Which compound on hydrolysis yields primary amine :-  
 [1] Nitroparaffin [2] Alkylcyanide [3] Oxime [4] Alkyl isocyanide
- Q.15** Blue litmus can be turned to red by the compound:-  
 [1]  $\text{ROH}$  [2]  $\text{RNH}_2$  [3]  $\text{RN}^+\text{H}_3\text{OH}^-$  [4]  $\text{RN}^+\text{H}_3\text{Cl}^-$
- Q.16** In which case alkylamine is not formed :  
 [1]  $\text{R}-\text{X} + \text{NH}_3 \rightarrow$  [2]  $\text{R}-\text{CH}=\text{NOH} + [\text{H}] \xrightarrow[\text{alc.}]{\text{Na}}$   
 [3]  $\text{R}-\text{CN} + \text{H}_2\text{O} \xrightarrow{\text{H}^+}$  [4]  $\text{RCONH}_2 + 4[\text{H}] \xrightarrow{\text{LiAlH}_4}$

**Q.17** Keeping aside one reaction, all other reaction are connected with the name of one scientist only:



**Q.18** Nitration of nitrobenzene in presence of fuming nitric acid will generate a :

- [1] Solid product [2] Gaseous product  
[3] Semi-solid product [4] Liquid product

**Q.19**  $\text{C}_6\text{H}_5\text{NO}_2 \xrightarrow{\text{SnCl}_2/\text{HCl}} \text{A} \xrightarrow[\text{o}^\circ]{\text{NaNO}_2/\text{HCl}} \text{B} \rightarrow \text{Benzene}$ , In the above sequence B  $\rightarrow$  Benzene is suitably

obtained by using :

- [1] Ethanol [2]  $\text{H}_3\text{PO}_2$  [3] Both the above [4] Methanol

**Q.20** The presence of nitro group in nitrobenzene is ascertained by :

- [1] Schiff's test [2] Mulliken and Barker's test  
[3] Both the above [4] None of the above

**Q.21** Nitrobenzene and  $\text{CH}_3\text{Cl}$  in presence of anhydrous  $\text{AlCl}_3$  gives :

- [1] o-Nitrotoluene [2] p-Nitrotoluene [3] Both the above [4] Reaction will not occur

**Q.22** Nitration of which of the following compound is difficult :

- [1] Benzene [2] Nitrobenzene [3] Toluene [4] Phenol

**Q.23** Reaction of nitrobenzene with methyl chloride in presence of anhydrous aluminium chloride the compound formed is :-

- [1] m-Nitrotoluene [2] o-Nitrotoluene [3] p-Nitrotoluene [4] None

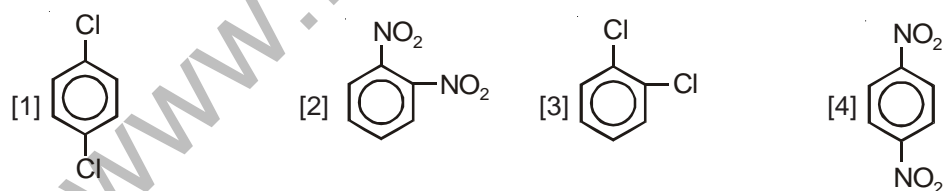
**Q.24** When nitrobenzene is heated with -fuming  $\text{HNO}_3$  and conc.  $\text{H}_2\text{SO}_4$  the product would be :-

- [1] T.N.T. [2] T.N.B. [3] D.D.T. [4] T.E.L.

**Q.25** In the nitration of benzene conc.  $\text{HNO}_3$  and conc.  $\text{H}_2\text{SO}_4$  are taken. Here the function of conc.  $\text{H}_2\text{SO}_4$  is :-

- [1] As a dehydrating agent [2] As an oxidant  
[3] As a producer of nucleophile  $\text{NO}_2^-$  [4] As a producer of electrophile  $\text{NO}_2^+$

**Q.26** Which of the following has the maximum value of dipolemoment :-



**Q.27** Before proceeding for the nitration of aminobenzene, the  $\text{NH}_2$  group is first protected by:

- [1] Alkylation [2] Acetylation [3] Formylation [4] Chloromethylation

**Q.28** Benzylamine and aminobenzene differs by :

- [1]  $\text{CH}$  [2]  $\text{C}_2\text{H}_2$  [3]  $\text{CH}_2$  [4]  $\text{CH}_3$

**Q.29** Aniline is purified by :

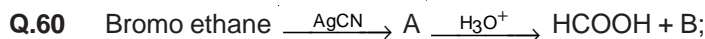
- [1] Azeotropic distillation [2] Steam distillation  
[3] distillation in presence of magnesium [4] Fractional crystallisation

**Q.30** Aniline can be obtained by :-

- [1] Benzoyl chloride and ammonia [2] Reduction of benzamide  
[3] Phenol and ammonia in presence of  $\text{ZnCl}_2$  [4] Benzoic anhydride and ammonia

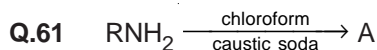
- Q.31** Select the reaction in which diphenyl thiourea is formed as the product :
- [1]  $C_6H_5NH_2 + S$  [2]  $C_6H_5NH_2 + K_2S$   
 [3]  $C_6H_5NH_2 + CS_2$  [4]  $C_6H_5NH_2 + NH_4HS$
- Q.32** Aniline is manufactured by :
- [1]  $C_6H_5NO_2, Fe, H_2O, HCl$  [2]  $C_6H_5Cl, NH_3, Cu_2O$   
 [3]  $C_6H_5NO_2, Zn, NaOH$  [4]  $C_6H_5NO_2, SnCl_2, HCl$
- Q.33** With NaOCl aniline gives the colour :
- [1] Green [2] Blue [3] Purple [4] Orange
- Q.34** With carbonyl chloride, aniline forms the product :-
- [1]  $(C_6H_5NH)_2CO$  [2]  $C_6H_5NC$  [3]  $C_6H_5CN$  [4]  $C_6H_5CNO$
- Q.35** Reagent and condition to form  $(SO_3H)C_6H_4NH_2$  (Para) from aniline would be :
- [1]  $F.H_2SO_4-180^\circ C$  [2] dil.  $H_2SO_4-5^\circ C$  [3]  $Na_2SO_4-180^\circ C$  [4]  $H_2SO_3-100^\circ C$
- Q.36** When  $-OCH_3$  group is introduced at para position in- aniline, it will cause its basic character to :
- [1] Increase [2] Decrease [3] Remain unchanged [4] None of the above
- Q.37** Reaction of methylamine and acetyl chloride is similar to the reaction of aniline with :
- [1] Carbonyl chloride [2] Methyl chloride [3] Bromine water [4] Acetic anhydride
- Q.38**  $C_6H_5NH_2, CHCl_3$  and KOH give the main product :
- [1] Phenyl cyanide [2] Benzyl cyanide [3] Benzyl carbylamine [4] Phenyl isonitride
- Q.39** Aniline on direct nitration produces :
- [1] o-Nitroaniline [2] m-Nitroaniline [3] p-Nitroaniline [4] 1 & 3 are correct
- Q.40** Which one of the following is not an azo compound :-
- [1] Methyl orange [2] Benzenediazonium chloride  
 [3] Phenolphthalein [4] p-hydroxyazobenzene
- Q.41** Schotten-Baumann reaction is not possible with :
- [1]  $CH_3NH_2$  [2]  $C_6H_5NH_2$  [3]  $C_2H_5NH_2$  [4]  $C_6H_5CONH_2$
- Q.42** Which one of the following group is not meta directing :
- [1]  $-CHO$  [2]  $-NO_2$  [3]  $-SO_3H$  [4]  $-NH_2$
- Q.43** A low temperature reaction of aniline with  $HNO_2$  and subsequent treatment with alkaline  $\beta$ -naphthol solution produces a precipitate whose colour would be :-
- [1] Black [2] Purple [3] White [4] Orange
- Q.44** Nitration of acetanilide followed by hydrolysis gives :
- [1] o-Nitroaniline [2] p-Nitroaniline [3] o & p-Nitroaniline [4] o-Nitroanilinium ion
- Q.45** I  $\xleftarrow{COCl_2}$  Aniline  $\xrightarrow{C_2H_5MgI}$  II. Products I and II are :
- [1] Diphenylurea, ethane [2] Diphenylurea,  $C_6H_5MgI$   
 [3] Diphenylamine, ethane [4] Diphenylamine, benzene
- Q.46**  $C_6H_5NH_2 \xrightarrow[0-5^\circ]{NaNO_2/HCl}$  A Which is the incorrect structure of the product 'A' :-
- [1]  $C_6H_5-N=N-Cl$  [2]  $[C_6H_5-N_2^+Cl^-]$  [3]  $[C_6H_5-N^+ \equiv N^-]$  [4] None of the above
- Q.47** A crystalline compound is formed by the reaction of aniline and chloroplatinic acid. The compound on ignition gives :-
- [1]  $[C_6H_5NH_3]Cl$  [2]  $[C_6H_5NH_2]_2, H_2PtCl$   
 [3] Pt [4]  $PtCl_6$





A, B, C respectively in the above sequence are :

- [1] Ethane amine, methane nitrile and diethyl amine  
 [2] Carbyl amino ethane, ethane amine and secondary amine  
 [3] Ethyl isocyanide, ethyl amine and methyl isocyanate  
 [4] Carbylamino ethane, ethane amine and ethyl methyl amine



True statement for the compound A is :

- [1] It does not undergo alkaline hydrolysis [2] It can also produced by RBr and KCN  
 [3] It gives primary amine on reduction [4] It gives secondary amine on acidic hydrolysis

**Q.62** When I-propane amine is treated with  $\text{NaNO}_2$  and HCl the products will be :

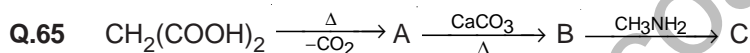
- [1] I-propanol, 2-propanol [2] Propene  
 [3] 2-Chloropropane, 1-chloropropane [4] All of these

**Q.63** Basic character of organic compound is due to the presence of :

- [1] CHO [2] -OH [3]  $> \text{C} = \text{O}$  [4]  $-\text{NH}_2$

**Q.64** Nitrilo group is present in :

- [1] Primary amine [2] Secondary amine [3] Tertiary amine [4] None of these



Compound C in the above sequence is :

- [1]  $(\text{CH}_3)_2\text{C} = \text{NCH}_3$  [2]  $\text{CH}_3\text{CH} = \text{NCH}_3$  [3]  $(\text{CH}_3)_3\text{C} = \text{NCH}_3$  [4] All of these

**Q.66** Benzyl amine is ..... basic than aniline while ethane amine is ..... basic than diethyl amine

- [1] More, less [2] Less, more [3] Both [4] None

**Q.67** Urethanes are esters of—

- [1] Carbamic acid [2] Citric acid [3] Malonic acid [4] Succinic acid

**Q.68** Which of the following on Hofmann, hypobromite reaction does not give  $\text{RNH}_2$ —

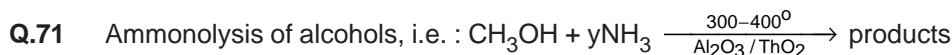
- [1] Isobutyramide [2] Carbamide [3] Ethan amide [4] Benzamide

**Q.69** Which of the following on acidic hydrolysis gives primary amine :

- [1]  $\text{CH}_3\text{CN}$  [2]  $\text{CH}_3\text{NO}_2$  [3]  $\text{CH}_3\text{CNO}$  [4]  $\text{CH}_3\text{NC}$

**Q.70** All classes of amines react with :

- [1] Water [2] Acids [3] Alkylhalides [4] All the above



- [1]  $\text{CH}_3\text{NH}_2$  [2]  $(\text{CH}_3)_2\text{NH}$  [3]  $(\text{CH}_3)_3\text{N}$  [4] A mixture of amines



A and B respectively are :

- [1]  $\text{NH}_3 \cdot \text{Na}_2\text{CO}_3$  [2]  $\text{NH}_3, \text{NaCl}$  [3]  $\text{NH}_3, \text{carbamide}$  [4] None

- Q.73** In which of the following reactions  $N_2$  is not liberated :
- [1]  $NH_2CONH_2 + NaOBr$  [2]  $C_2H_5NH_2 + NOCl$   
 [3]  $(C_2H_5)_2NH + HNO_2$  [4]  $CH_3CONH_2 + HNO_2$
- Q.74** On reduction of Schiff's base we get :
- [1] Primary amine [2] Secondary amine  
 [3] Anils [4] Anilide
- Q.75** Amine not showing Hofmann's mustard oil reaction is :
- [1] 1-Butaneamine [2] 2-Butaneamine  
 [3] 2-Methyl-1-propaneamine [4] N-Methyl-1-propaneamine
- Q.76**  $CH_2N_2$  shows different type of reaction with which one of the following substracts :
- [1]  $CH_3OH$  [2]  $CH_3CH_2NH_2$  [3]  $CH_2=CH-CH_3$  [4]  $CH_3-CH_2-CH_2-CH_3$
- Q.77** Minimum boiling point would be of :
- [1] Ethylmethyl amine [2] Ethyl.amine [3] n-Propyl amine [4] Trimethylamine
- Q.78** Reduction of :-
- $$\begin{array}{l} CH_3 \\ \diagdown \\ C=NOH \\ \diagup \\ CH_3 \end{array}$$
 by Na and EtOH yields
- The compound :-
- [1] s-Amine [2] p-Amine [3] t-Amine [4] None of these
- Q.79** [a]  $NH_3$ , [b]  $RNH_2$ ,  
 [c]  $R_2NH$  and [d]  $R_3N$
- Show the order of basic character [if  $R=CH_3$ ]:
- [1]  $c > b > d > a$  [2]  $a > b > c > d$  [3]  $b > a > c > d$  [4]  $c > a > b > d$
- Q.80** Choose the wrong statement :-
- [1]  $1^\circ$  Amine gives mustard oil-reaction [2]  $1^\circ$  Amine forms salt with  $H_2PtCl_6$   
 [3]  $1^\circ$  Amine gives hydrogen with sodium [4]  $1^\circ$  Amine gives alcohol by hydrolysis
- Q.81** Urea is insoluble in ether, because :
- [1] Urea shows polar character [2] Urea shows non-polar character  
 [3] Urea is a neutral compound [4] None of the above
- Q.82** Reaction not connected with the name of a scientist is :
- [1]  $-CN \xrightarrow{Na/EtOH} CH_2NH_2$   
 [2]  $-CONH_2 \xrightarrow{NaNO_2/Br_2} -NH_2$   
 [3]  $-CH_2CH_2NH_2 \xrightarrow{NaNO_2/HCl} -CH_2-CH_2OH$   
 [4]  $-COOH \xrightarrow[H_2SO_4]{N_3H} -NH_2$
- Q.83** Which of the following reagent gives nitrogen gas when treated with primary amine :
- [1] Nitrous acid [2] Nitric acid [3] Hypobromite [4] 1 and 3
- Q.84** Which of the following is used as a solvent in the Friedel-Crafts reaction :
- [1] Toluene [2] Nitrobenzene [3] Benzene [4] Aniline



**Q.85** Match list I with II and choose the correct answer from the codes given below :

List I		List II	
[A]	Aniline	a.	Used in making azo dyes
[B]	Nitrobenzene,	b.	Sulpha drug
[C]	Sulphanilamide	c.	Solvent in the Friedel Crafts reaction
[D]	Trinitrotoluene	d.	Used as explosive

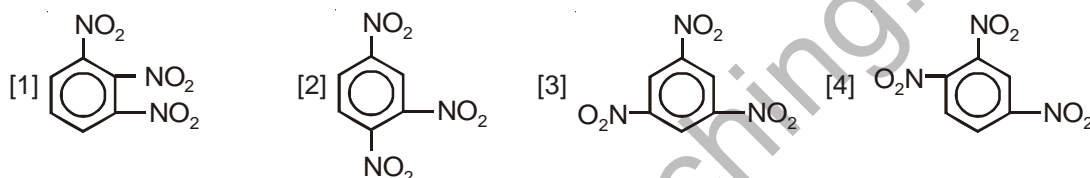
Code is

	A	B	C	D
[1]	a	c	b	d
[2]	a	b	c	d
[3]	c	d	a	b
[4]	d	c	b	a

**Q.86** Reduction of nitrobenzene with zinc and methanolic alkali gives mainly

- [1] Aniline                      [2] p-Aminophenol      [3] Azoxybenzene      [4] Azobenzene

**Q.87** Nitration of m-dinitro benzene gives :



**Q.88**  $\phi-X \xleftarrow[\text{HNO}_2]{\text{Cu}} \text{C}_6\text{H}_5\text{N}_2\text{Cl} \xrightarrow[\Delta]{\text{Water}} \phi-Y$ . In the above sequence X and Y respectively are :

- [1] o, p and m directing                      [2] o, p and o, p directing  
[3] m and m directing                      [4] m and o, p directing

**Q.89** Which of the following compounds gives an explosive on decarboxylation :

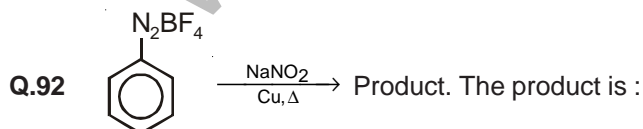
- [1] 2,4, 6-Trinitrobenzoic acid                      [2] 2, 4-Dinitrobenzoic acid  
[3] o-Aminobenzoic acid                      [4] o-Hydroxy benzoic acid

**Q.90** Choose the false statement :

- [1] All the activating groups are o- & p-directing  
[2] Halogens although deactivating' to some extent are o, p directing  
[3] Groups more deactivating than halogens are m-directing  
[4] Nitration of t-butyl benzene is easier as compared to toluene

**Q.91** Intramolecular H-bonding is possible in :

- [1] p-Nitrophenol                      [2] o-Nitrophenol                      [3] p-Nitrobenzaldehyde                      [4] p-chlorophenol

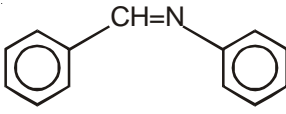


- [1] Nitrobenzene                      [2] Fluorobenzene                      [3] o-Di flourobenzene                      [4] m-Dinitrobenzene

**Q.93** The order of stability of aniline and anilinium ion is :

- [1]  $\text{C}_6\text{H}_5\text{NH}_2 \sqcup \text{C}_6\text{H}_5\text{NH}_3^+$                       [2]  $\text{C}_6\text{H}_5\text{NH}_2 < \text{C}_6\text{H}_5\text{NH}_3^+$   
[3]  $\text{C}_6\text{H}_5\text{NH}_2 > \text{C}_6\text{H}_5\text{NH}_3^+$                       [4] None of the above


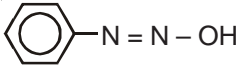
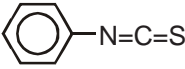
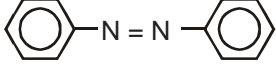


- Q.108** Mustard oil reaction will be given by :  
 [1] Aniline [2] N-Methylaniline [3] N,N-Dimethylaniline [4] All the above
- Q.109** Number of moles of oxygen present in one mole of sulphanic acid are:  
 [1] 3 Mole [2] 1 Mole [3] 0.5 Mole [4] 1.5 Mole
- Q.110** In which case aromatic hydrocarbon is obtained :  
 [1] o-Toluic acid + sodalime +  $\Delta$  [2] Salicylic acid + Sodalime +  $\Delta$   
 [3] o-Amino benzoic acid + sodalime +  $\Delta$  [4] Benzoic acid + hydrazoic acid +  $\Delta$
- Q.111** In sulphanic acid, the elements of low and high atomic number are respectively :  
 [1] H and N [2] N and S [3] C and N [4] H and S
- Q.112**  is not a/an :  
 [1] Benzylidene aniline [2] Anil [3] Schiff's base [4] N-Phenyl acetaldimine
- Q.113** Which compound does not show diazo reaction :  
 [1] Aniline [2] p-Toluidine [3] p-Nitroaniline [4] Benzylamine
- Q.114** When diazonium compound shows Gattermann reaction then  $N_2$  is replaced by :  
 [1] H-atom [2] OH-group [3] Nitro group [4] Halogen atom
- Q.115** Reaction of benzenediazonium chloride with alkaline  $\beta$ -naphthol gives an azo dye. This is an example of :-  
 [1] Electrophilic substitution [2] Nucleophilic substitution  
 [3] Oxidative coupling [4] A free radical reaction
- Q.116** Which cation is stable :  
 [1] Aryl diazonium cation [2] Propyl diazonium cation  
 [3] Both the above [4] None of the above
- Q.117** Which of the following is most basic :  
 [1] Aniline [2] o-Nitroaniline [3] m-Nitroaniline [4] p-Nitroaniline
- Q.118** Benzoylation of which of the following compounds cannot be termed as Schotten-Baumann reaction:  
 [1] Benzene [2] Phenol [3] Aniline [4] Benzylalcohol
- Q.119** The minimum value of  $-\log K_b$  will be for the compound :  
 [1] o-Nitroaniline [2] p-Nitroaniline [3] p-Chloroaniline [4] p-Methoxyaniline
- Q.120** The order of basic strength of aromatic amines is :  
 [1]  $3^\circ > 2^\circ > 1^\circ > NH_3$  [2]  $3^\circ < 2^\circ < 1^\circ < NH_3$   
 [3]  $2^\circ < 3^\circ < 1^\circ < NH_3$  [4] None

## Answer-key

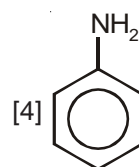
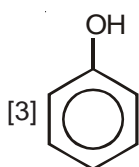
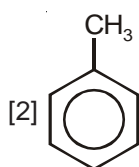
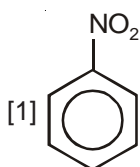
<b>Qus.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
<b>Ans.</b>	1	1	1	2	4	1	1	1	2	3	2	1	4	4	4	3	2	1	3	2	4	2	4	2	4
<b>Qus.</b>	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
<b>Ans.</b>	2	2	3	2	3	3	1	3	1	1	1	4	4	2	3	4	4	4	3	1	4	3	3	3	2
<b>Qus.</b>	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
<b>Ans.</b>	4	1	4	2	1	3	3	3	4	4	1	4	4	3	1	1	1	2	4	4	4	3	3	2	4
<b>Qus.</b>	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
<b>Ans.</b>	3	4	2	1	4	4	1	3	4	2	1	4	3	4	1	4	2	2	3	1	4	3	2	3	2
<b>Qus.</b>	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120					
<b>Ans.</b>	3	3	4	3	4	1	1	1	4	1	4	4	4	4	1	1	1	1	4	2					

# Exercise # 3

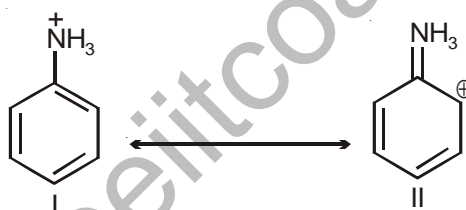
- Q.1** The compound produced in the reaction between , carbon disulphide and HCl would be :-
- [1]  [2]  [PMT-1994]
- [3]  [4] None of these
- Q.2** For converting aniline into chlorobenzene which of the following reagents is not used :
- [1]  $\text{Cl}_2$  [2] HCl [3]  $\text{HNO}_3$  [4] CuCl [PET MP-1994]
- Q.3** When aniline reacts with  $\text{NaNO}_2$  and dil. HCl at  $0^\circ - 5^\circ \text{C}$  the product formed is :
- [1] Nitro aniline [2] Benzene diazonium chloride [PMT(MP)-1996]  
[3] Benzene [4] Trinitroaniline
- Q.4** Maximum basic compound is :
- [1] Benzylamine [2] Aniline [3] Acetanilide [4] p - nitroaniline [PET 1996]
- Q.5** Purification of aniline is done by :
- [1] Fractional crystallisation [2] Fractional distillation [PET 1996]  
[3] Steam distillation [4] Vacuum distillation
- Q.6** Aniline on treatment with fuming sulphuric acid gives :
- [1] Sulphanic acid [2] Sulphanilic acid [PMT 1996]  
[3] o- aminobenzene sulphonic acid [4] None of the above
- Q.7** After nitration of benzene, reaction with (Sn + HCl) the end product will be:- [RPMT -2000]
- [1]  $\text{C}_6\text{H}_5\text{NH}_2$  [2]  $\text{C}_6\text{H}_5\text{NO}_2$  [3]  $\text{C}_6\text{H}_5\text{OH}$  [4]  $\text{C}_6\text{H}_5\overset{\text{O}}{\parallel}\text{N}=\text{N}-\text{C}_6\text{H}_5$
- Q.8** Directing of nitro group in nitrobenzene :- [RPMT -2000]
- [1] P -directing [2] m - directing [3] o, p - directing [4] None of these
- Q.9** When aniline heated with benzaldehyde, then product is :- [RPMT -2000]
- (l) Benzoyne [2] Azoxy benzene [3] Schiff base [4] Unsaturated acid
- Q.10** What obtain, when, aniline react with chloroform in presence of alcoholic KOH [RPMT -2000]
- [1] Nitrobenzene. [2] Chlorobenzene [3] Acetylene [4] Phenyl isocyanide
- Q.11** Which of the following is weakest base : [RPMT -2000]
- [1] Ammonia [2] Methyl amine [3] Dimethyl amine [4] Trimethyl amine
- Q.12** Urea is not used as a : [RPMT -2000]
- [1] As fertilizer [2] In manufacturing of plastic  
[3] In preparation of medicine [4] In purification of water
- Q.13** Which mixture of  $\text{NH}_4\text{Cl}$  and KCNS heated. Product will be : [RPMT -2000]
- [1]  $\text{N}_2\text{O}$  [2]  $\text{NH}_2\text{CONH}_2$  [3]  $\text{NH}_3$  [4]  $\text{CH}_3\text{NH}_2$
- Q.14** Which the following compounds is isomeric with urea :- [RPMT-2001]
- [1] Ammonium cyanid [2] Glycine  
[3] Ammonium thiocyanate [4] Ammonium cyanate
- Q.15** A compound which gives two carbon acid by oxidation :- [RPMT-2001]
- [1] Ethanol [2] Ethyl nitrile [3] Acetamide [4] Ethyl amine

- Q.16** Product formed by Reaction between primary amine  $\text{CHCl}_3$  and alcoholic  $\text{KOH}$ :- **[RPMT-2002]**  
 [1] Cyanide [2] Iso cyanide [3] Nitro amine [4] Alkane
- Q.17** Which of following exist as zwitter ion :- **[RPMT-2002]**  
 [1] Ammonium acetate [2] Ethyl acetate [3] Glycine [4] Aniline hydro chloride
- Q.18** In this reaction  $\text{C}_6\text{H}_5\text{NH}_2 + \text{HCl} + \text{NaNO}_2 \rightarrow \text{X}$  product X is :- **[RPMT-2002]**  
 [1] Aniline hydrochloride [2] Nitro aniline  
 [3] Benzenediazoniumchloride [4] None
- Q.19** In the sequence of the following reaction **[MPMT-2002]**  
 $\text{CH}_3\text{OH} \xrightarrow{\text{HI}} \text{CH}_3\text{I} \xrightarrow{\text{KCN}} \text{CH}_3\text{CN} \xrightarrow{\text{Reduction}} \text{X} \xrightarrow{\text{HNO}_2} \text{Y}$  X and Y is :  
 [1]  $\text{CH}_3\text{CH}_2\text{NH}_2$  and  $\text{CH}_3\text{CH}_2\text{OH}$  [2]  $\text{CH}_3\text{CH}_2\text{NH}_2$  and  $\text{CH}_3\text{COOH}$   
 [3]  $\text{CH}_3\text{CH}_2\text{OH}$  and  $\text{CH}_3\text{CHO}$  [4]  $\text{CH}_3\text{OCH}_3$  and  $\text{CH}_3\text{CHO}$
- Q.20** Reduction of methyl isocyanide gives :- **[MP PMT-2002]**  
 [1] Ethyl amine [2] Methyl amine [3] Dimethylamine [4] Trimethyl amine
- Q.21** In the reaction,  
 $\text{CH}_3\text{NH}_2 + 3\text{CHCl}_3 + 3\text{KOH} \rightarrow \text{X} + 3\text{KCl} + 3\text{H}_2\text{O}$  X is :- **[MPMT-2002]**  
 [1]  $\text{CH}_3\text{NC}$  [2]  $\text{CH}_3\text{CH}_2\text{NC}$  [3]  $\text{CH}_3\text{COOH}$  [4]  $\text{CH}_3\text{CH}_2\text{COOH}$
- Q.22** Which of the following compound on treatment with  $\text{NaNO}_2$  and  $\text{HCl}$  gives alcohol and  $\text{N}_2$  gas :- **[RPMT-2003]**  
 [1] Benzene [2]  $\text{C}_2\text{H}_5\text{Cl}$  [3]  $\text{CH}_3\text{CH}_2\text{NH}_2$  [4]  $\text{C}_2\text{H}_5\text{NO}_2$
- Q.23** What is the product formed during reduction of nitro benzene in presence of neutral medium by  $\text{Al-Hg}$  :- **[RPMT-2003]**  
 [1] Aniline [2] Phenyl hydroxyl amine  
 [3] Nitrosobenzene [4] Hydroxy benzene
- Q.24** Ethyl amine react With  $\text{CHCl}_3$  In presence of  $\text{NaOH}$  to gives offensive smell. The compound obtained is :- **[RPMT-2003]**  
 [1]  $\text{C}_2\text{H}_5\text{Cl}$  [2]  $\text{C}_2\text{H}_5\text{CN}$  [3]  $\text{C}_2\text{H}_5\text{NC}$  [4]  $\text{CH}_3\text{-CH=NH}$
- Q.25** Gabriel phthalimide synthesis is used in the preparation of : **[CPMT -1982]**  
 [1] Triethylamine [2] Diethylamine [3] Ethylamine [4] Ammonia
- Q.26** Methyl amine can be prepared by : **CPMT -1984]**  
 [1] Wurtz Reaction [2] Friedal craft's Reaction  
 [3] Hofmann's bromamide reaction [4] Clemmesen's reaction
- Q.27** Nitro paraffins on Reduction gives: **[CPMT -1984]**  
 [1] Amides [2] alkyl amines [3] ammonium salts [4] acetanilides
- Q.28** Primary amines are identified by : **[CPMT -1985]**  
 [1] Hofman's Reaction [2] Carbylamine Reaction  
 [3] Friedal's craft's Reaction [4] Biuret Reaction
- Q.29** The compound which on reaction with aqueous nitrous acid at low temprature produces an oily nitrosoamine is **[IIT 1981]**  
 [1] Methylamine [2] Ethylamine [3] Triethylamine [4] Diethylamine
- Q.30** Which statement is incorrect: **[CPMT,1991]**  
 [1]  $-\text{NH}_2$  group is present in both ethyl amine & aniline  
 [2] Both ethylamine and aniline are soluble in  $\text{HCl}$   
 [3] Ethylamine and aniline give unpleasant smell with  $\text{CHCl}_3$  and  $\text{KOH}$   
 [4] Both ethylamine and aniline give hydroxy compound with  $\text{HNO}_2$

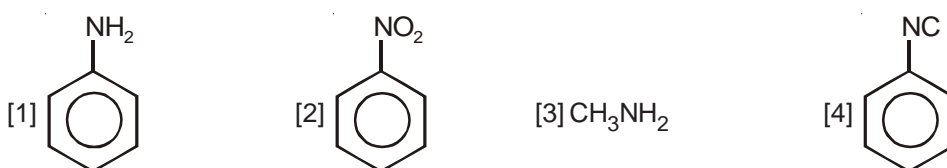
- Q.31**  $C_3H_9N$  does not represent: **[BHU, 1992]**  
 [1] 1° Amine                      [2] 2° Amine                      [3] 3° Amine                      [4] Quat. Salt
- Q.32** Aliphatic primary amines with nitrous acid gives: **[CBSE, 1994]**  
 [1] Alkyl nitrite                      [2] Secondary amine [3] Alcohol                      [4] Nitroalkane
- Q.33** Increasing order of basic character is : **[IIT Sreening, 1994]**  
 [1]  $NH_3 < C_6H_5NH_2 < (C_2H_5)_2NH < C_2H_5NH_2 < (C_2H_5)_3N$   
 [2]  $C_6H_5NH_2 < NH_3 < (C_2H_5)_3N < (C_2H_5)_2NH < C_2H_5NH_2$   
 [3]  $C_6H_5NH_2 < (C_2H_5)_3N < NH_3 < C_2H_5NH_2 < (C_2H_5)_2NH$   
 [4] None of these
- Q.34** Which one of the following compounds on treatment with methyl magnesium iodide gives primary amine: **[RAS Pre, 1996]**  
 [1] Ammonia                      [2] Chloro- amine                      [3] Hydrazine                      [4] Hydroxylamine
- Q.35** Who prepared the first organic compound in the laboratory? **[RAS Pre, 1996]**  
 [1] Berzelius                      [2] Kekule                      [3] Lavoiser                      [4] Wholer
- Q.36** Match list I with list II and select the correct answer using the code given below :
- | List-I                 | List-II                    |  |  |  |
|------------------------|----------------------------|--|--|--|
| [Reagent]              | [Used as test reagent for] |  |  |  |
| [A] Ammonical $AgNO_3$ | [a] Primary amine          |  |  |  |
| [B] $HIO_4$            | [b] Aldehyde               |  |  |  |
| [C] Alkaline $KMnO_4$  | [c] Vicinal OH groups      |  |  |  |
| [D] $CHCl_3$ and NaOH  | [d] Double bond            |  |  |  |
- Codes:
- |     | A | B | C | D |
|-----|---|---|---|---|
| [1] | b | c | a | d |
| [2] | d | b | a | c |
| [3] | b | c | d | a |
| [4] | d | c | b | a |
- Q.37** Triamino benzene is a :- **[BHU, 1996]**  
 [1] 2° Amine                      [2] 3° Amine                      [3] 1° Amine                      [4] Quaternary salt
- Q.38** Molecular weight of urea is 60. A solution of urea containing 6 gm urea in one litre is a **[BHU, 1996]**  
 [1] 1 Molar                      [2] 1.5 Molar                      [3] 0.1 Molar                      [4] 0.01 Molar
- Q.39** Carbylamine reaction is given by : **[BHU, 1996]**  
 [1] 1° Amine                      [2] 2° Amine                      [3] 3° Amine                      [4] Quaternary Amine
- Q.40** Artificial oil of bitter almonds or oil of Mirbane is the name given to : **[CPMT-91]**  
 [1] Chlorobenzene                      [2] Benzaldehyde                      [3] Aniline                      [4] Nitrobenzene
- Q.41** The compound is most reactive towards electrophilic substitution is : **[IIT-84]**  
 [1] Toluene                      [2] Benzene                      [3] Nitrobenzene                      [4] Benzoic acid
- Q.42** Which of the following compounds would have slower rate of electrophilic bromination than benzene - **[CBSE-94]**



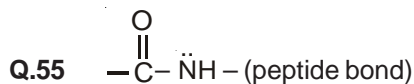
- Q.43** Heating sodium benzoate with sodalime gives  
 [1] Benzoic Acid [2] Calcium benzoate  
 [3] Phenol [4] Benzene
- Q.44** The 'IUPAC' name of the compound  $\text{CH}_3\text{CH}_2\text{CH}_2\text{-NO}_2$  is : -  
 [1] Nitromethane [2] 2-Nitropropane [3] 1-nitropropane [4] Propyl amine
- Q.45** In reduction of nitrobenzene, acidic -medium can't be provided by - **[CBSE, PMT-90]**  
 [1]  $\text{Zn}+\text{HCl}$  [2]  $\text{SnCl}_2 + \text{HCl}$  [3]  $\text{NH}_4\text{Cl} + \text{Zn}$  [4]  $\text{Fe} + \text{H}_2\text{O} + \text{HCl}$
- Q.46** The products of the reaction between  $\text{C}_6\text{H}_5\text{NH}_2$ ,  $\text{CHCl}_3$  and  $\text{KOH}$  are :- **[CPMT-81, 91]**  
 [1]  $\text{C}_6\text{H}_5\text{Cl} + \text{NH}_4\text{Cl} + \text{KCl}$  [2]  $\text{C}_6\text{H}_5\text{CN} + \text{KCl}$   
 [3]  $\text{C}_6\text{H}_5\text{NC} + \text{KCl}$  [4]  $\text{C}_6\text{H}_5\text{OH} + \text{NH}_4\text{Cl} + \text{H}_2\text{O}$
- Q.47** Picric acid is a yellow coloured compound. Its chemical name is : **[CPMT-81, 92]**  
 [1] m - Nitrobenzoic acid [2] 2, 4, 6 - trinitro phenol  
 [3] Trinitro toluene [4] Trinitro aniline
- Q.48** Aniline on heating with fuming sulphuric acid gives :- **[CPMT-88]**  
 [1] Aniline sulphate [2] Sulphanlic acid  
 [3] Aniline 2, 4 - disulphonic acid [4] Nitrobenzene
- Q.49** Benzene diazonium chloride on hydrolysis gives : **[CPMT-89]**  
 [1] Benzene [2] Benzyl alcohol [3] Phenol [4] Chlorobenzene
- Q.50** Examine the following two structure for the anilinium ion and choose the correct statement from the one gives below:- **[IIT-93]**



- [1] [II] is not an acceptable canonical structure because carbonium ions are less stable than amonium ion  
 [2] [II] is not an accepted canonical structure because it is non aromatic  
 [3] [II] is not an acceptable canonical structure because the nitrogen has 10 valence electron  
 [4] [II] is an acceptable canonical structure
- Q.51** In the reaction:-  $\text{C}_6\text{H}_5\text{NH}_2 + \text{CHCl}_3 + 3\text{NaOH} \rightarrow \text{A} + 3\text{B} + \text{C}$  The product 'A' is **[BHU, CETPb-94]**  
 [1] Phenyl isocyanide [2] Phenyl cyanide [3] Ethyldinechloride [4]  $\text{HCl}$  or  $\text{H}_2\text{O}$
- Q.52** Which of the following compounds gives p-cresol with p-methyl diazonium chloride **[CPMT -99]**  
 [1]  $\text{H}_2\text{O}$  [2]  $\text{H}_3\text{PO}_2$  [3]  $\text{HCOOH}$  [4]  $\text{C}_6\text{H}_5\text{OH}$
- Q.53** Which of the following reaction gives isocyanide : **[CPMT -2000]**  
 [1] Rimer Tieman reaction [2] Carbyl amine reaction  
 [3] Hoffmann bromamide reaction [4] None of the above.
- Q.54**  $\text{A} \xrightarrow{\text{Reduction}} \text{B} \xrightarrow{\text{CHCl}_3 / \text{KOH}} \text{C} \xrightarrow{\text{reduction}} \text{N-methyl aniline}$  than A is - **[CPMT -2001]**







[CPMT -2001]

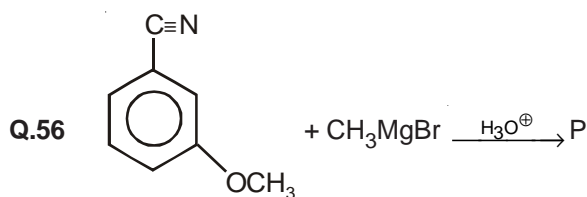
which statement is incorrect about peptide bond –

[1] C–N bond length in proteins is longer than usual bond length of N–bond

[2] Spectroscopic analysis show planar structure of  $\text{—}\overset{\text{O}}{\parallel}{\text{C}}\text{—}\text{NH—}$  group

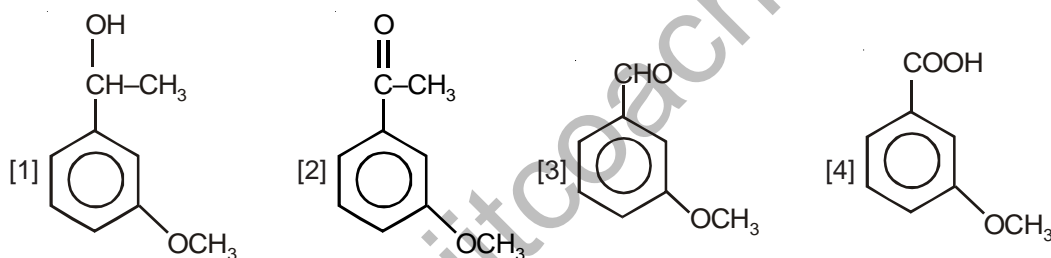
[3] C–N bond length in proteins is smaller than usual bond length of C–N bond

[4] None of above



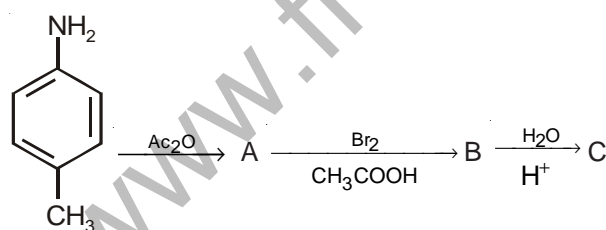
[CPMT -2002]

Product 'P' in the above reaction is

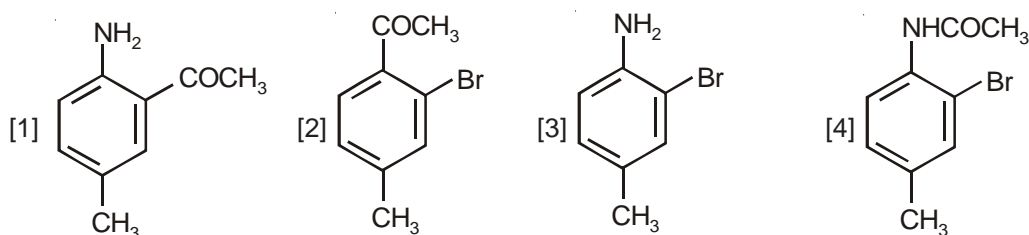


Q.57 The final product C, obtained in this reaction :

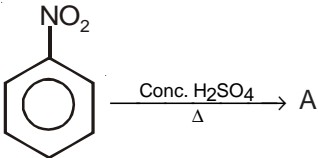
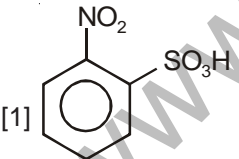
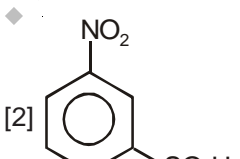
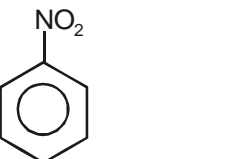
[CPMT -2003]



would be –



- Q.58** Reaction  $\text{CH}_3\text{CONH}_2 \xrightarrow{\text{NaOBr}}$  gives **[CPMT 1983, 93, 97]**  
 [1]  $\text{CH}_3\text{Br}$                       [2]  $\text{CH}_4$                       [3]  $\text{CH}_3\text{COBr}$                       [4]  $\text{CH}_3\text{NH}_2$
- Q.59** Aniline when treated with  $\text{HNO}_2$  and  $\text{HCl}$  at  $0^\circ\text{C}$  gives **[CPMT 1982,89, RPMT 2000]**  
 [1] Phenol                      [2] Nitrobenzene                      [3] A diazo compound                      [4] None of the above
- Q.60** Nitrosobenzene can be isolated from nitrobenzene under – **[Delhi PMT 1982]**  
 [1] Metal and acid                      [2] Zn dust and  $\text{NH}_4\text{Cl}$   
 [3] Alkaline sodium arsenite                      [4] Cannot be isolated
- Q.61** Methyl amine reacts with  $\text{HNO}_2$  giving **[RPMT 1997]**  
 [1]  $\text{CH}_3\text{O}-\text{N}=\text{O}$                       [2]  $\text{CH}_3-\text{O}-\text{CH}_3$                       [3]  $\text{CH}_3\text{OH}$                       [4] None of these
- Q.62** Aniline on treatment with conc.  $\text{HNO}_3$  + Conc.  $\text{H}_2\text{SO}_4$  mixture yields **[AIIMS 1992]**  
 [1] o- and p- nitroanilines [2] m-nitroanilines                      [3] A block tarry matter                      [4] No reaction
- Q.63** In reaction  $\text{CH}_3\text{CN} + 2\text{H} \xrightarrow[\text{Ether}]{\text{HCl}} \text{X} \xrightarrow{\text{Boiling H}_2\text{O}} \text{Y}$ ; the term Y is **[CBSE 1999]**  
 [1] Acetone                      [2] Ethylamine                      [3] Acetaldehyde                      [4] Dimethylamine
- Q.64** Phenyl isocanides are prepared from which of the following reactions **[CBSE 1999]**  
 [1] Rosenmund's reaction                      [2] Carbylamine reaction  
 [3] Reimer-Tiemann reaction                      [4] Wurtz reaction
- Q.65** In the reduction of nitrobenzene, which of the following is the intermediate **[CPMT 1999]**  
 [1]  $\text{C}_6\text{H}_5\text{N}=\text{O}$                       [2]  $\text{C}_6\text{H}_5\text{NH}-\text{NH}-\text{C}_6\text{H}_5$   
 [3]  $\text{C}_6\text{H}_5-\text{N}=\text{N}-\text{C}_6\text{H}_5$                       [4]  $\text{C}_6\text{H}_5-\text{N}=\overset{\text{O}}{\underset{\uparrow}{\text{N}}}-\text{C}_6\text{H}_5$
- Q.66** Which of the following has the minimum heat of dissociation **[Roorkee 1998]**  
 [1]  $(\text{CH}_3)_3\text{N} \rightarrow \text{BF}_3$                       [2]  $(\text{CH}_3)_3\text{N} \rightarrow \text{B}(\text{CH}_3)\text{F}_2$   
 [3]  $(\text{CH}_3)_3\text{N} \rightarrow \text{B}(\text{CH}_3)_2\text{F}$                       [4]  $(\text{CH}_3)_3\text{N} \rightarrow \text{B}(\text{CH}_3)_3$
- Q.67** Assertion [1] : Amines are basic in nature **[AIIMS 1999]**  
 Reason (R) : There is the presenece of the lone pair of electron on nitrogen.  
 [1] Both A and R are true and R is a correct explanation of A  
 [2] Both A and R are true but R is not a correct explanation of A  
 [3] A is true but R is false  
 [4] Both A and R are false
- Q.68** Assertion [1] : Lower aldehydes and ketnoes are soluble in water but the solubility decreases as the molecular mass increases **[AIIMS 1999]**  
 Reason (R) : Distinction between aldehydes and ketones can be made by Tollen's test.  
 [1] Both A and R are true and R is a correct explanation of A  
 [2] Both A and R are true but R is not a correct explanation of A  
 [3] A is true but R is false  
 [4] Both A and R are false
- Q.69**  $\text{CH}_2=\text{CH}-\text{CH}_2-\text{NH}-\text{CH}_3$  is a **[RPET 2000]**  
 [1] Secondary amine                      [2] Primary amine                      [3] Tertiary amine                      [4] None of these

- Q.70**  $\text{RCOCl} + 2\text{Me}_2\text{NH} \rightarrow \text{A} + \text{Me}_2\text{N}^+\text{H}_2\text{Cl}^-$  Here A is [RPET 2002]
- [1]  $\text{RCON} \begin{matrix} \text{Me} \\ \text{Me} \end{matrix}$       [2]  $\text{RCONH}_2$       [3]  $\text{RCONHMe}$       [4]  $(\text{RCO})_2\text{NH}$
- Q.71** Decreasing order of basicity is [RPET 2000]
- [a]  $\text{CH}_3\text{CONH}_2$       [b]  $\text{CH}_3\text{CH}_2\text{NH}_2$       [c]  $\text{Ph}-\text{CH}_2\text{CONH}_2$
- [1]  $a > b > c$       [2]  $b > a > c$       [3]  $c > b > a$       [4] None of these
- Q.72** Which of the following reaction give  $\text{RCONH}_2$  [Roorkee 2000]
- [1]  $\text{R}-\text{C} \equiv \text{N} + \text{H}_2\text{O} \xrightarrow{\text{HCl}}$       [2]  $\text{RCOONH}_4 \xrightarrow{\text{heat}}$
- [3]  $\text{R}-\text{COCl} + \text{NH}_3 \longrightarrow$       [4]  $(\text{RCO})_2\text{O} + \text{NH}_3 \longrightarrow$
- Q.73** Among the following the strongest base is [UPSEAT 2000, IIT 2000]
- [1]  $\text{C}_6\text{H}_5\text{NH}_2$       [2]  $p\text{-NO}_2\text{C}_6\text{H}_4\text{NH}_2$       [3]  $m\text{-NO}_2\text{-C}_6\text{H}_4\text{NH}_2$       [4]  $\text{C}_6\text{H}_5\text{CH}_2\text{NH}_2$
- Q.74** In this reaction  $\text{C}_6\text{H}_5\text{NH}_2 + \text{HCl} + \text{NaNO}_2 \rightarrow \text{X}$ . Product X is [Rajasthan 20002, AFMC 2002]
- [1] Aniline hydrochloride      [2] Nitro aniline
- [3] Benzenediazonium chloride      [4] None of these
- Q.75** In the reaction  $\text{C}_6\text{H}_5\text{CHO} + \text{C}_6\text{H}_5\text{NH}_2 \rightarrow \text{C}_6\text{H}_5\text{N} = \text{HCC}_6\text{H}_5 + \text{H}_2\text{O}$ , the compound  $\text{C}_6\text{H}_5\text{N} = \text{HC}_6\text{H}_5$  is known is [RPMT 2002; AIIMS 2002]
- [1] Aldol      [2] Schiff's reagent      [3] Schiff's base      [4] Benedict reagent
- Q.76**  $\text{CH}_3\text{NO}_2 \xrightarrow{\text{Sn}+\text{HCl}} \text{CH}_3\text{X}$ , then 'X' contain [CPMT 2003]
- [1]  $-\text{NH}_2$       [2]  $-\text{COOH}$       [3]  $-\text{CHO}$       [4]  $(\text{CH}_3\text{CO})_2\text{O}$
- Q.77**  [RPMT 2003]
- Product 'A' in above reaction is
- [1]       [2]       [3]       [4] None of these
- Q.78** The correct order of reactivity towards the electrophilic substitution of the compounds aniline (I) benzene (II) and nitrobenzene (III) is [CBSE 2003]
- [1]  $\text{I} > \text{II} > \text{III}$       [2]  $\text{III} > \text{II} > \text{I}$       [3]  $\text{II} > \text{III} > \text{I}$       [4]  $\text{I} < \text{II} > \text{III}$
- Q.79** The correct order of increasing basic nature for the bases  $\text{NH}_3$ ,  $\text{CH}_3\text{NH}_2$  and  $(\text{CH}_3)_2\text{NH}$  is [AIEEE 2003]
- [1]  $\text{CH}_3\text{NH}_2 < \text{NH}_3 < (\text{CH}_3)_2\text{NH}$       [2]  $(\text{CH}_3)_2\text{NH} < \text{NH}_3 < \text{CH}_3\text{NH}_2$
- [3]  $\text{NH}_3 < \text{CH}_3\text{NH}_2 < (\text{CH}_3)_2\text{NH}$       [4]  $\text{CH}_3\text{NH}_2 < (\text{CH}_3)_2\text{NH} < \text{NH}_3$
- Q.80** Nitrobenzene gives N-phenylhydroxylamine by [AIIMS 2003]
- [1]  $\text{Sn}/\text{HCl}$       [2]  $\text{H}_2/\text{Pd}-\text{C}$       [3]  $\text{Zn}/\text{NaOH}$       [4]  $\text{Zn}/\text{NH}_4\text{Cl}$

