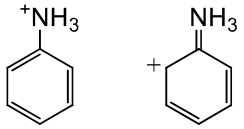
GPLUS EDUCATION

Date :
Time : **CHEMISTRY**
Marks :

AMINES

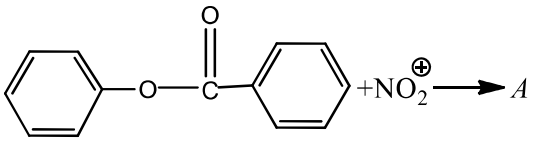
Single Correct Answer Type

1. During diazotization of benzenamine with sodium nitrite and hydrochloric acid, the excess of hydrochloric acid is used primarily to
   a) Check the hydrolysis of $\phi - OH$ b) Ensure a stoichiometric amount of nitrous acid
   c) Check the concentration of free aniline d) Neutralize any base formed during reaction
2. Hofmann's bromamide reaction is to convert
   a) Acid to alcohol b) Alcohol to acid c) Amide to amine d) Amine to amide
3. Examine the following two structures for the anilinium ion and choose the correct statement from the ones given below

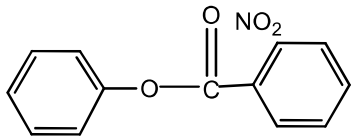


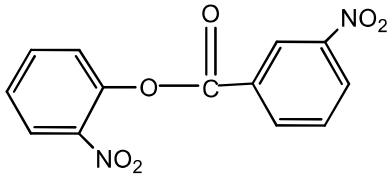
(I) (II)

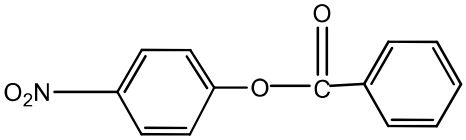
   a) II is not acceptable as canonical structure because carbonium ions are less stable than ammonium ions
   b) II is not an acceptable canonical structure because it is non-aromatic
   c) II is not an acceptable canonical structure because in it N has 10 valence electrons
   d) II is an acceptable as canonical structure
4. Choose the amide which on reduction with $LiAlH_4$ yields a secondary amine
   a) Ethanamide b) N-methylethanamide
   c) N, N-dimethylethanamide d) Phenylmethanamide
5. When methyl cyanide is hydrolysed in presence of alkali, the product is:
   a) Acetamide b) Methane c) $CO_2 + H_2O$ d) Acetic acid
6. In the following reactions, reactants A, B and C are:
   $Cl_2H_5NH_2 + A \longrightarrow C_2H_5N = CH - C_6H_5 + H_2O$
   $\text{Urea} + B \longrightarrow H_2N - NHCONH_2 + NH_3$
   $CH_2H_5NH_2 + C \longrightarrow C_2H_5Cl + H_2O + N_2$
   a) $CH_3CHO, NH_2 - NH_2$ and PCl_5 b) $C_6H_5CHO, NH_2 - NH_2$ and $SOCl_2$
   c) $C_6H_5CHO, NH_2 - NH_2$ and $NOCl$ d) $CH_3CHO, NH_2 - NH_2$ and PCl_3
7. Toluene is nitrated and the resulting product is reduced with tin and hydrochloric acid. The product so obtained is diazotised and then heated with cuprous bromide. The reaction mixture so formed contains.
   a) Mixture of *o*-and *p*-bromotoluenes b) Mixture of *o*-and *p*-dibromobenzenes
   c) Mixture of *o*-and *p*-bromoanilines d) Mixture of *o*-and *m*-bromotoluenes
8. $>C=O$ compounds reacts with NH_3 or amines followed by H_2/Ni. The reaction is called
   a) Mendius reaction b) Hofmann bromamide
   c) Reductive amination d) Gabriel's phthalimide
9. A compound which on reaction with aqueous nitrous acid gives an oily nitrosoamine is:
   a) Methylamine b) Ethylamine c) Diethylamine d) Triethylamine
10.

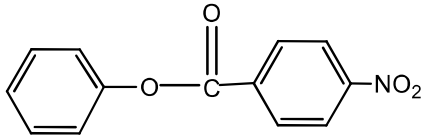


The product *A* is

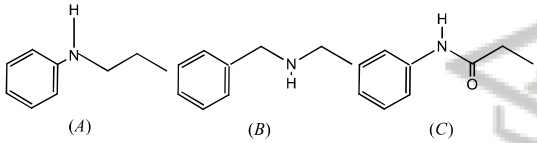
a) 

b) 

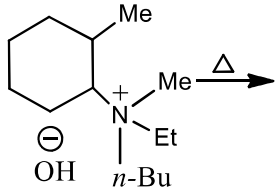
c) 

d) 

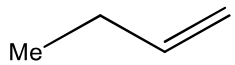
11. The active species produced in Hofmann's bromamide reaction is:
    a) Br^-
    b) Br_2
    c) OBr^-
    d) OBr_2
12. $C_5H_{13}N$ reacts with HNO_2 to give an optically active alcohol. The compound is
    a) Pentan-1-amine
    b) Pentan-2-amine
    c) N, N-dimethylpropan-2-amine
    d) N-methylbutan-2-amine
13. Reduction of alkyl nitriles, produces
    a) Secondary amine b) Primary amine c) Tertiary amine d) amide
14. Which one of the following compound is most basic?



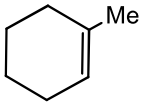
(*A*) (*B*) (*C*)

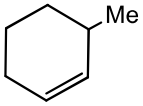
    a) *(A)* b) *(B)* c) *(C)* d) All are equally basic
15. Alkyl halide (*RX*) on treatment with KCN followed by reduction leads to formation of:
    a) RNH_2 b) RCH_2NH_2 c) $RH + NH_3$ d) $RCH_3 + N_2$
16. A gaseous carbon compound is soluable in dilute HCl. The solution on treating with $NaNO_2$ gives off nitrogen leaving behind a solution which smells of wood spirit. The carbon compound is
    a) HCHO b) CO c) $C_2H_5NH_2$ d) CH_3NH_2
17. Benzaldehyde condenses with N, N-diamethylaniline in presence of anhydrous $ZnCl_2$ to give
    a) Azo dye b) Malachite green c) Michler's ketone d) Buffer yellow
18. Which of the following statements are correct?
    a) Aniline is a stronger base ethyl amine
    b) Aniline is a stronger base than *p*-methoxyaniline
    c) Aniline must be acetylated before nitration with an acid mixture
    d) Aniline is soluble in an ammonium hydroxide solution
19. $CHCl_3$ and KOH on heating with a compound from a bad smelling product, compound is
    a) C_2H_5CN b) C_2H_5NC c) C_2H_5OH d) $C_2H_5NH_2$
20. On heating urea, a gas evolves along with formation of biuret. Identify the gas.
    a) CO b) NH_3 c) CO_2 d) H_2
21. 

The alkene formed as a major product in the above elimination reaction is

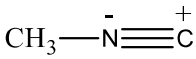
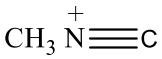
a) 

b) $CH_2 = CH_2$

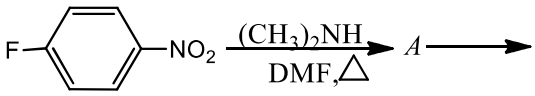
c) 

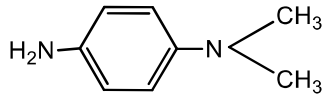
d) 

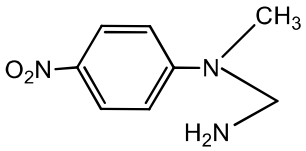
22. $CH_3NH_2 + CHCl_3 + KOH \rightarrow$nitrogen containing compound $+KCl + H_2O$. Nitrogen containing compound is

a) $CH_3 - C \equiv N$ b) $CH_3 - NH - CH_3$ c)  d) 

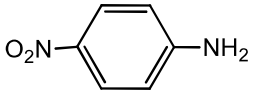
23. A secondary amine is:
    a) A compound with two $—NH_2$ groups
    b) A compound with 2 carbon atoms and a $—NH_2$ group
    c) A compound with a $—NH_2$group on the carbon atom in number 2 position
    d) A compound in which 2 of the hydrogens of NH_3 have been replaced by alkyl or aryl groups

24. 

a) 

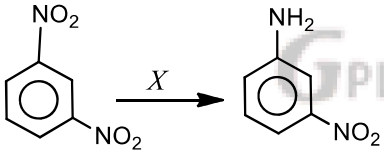
b) 

c) 

d) 

25. The name urea given by:
    a) Wöhler b) Berzelius c) Roulle d) Lemery

26. In the reaction



$X$is
    a) SiC b) H_2SO_4 c) $KMnO_4$ d) Fe/HCl

27. Which of the following enzymes can hydrolyse urea into CO_2 and NH_3?
    a) Amylase b) Urease c) Lipase d) Zymase

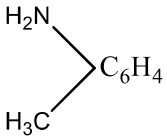
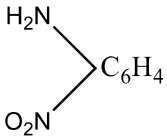
28. $C_6H_5NH_2 \xrightarrow[180°C]{H_2SO_4} H_2NC_6H_4(SO_3H)$
    $(para)$
    The true statement about the product is
    a) It does not exist as Zwitter ion
    b) $-NH_2$displays a powerful basic character
    c) It does not act as inner salt
    d) $-SO_3$ dimminishes the basic character of $-NH_2$

29. Aniline on treatment with $NaNO_2$ in HCl at 0°C followed by treatment with alkaline β −naphthol gives
    a) A violet solution b) A red solution
    c) A green solution d) A blue precipitate

30. Which of the test is used for detection of secondary amines ?
    a) Liebermann's nitroso test b) Lucas test
    c) Tollen's test d) Carbylamine reaction

31. Gas evolved during the reaction of sodium metal on ethyl amine is:
    a) N_2 b) C_2H_2 c) H_2 d) CO_2

32. Which will not go for diazotization?

a) $C_6H_5NH_2$ b) $C_6H_5CH_2NH_2$ c)  d) 

33. Aniline is prepared in presence of Fe/HCI from
a) Benzene b) Nitrobenzene c) Dinitrobenzene d) None of these

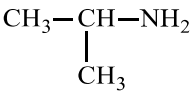
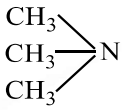
34. Amines have:
a) Garlic odour b) Fishy odour c) jasmine odour d) Bitter almonds odour

35. $CH_3CH_2NH_2$ contains a basic NH_2 group, but CH_3CONH_2 does not, because:
a) Acetamide is amphoteric in character
b) In $CH_3CH_2NH_2$ the electron pair on N-atom is delocalised by resonance
c) In $CH_3CH_2NH_2$ there is no resonance, while in acetamide the lone pair of electron on N-atom is delocalised and therefore less available for protonation
d) None of the above

36. High basicity of Me_2NH relative to Me_3N is attributed to
a) Effect f solvent b) Inductive effect of Me c) Shape of Me_2NH d) Shape of Me_3N

37. In the reaction $RCONH_2 + X \rightarrow RNH_2$, the regent X is
a) Soda lime b) PCl_5 c) NaOBr d) All of these

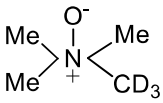
38. Which one of the following is most basic?
a) FCH_2NH_2 b) $FCH_2CH_2NH_2$ c) $C_6H_5NH_2$ d) $C_6H_5CH_2NH_2$

39. Which one of the following amines will not react with HNO_2 acid to give nitrogen?
a) CH_3NH_2 b) $CH_3CH_2NH_2$ c)  d) 

40. $(CH_3)_3N \xrightarrow[(ii)H_2O,\Delta]{(i)BrCN} [X]$, here $[X]$ is
a) CH_3NH_2 b) $(CH_3)_2NH$ c) $(CH_3)_3NO$ d) $(CH_3)_2NNO$

41. Hinsberg's method to separate amines is based on the use of:
a) Benzene sulphonyl chloride
b) Benzene sulphonic acid
c) Ethyl oxalate
d) Acetyl chloride

42. A primary amine hated with CS_2 in presence of excess of $HgCl_2$ gives isothiocyanate. The reaction is called:
a) Hofmann's bromamide reaction
b) Hofmann's mustard oil reaction
c) Perkin's condensation
d) Hofmann's elimination

43. Pyrolysis of  would give
a) Mixture of $CH_2 = CH - CD_3$ and $CH_3 - CH = CD_2$ b) $CH_3 - CH = CD_2$
c) $Me_2N^+ = C(CD_3)(CH_3)$ d) $CH_2 = CH - CD_3$

44. Ethyl isocyanide on hydrolysis in acidic medium generates
a) Ethylamine salt and methanoic acid b) Propanoic acid and ammonium salt
c) Ethanoic acid and ammonium salt d) Methylamine salt and ethanoic acid

45. When aniline is treated with sodium nitrite and hydrochloric acid at 0°C, it gives
a) Phenol and N_2 b) Diazonium salt
c) Hydrazo compound d) No reaction takes place

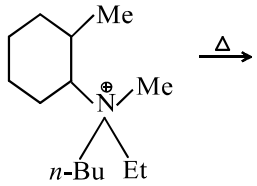
46. Which of the following is not correct?

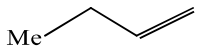
a) Ethylamine and aniline both have NH_2 group
b) Ethylamine and aniline both dissolve HCl
c) Ethylamine and aniline both react with $CHCl_3$ and KOH to form unpleasant smell
d) Ethylamine and aniline both react with $NaNO_2 + HCl$ to give hydroxyl compounds in cold

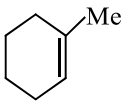
47. Amine is not formed in the reaction
(A) Hydrolysis of RCN
(B) Reduction of RCH = NOH
(C) Hydrolysis of RNC
(D) Hydrolysis of RCONH$_2$
The correct answer is
a) A, B, D b) A, D c) B, C d) A, B, C

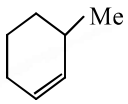
48. During coupling reaction of benzene diazonium chloride and aniline, the pH of reaction medium should be approximately
a) 1−2 b) 9−10 c) 4−5 d) 7−8

49. 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

50. 

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

b) $CH_2{=}CH_2$ c) 

d) 

51. Carbylamine reaction is given by aliphatic
a) Primary amine b) Secondary amine
c) Tertiary amine d) Quaternary ammonium salt

52. Nitrobenzene is reduced by Zn and alcoholic potash mixture to get
a) $C_6H_5 - NH_2$ b) $C_6H_5 - NH - NH - C_6H_5$
c) $C_6H_5 - N - N - C_6H_5$ d) $C_6H_5 - NH - CO - C_6H_5$

53. 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) $CH_3NH_2 > C_2H_5NH_2 > C_6H_5NH_2 > NH_3$

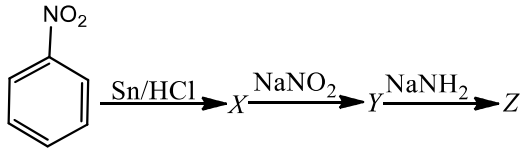
54. Which of the following is strongest base?
a) $C_6H_5NH_2$ b) $p - NO_2 - C_6H_4NH_2$ c) $m - NO_2 - C_6H_4NH_2$ d) $C_6H_5CH_2CH_2$

55. 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) $C_6H_5CH_2NC \xrightarrow{LiAlH_4}$

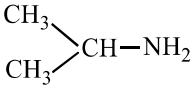
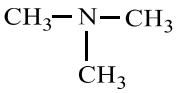
56. Urea when heated a white residue is formed. Its alkaline solution when treated with few drops of $CuSO_4$ solution gives:
a) Red colour b) Violet colour c) Green colour d) Yellow colour

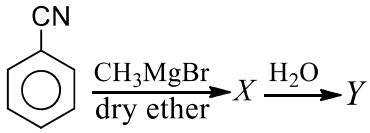
57. An organic compound '*A*' having molecular formula C_2H_3N on reduction gave another compound *B*, upon treatment with nitrous acid '*B*' gave ethyl alcohol. On warming with chloroform and alcoholic KOH, it formed an offensive smelling compound '*C*'. The compound '*C*' is
a) $CH_3CH_2NH_2$ b) $CH_3CH_2N \rightrightarrows C$ c) $CH_3C \equiv N$ d) $CH_3CH_2.OH$

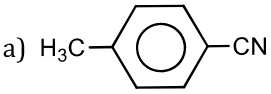
58. What is '*Z*'in the following reaction ?



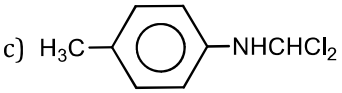
a) Benzoic acid b) Cyanobenzoic acid c) Benzamide d) Aniline

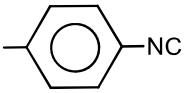
59. Amino group is *ortho/para*-directing for aromatic electrophilic substitution. On nitration of aniline, a good amount of *m*-nitroaniline is obtained. This is due to
    a) In nitration mixture, *ortho, para*-activity of NH_2 group is completely lost
    b) $-NH_2$ because $-NH_3^+$, which is m-directing
    c) $-NH_2$ becomes $-NH^+SO_4^-$, which is *m*-directing
    d) $-NH_2$ becomes $-NH^-NO_2^+$, which is *m*-directing
60. Carbonyl chloride reacts with ammonia to form:
    a) CO_2 b) NH_2CONH_2 c) CH_3COONH_4 d) CH_3CONH_2
61. The action of nitrous acid on a primary amine gives:
    a) Nitroalkane b) Alkyl nitrite c) Alcohol d) Secondary amine
62. The reduction of CH_3CN to $CH_3CH_2NH_2$ is called:
    a) Rosenmund's reduction
    b) Clemmensen's reduction
    c) Mendius reduction
    d) Hofmann's reduction
63. Aniline is reacted with Br_2 water and the resulting product is treated with an aqueous solution of sodium nitrite in the presence of diluteHCl. The compound so formed is converted into tetrafluoroborate which is subsequently heated dry. The end product is
    a) *p*-bromofluorobenzene b) *p*-bromoaniline
    c) 2, 4, 6- tribromofluoro benzene d) 1, 3, 5- tribromobenzene
64. The reaction,
    $RCOOH \xrightarrow{NaN_3/conc.H_2SO_4} RNH_2 + N_2 + CO_2$
    is known as
    a) Curtius reaction b) Lossen reaction c) Schmidt reaction d) Hofmann reaction
65. Which of the following compounds on treatment first with $NaNO_2$/HCI and then coupled with phenol produces *p*-hydroxyazobenzene ?
    a) Nitrobenzene b) Azobenzene c) Phenol d) Aniline
66. The structural formula of methyl amino methane is:
    a) $(CH_3)_2CHNH_2$ b) $(CH_3)_3N$ c) $(CH_3)_2NH$ d) CH_3NH_2
67. An organic compound (C_3H_9N) (*A*), when treated with nitrous acid, gave an alcohol and N_2 gas was evolved. (*A*) on warming with $CHCl_3$ and caustic potash gave (*C*) which on reduction gave isopropylmethylamine. Predict the structure of (*A*).
    a) 
    b) $CH_3CH_2-NH-CH_3$
    c) 
    d) $CH_3CH_2CH_2-NH_2$
68. Urea when heated slowly, product formed is:
    a) N_2
    b) CO_2
    c) biuret
    d) Ammonium carbamate

69. Which of the following statements is not correct?
    a) Primary amines show intermolecular hydrogen bonding
    b) Secondary amines show intermolecular hydrogen bonding
    c) Tertiary amines show intermolecular hydrogen bonding
    d) Amines have lower boiling points as compared to those of alcohols and carboxylic acids of comparable molar masses
70. Compare boiling point of isomeric alkyl amines.
    a) $1° > 2° > 3°$ b) $1° > 2° < 3°$ c) $1° < 2° < 3°$ d) $1° < 2° > 3°$
71. Hofmann's hypobromite reaction affords a method of:
    a) Preparing a tertiary amine
    b) Preparing a mixture of amines
    c) Stepping down a series
    d) Stepping up a series
72. A colourless, odourless and non-combustible gas is liberated when ethylamine reacts with:
    a) NaOH b) CH_3COCl c) $NaNO_2 + HCl$ d) H_2SO_4
73. Reaction of benzaldehyde with methylamine gives
    a) C_6H_5COOH b) $C_6H_5N = NCl$
    c) $C_6H_5 - CH = N - CH_3$ d) $C_6H_5NH_2$
74. 

    Identify *Y*
    a) Benzophenone b) Acetophenone c) Benzoic acid d) phenol
75. What is the proper sequence of reagent in the Hofmann's degradation reaction?
    a) Br_2, KOH, H_2O b) KOH, Br_2, H_2O c) H_2O, KOH, Br_2 d) KOH, H_2O, Br_2
76. The reaction of chloroform with alcoholic KOH and *p*-toluidine form
    a) 

    b) 

    c) 

    d) 

77. Ethyl isocyanide on hydrolysis in acidic medium generated
    a) Ethyl amine salt and methanoic acid b) Propanoic acid and ammonium salt
    c) Ethanoic acid and ammonium salt d) Methyl amine salt and ethanoic acid
78. When methyl iodide is treated with ammonia, the product obtained is:
    a) Methylamine b) Dimethylamine c) Trimethylamine d) All of these
79. Aliphatic amines are soluble in water because:
    a) They are basic
    b) They are amino compounds
    c) They are lighter than water
    d) Of formation of hydrogen bonds with water
80. An organic amino compound reacts with aqueous nitrous acid at low temperature to produce an oily nitrosoamine. The compound is
    a) CH_3NH_2 b) $CH_3CH_2NH_2$ c) $CH_3CH_2NHCH_2CH_3$ d) $(CH_3CH_2)_3N$
81. Allyl isocyanide contains .....and.....bonds.
    a) $9\sigma, 3\pi$ b) $9\sigma, 9\pi$ c) $3\sigma, 4\pi$ d) $5\sigma, 7\pi$
82. Mendius method of preparation of amines consists of:
    a) Catalytic reduction of alkyl cyanides
    b) Reduction of amide with $LiAlH_4$

c) Reduction of nitroparaffin with Sn + HCl
d) Reduction of oximes with Na + C_2H_5OH

83. The compound having the molecular formula C_3H_9N represent :
a) Trimethylamine b) *n*-propylamine c) Isopropylamine d) All of these

84. From the following compounds which does not react with $C_6H_5SO_2Cl$?
a) $C_2H_5.NH_2$ b) $CH_3.NH_2$
c) $(CH_3)_2NH$ d) $(C_2H_5)_3N$

85. Identify *A* and *B* in the reaction given below.
Ethane nitrile $\xrightarrow[aq.H_2SO_4,\ +2H_2O,\ -NH_3]{\text{Hydrolysis}} A \xrightarrow[\text{Sodalime},\ \Delta,\ -CO_2]{\text{Decarboxylation}} B$
a) Acetic acid, methanol b) Acetone, methane
c) Ethanoic acid, ethane d) Ethanoic acid, methane

86. The compound formed when malonic ester reacts with urea is:
a) Cinnamic acid b) Butyric acid c) Barbituric acid d) Crotonic acid

87. Decreasing order of basicity of the three isomers of methoxyaniline is
a) $p\text{-}CH_3OC_6H_4NH_2 > o-CH_3OC_6H_4NH_2 > m-CH_3OC_6H_4NH_2$
b) $p\text{-}CH_3OC_6H_4NH_2 > m-CH_3OC_6H_4NH_2 > o-CH_3OC_6H_4NH_2$
c) $o\text{-}CH_3OC_6H_4NH_2 > p-CH_3OC_6H_4NH_2 > m-CH_3OC_6H_4NH_2$
d) $o\text{-}CH_3OC_6H_4NH_2 > m-CH_3OC_6H_4NH_2 > p-CH_3OC_6H_4NH_2$

88. Nitrogen of nitrobenzene at 125°C with mixed acids gives
a) *meta*-dinitrobenzene b) *ortho*-dinitrobenzene
c) *para*-dinitrobenzene d) 1, 3, 5-trinitrobenzene

89. The value of K_b is highest in case of:
a) *p*-methoxy aniline b) *p*-chloroaniline c) *p*-nitroaniline d) *p*-methylaniline

90. Benzene diazonium chloride on reaction with phenol in weakly basic medium gives
a) Diphenyl ether b) *p*-hydroxy azobenzene c) Chlorobenzene d) Benzene

91. $R-N\rightleftharpoons C+HgO \longrightarrow A+Hg_2O$; What is *A*?
a) RNH_2 b) $RCONH_2$ c) *R*—NCO d) *R*COOH

92. Amine oxide, when heated froms alkene. The reaction is known as
a) Curtius b) Cope elimination
c) Mannich reaction d) Hofmann elimination

93. Identify the product in the following sequence 3, 4, 5-tribromoaniline
$\xrightarrow[(ii)H_3PO_2]{(i)\text{Diazotization}}$?
a) 3, 4, 5-tribromobenzene b) 1, 2, 3-tribromobenzene
c) 2, 4, 6-tribromobenzene d) 3, 4, 5-tribromonitrobenzene

94. Identify the product *Z* in the following reaction scheme
$C_6H_5NH_2 \xrightarrow{Ac_2O} X \xrightarrow{Br_2/CCl_4} Y \xrightarrow{HOH} Z$
a) *p*-bromoaniline b) *p*-bromoacetophenone
c) *p*-bromoacetanilide d) *o*-bromoacetophenone

95. In the following reaction, $X \xrightarrow{\text{Bromination}} Y \xrightarrow[+HCl]{NaNO_2} Z \xrightarrow[C_2H_5OH]{\text{Boiling}}$ tribromo benzene. *X* is
a) Benzoic acid b) Salicylic acid c) Phenol d) Aniline

96. The compound, N-ethyl-N-methylpropanamine forms non- superimposable mirror image but does not show optical activity. This is due to
a) Absence of a chiral N-atom b) Presence of a chiral N- atom
c) Presence of lone pair on N-atom d) Rapid flipping of one from into another

97. Which of the following statement about primary amines is false?
a) Alkylamines are stronger base than arylamines

b) Alkylamines react with nitrous acid to produce alcohols
c) Arylamines react with nitrous acid to produce phenols
d) Alkylamines are stronger bases than ammonia.

98. How may primary amines are possible for the formula $C_4H_{11}N$?
a) 1 b) 2 c) 3 d) 4

99. What is decreasing order of basicity of *p*- , *s*- , *t* - ethyl amines and NH_3?
a) $NH_3 > C_2H_5NH_2 > (C_2H_5)_2NH > (C_2H_5)_3N$
b) $(C_2H_5)_3N > (C_2H_5)_2NH > C_2H_5NH_2 > NH_3$
c) $(C_2H_5)_2NH > C_2H_5NH_2 > NH_3 > (C_2H_5)_3N/'$
d) $(C_2H_5)_2NH > (C_2H_5)_3N > C_2H_5NH_2 > NH_3$

100. In the reaction

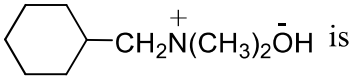
$$CH_3CN + 2H \xrightarrow[SnCl_2]{HCl} X \xrightarrow{\text{Boiling } H_2O} Y,$$

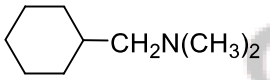
The term *Y* is,
a) Acetone b) Ethanamine c) Acetaldehyde d) Dimethyl amine

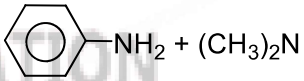
101. Which is not the property of ethanenitrile (CH_3CN)?
a) Undergoes acidic hydrolysis to give carboxylic acid
b) Undergoes alkaline hydrolysis to give salt of carboxylic acid
c) It tautomerises to give methyl isocyanide
d) It gives carbylamines reaction with chloroform

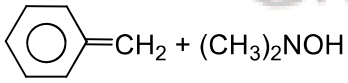
102. Acetoneoxime on catalytic hydrogenation gives:
a) 1-propanamine b) Isopropylamine c) Ethyl methyl amine d) CH4 and ethanamine

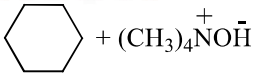
103. The product of Hofmann elimination of



a) 

b) 

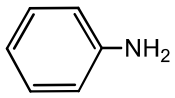
c) 

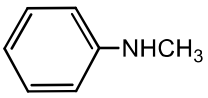
d) 

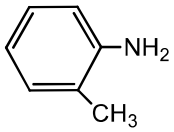
104. Hofmann's rearrangement during the conversion of an amide to amine involves..... rearrangemet.
a) Intermolecular b) Intramolecular. c) Both (a) and (b) d) None of these

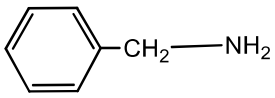
105. Aniline reacts with ... to yield ... as the final product.
a) Bromine, 2-bromoaniline b) Bromine, 2, 4, 6-tribromoaniline
c) Chloroform/KOH, phenyl cyanide d) Acetyl chloride, benzanilide

106. Which of the following is the strongest base?

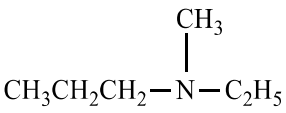
a) 

b) 

c) 

d) 

107. Which of the following can be used to distinguish acetamide and urea?
a) Fehling's solution b) Biuret test c) Hofmann's reaction d) NaOH solution

108. Which of the following amines is optically active?
a) CH_3NH_2
b) CH_3NHCH_3
c) 

d) Sec. butylamine

109. Which one of the following is not the correct reaction of aryl diazonium salts ?

a) $C_6H_5N_2^+Cl^- + Cu_2Cl_2 \rightarrow C_6H_5Cl$ b) $C_6H_5N_2^+Cl^- + HBF_4 \xrightarrow{Heat} C_6H_5F$

c) $C_6H_5N_2^+Cl^- + H_3PO_2 \rightarrow C_6H_5PO_4$ d) $C_6H_5N_2^+Cl^- + SnCl_2/HCl \rightarrow C_6H_5NHNH_2$

110. Hinsberg's reagent is

a) C_6H_5COCl b) CH_3COCl c) $C_6H_5CH_2Cl$ d) $C_6H_5SO_2Cl$

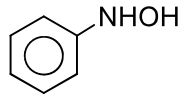
111. Which one of the following compound when heated with KOH and primary amines gives carbylamine test?

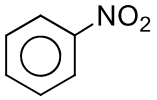
a) $CHCl_3$ b) CH_3Cl c) CCl_4 d) CH_3NC

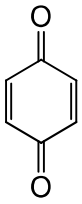
112. Ethyl amine on acetylation gives

a) N-ethyl acetamide b) Acetamide c) Methyl acetamide d) None of these

113. The oxidation of aniline with per acetic acid in the presence of acetic acid by refluxing gives

a) 

b) 

c) 

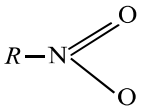
d) None of these

114. Aniline reacts with acetaldehyde to form

a) Schiff's base b) Carbylamine c) Immine d) None of these

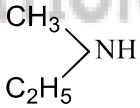
115. Aniline gives a precipitate with bromine. The colour of precipitate is

a) Red b) Black c) Blue d) White

116.  and $-R-O-N=O$ are....isomers.

a) Chain
b) Functional
c) Position
d) All of these

117. 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

a) $(CH_3)_3N$ b) $(CH_3)_2CH-NH_2$ c)  d) All of these

118. Which one does not liberate NH_3 when undergoes hydrolysis?

a) Acetanilide b) Acetonitrile c) Acetamide d) Phenyl isocyanide

119. *n*-butylamine (I), diethylamine (II) and N, N-dimethylethylamine (III) have the same molar mass. The increasing order of their boiling point is

a) III < II < I b) I < II < III c) II < III < I d) II < I < III

120. Correct order of basic nature of $CH_3NH_2(A), CH_3CN(B)$ and $CH_3N = CHCH_3(C)$ is

a) $A > B > C$ b) $B > C > A$ c) $A > C > B$ d) $C > A > B$

121. Nitroparaffins on reduction give:

a) Amides b) Alkylamines c) Ammonium salts d) Acetanilides

122. Which of the following is not characteristic of amines?

a) They smell like ammonia
b) They are inflammable in air
c) They show the property of hydrogen bonding
d) They are amphoteric in nature

123. On heating benzyl amine with chloroform and ethanolic KOH, product obtained is

a) Benzyl alcohol b) Benzaldehyde c) Benzonitrile d) Benzyl isocyanide

124. Benzyl amine reacts with nitrous acid to give

a) Azobenzene b) Benzene c) Benzyl alcohol d) Phenol

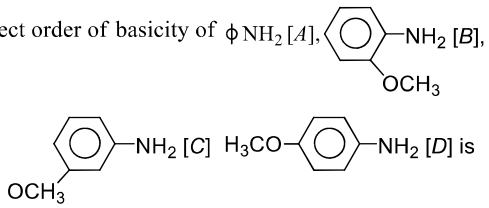
125. Which of the following statements is not correct?

a) Alkyl isocyasnides have bad odours while alkyl cyanides have pleasant odours
b) Alkyl cyanides are not as poisonous as KCN
c) Alkyl cyanides have lower boiling points than the corresponding alkyl isocyanides
d) Acetonitrile is soluble in water but methylcarbylamine is not

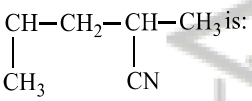
126. When $NaNO_2$ and dilute HCl were added to an amine at 0°C, a colourless gas was evoloved and an ionic compound is formed. The amine is:
a) An primary amine
b) An aromatic primary amine
c) Any amine
d) None of the above

127. Which of the following reactions is given by only primary amines?
a) Reaction with HONO
b) Reaction with chloroform and alcoholic KOH
c) Reaction with acetyl chloride
d) Reaction with Grignard reagent

128. In hypobromite reaction of amide, carbonyl carbon atom is lost as:
a) CO
b) CO_2
c) CO_3^{2-}
d) None of these

129. Correct order of basicity of 

a) $A > B > C > D$
b) $D > C > A > B$
c) $B > D > C > A$
d) $D > A > B > C$

130. The IUPAC name of  is:

a) 2-cyano-3-methyl hexane
b) 2-dimethyl-4-cyanopentane
c) 2,4-dimethyl pentane nitrile
d) 2-cyano-3-methyl hexane

131. Choose the incorrect statement.
a) Primary amines show intermolecular hydrogen bonds.
b) Tert-butylamine is primary amine.
c) Tertiary amines do not show intermolecular hydrogen bonds.
d) Isopropylamine is a secondary amine.

132. N_2 gas is liberated when $[HCl + NaNO_2]$ reacts with the following compounds
(A)$CH_3CH_2NH_2$ (B) Urea
(C)CH_3CONH_2 (D)$C_6H_5NH_2$
The answer is
a) A, B, C
b) B, C, D
c) A, C, D
d) A, B, D

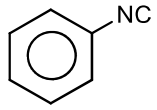
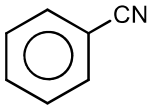
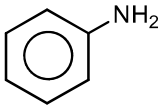
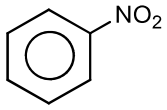
133. Urea on heating with ethanol gives:
a) Urethane
b) Urea alcohol
c) Ureides
d) None of these

134. Treatment of nitrobenzene with acetyl chloride in the presence of anhydrous $AlCl_3$ gives
a) 2-nitroacetophenone
b) 3-nitroacetophenone
c) 4-nitroacetophenone
d) None of these

135. The correct sequence of reactions to convert p-nitrophenol into quinol involves
a) Reduction, diazotization and hydrolysis
b) Hydrolysis, diazotization and reduction
c) Hydrolysis, reduction and diazotization
d) Diazotization, reduction and hydrolysis

136. The reduction of which of the following compound would yield secondary amine?
a) Alkyl nitrile
b) Carbylamine
c) Primary amine
d) Secondary nitro compound

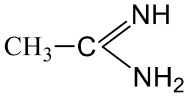
137. The compound with foul odour among the following is

a)  b)  c)  d) 

138. Reduction of nitrobenzene in the presence of Zn/NH_4Cl gives
   a) Azobenzene
   b) Hydrazobenzene
   c) N-phenyl hydroxylamine
   d) Aniline

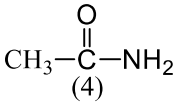
139. Name of method use to separate primary, secondary and tertiary amines is
   a) Hofmann method
   b) Lucas method
   c) Victor Meyer method
   d) Kolbe method

140. The correct order of basicities of the following compound is


(1)

$CH_3CH_2NH_2$
(2)

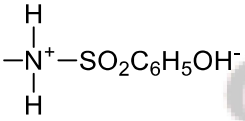
$(CH_3)_2NH$
(3)


(4)

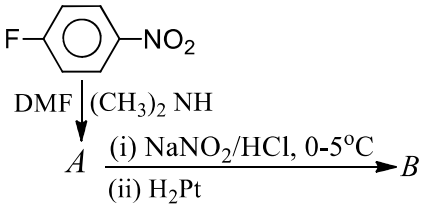
   a) 2>1>3>4
   b) 1>3>2>4
   c) 3>1>2>4
   d) 1>2>3>4

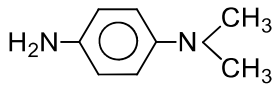
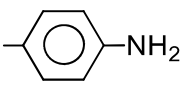
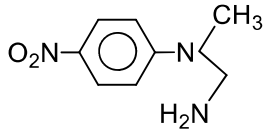
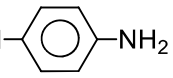
141. Dye test can be used to distinguish
   a) Ethyl amine and acetamide
   b) Ethyl amine and aniline
   c) Urea and acetamide
   d) Methyl amine and ethyl amine

142. In the reaction of *(S)* 2-phenylpropamide with $NaBr/H_2O$ to give 1-phenylethylamine
   a) There is retention of configuration
   b) There is inversion of configuration
   c) A mixture of two products is obtained
   d) There is no reaction

143. RNH_2 reacts with $C_6H_5SO_2Cl$ in aqueous KOH to give a clear solution. On acidification a precipitate is obtained which is due to the formation of
   a) 
   b) $R-N^-SO_2C_6H_5K^+$
   c) $C_6H_5SO_2NH_2$
   d) $R-NH-SO_2-C_6H_5$

144. The reaction,
   $CH_3CN + 4H \xrightarrow{Na/C_2H_5OH} CH_3CH_2NH_2$ is called:
   a) Hofmann's bromamide reaction
   b) Mendius reaction
   c) Sabatier reaction
   d) None of the above

145. 

In the above sequence *B* is
   a) 
   b) 
   c) 
   d) 

146. A compound *A* when reacted with PCl_5 and then with ammonia gave *B*. *B* when treated with bromine and

caustic potash produced C. C on treatment with $NaNO_2$ and HCl at 0°C and then boiling produced orthocresol. Compound A is:

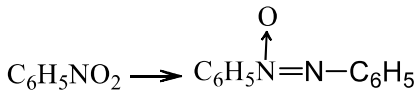
a) o-toluic acid b) o-chlorotoluene c) o-bromotoluene d) m-toluic acid

147. $C_2H_5NH_2 \xrightarrow{HNO_2} A \xrightarrow{PCl_3} B \xrightarrow{NH_3} C$.

Recognize the compound C from the following

a) Propanenitrile b) Methylamine c) Ethylamine d) Acetamide

148. The conversion



Can be brought about by reduction with

a) $Na_3AsO_3/NaOH$ b) Glucose/HCl c) Zn/NaOH d) $LiAlH_4$/ether

149. Benzoyl chloride does not react with:

a) Primary or secondary amines

b) Aliphatic compounds

c) Aromatic compounds

d) Carboxylic acids

150. Which compound will liberate CO_2 from $NaHCO_3$ solution?

a) CH_3CONH_2 b) CH_3NH_2 c) $(CH_3)_4N^+OH^-$ d) $CH_3N^+H_3CL^-$

151. $C_6H_5NH_2 \xrightarrow[HCl]{NaNO_2} X \xrightarrow{Cu_2(CN)_2} Y \xrightarrow{H_2O/H^+} Z$

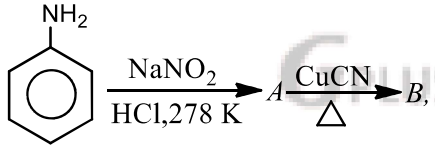
Z is identified as

a) $C_6H_5 - NH - CH_3$ b) $C_6H_5 - COOH$ c) $C_6H_5 - CH_2 - NH_2$ d) $C_6H_5 - CH_2COOH$

152. Ketones and 1° amines react to form:

a) Amides b) Oximes c) Urea d) Anils

153. In the chemical reactions,



Compounds A and B respectively are

a) Fluorobenzene and phenol

b) Benzene diazonium chloride and benzonitrile

c) Nitrobenzene and chlorobenzene

d) Phenol and bromobenzene

154. Dehydration of an amide gives:

a) Cyanide b) Amine c) Isocyanide d) Fatty acid

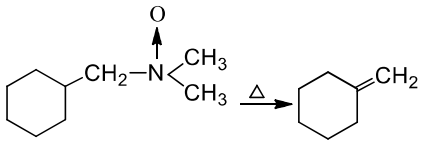
155. Given the following sequence of reactions,

$CH_3CH_2I \xrightarrow{NaCN} A \xrightarrow[\text{Partial hydrolysis}]{OH^-} B \xrightarrow{Br_2/NaOH} C$

The major product 'C' is

a) $CH_3CH_2NH_2$ b) $CH_3.CH_2C(=O)NHBr$ c) $CH_3.CH_2 - COONH_4$ d) $CH_3.CH_2C(=O)NBr_2$

156.



This reaction is called

a) Cope reaction b) Ritter reaction c) Schmidt reaction d) Gabriel reaction

157. Which one of the following compounds forms a quaternary salt on reacting with excess methyl iodide ?

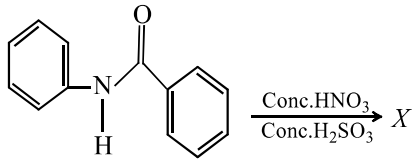
a) $C_2H_5OCH_3$ b) $(CH_3)_2CHOC_2H_5$ c) $C_6H_5NH_2$ d) $C_6H_5NO_2$

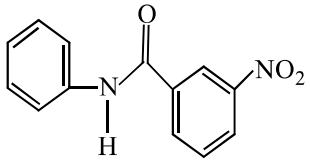
158. Which of the following reactions can produce aniline as main product?
a) $C_6H_5NO_2 + Zn/KOH$ b) $C_6H_5NO_2 + Zn/NH_4Cl$
c) $C_6H_5NO_2 + LiAlH_4$ d) $C_6H_5NO_2 + Zn/HCl$

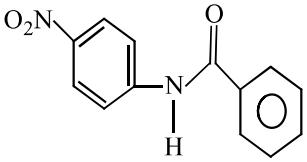
159. Reaction of aniline with benzaldehyde is
a) Substitution b) Addition c) Condensation d) Polymerisation

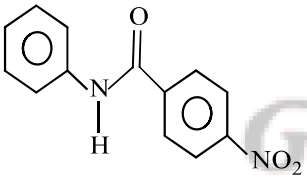
160. The product *D* in the following sequence of reactions is,
$CH_3COOH \xrightarrow{NH_3} A \xrightarrow{Heat} B \xrightarrow{P_2O_5} C \xrightarrow{Na+C_2H_5OH} D$:
a) Ester b) Amine c) Acid d) Alcohol

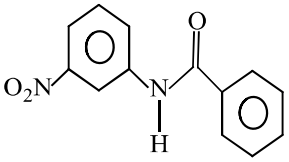
161. In the following reaction, the product *X* is:



a)


b)


c)


d)


162. Indicate the correct statement.
a) $C_2H_5N^+H_3OH^-$ is acidic
b) $C_2H_5NH_2$ is less basic than NH_3
c) $C_2H_5NH_2$ is a stronger base than NH_3
d) $C_2H_5NH_2$ forms salts with bases

163. The compound will react most readily with NaOH to form methanol is
a) $(CH_3)_4N^+I^-$ b) CH_3OCH_3 c) $(CH_3)_3S^+I^-$ d) $(CH_3)_3CI$

164. Increasing order of basicity of $CH_3CH_2CH_2NH_2$ $H_2C = CHCH_2NH_2$ and $HC \equiv CCH_2NH_2$ is
a) $CH_3CH_2CH_2NH_2 < HC \equiv CCH_2NH_2 < H_2C = CHCH_2NH_2$
b) $CH_3CH_2CH_2NH_2 < H_2C = CHCH_2NH_2 < CH \equiv CCH_2NH_2$
c) $HC \equiv CCH_2NH_2 < H_2C = CHCH_2NH_2 < CH_3CH_2CH_2NH_2$
d) $CH \equiv CCH_2NH_2 < CH_3CH_2CH_2NH_2 < H_2C = CHCH_2NH_2$

165. Reduction of aniline with acetyl chloride in presence of NaOH produce
a) Aniline hydrochloride b) Acetanilide c) *p*-choloroaniline d) A red dye

166. The molecular formula C_3H_9N cannot represent
a) 1°amine b) 2°amine c) 3°amine d) Quaternary salt

167. (A) $C_2H_5NH_2 \xrightarrow[(ii)AgNO_2]{(i)NOCl} [W]$

(B) $(CH_3)_2CHNH_2 \xrightarrow[(ii)AgNO_2]{(i)NOCl} [X]$

(C) $(CH_3)_3\ CNH_2 \xrightarrow[(ii)AgNO_2]{(i)NOCl} [Y]$

(D) $CH_3CH(NH_2)C_2H_5 \xrightarrow[(ii)AgNO_2]{(i)NOCl} [Z]$

Which product will not show tautomerism?

a) W b) X c) Y d) Z

168. Carcinogens are the products of the reaction between:

a) $R_2NH + HNO_2$ b) $R_3N + HNO_2$ c) $RNH_2 + HNO_2$ d) None of these

169. Acetonitriles on hydrolysis produce which of the following?

a) Amine b) Acid c) Amides d) Carbonyl compounds

170. Primary, secondary and tertiary nitroalkanes can be identified by the action of:

a) $HNO_2 + NaOH(aq.)$ b) $CHCl_3 + NaOH(aq.)$ c) $CHCl_3 + KOH(\text{alc.})$ d) None of these

171. Methyl cyanide gives on hydrolysis

a) Methyl amine b) Acetic acid c) Formic acid d) Ethyl amine

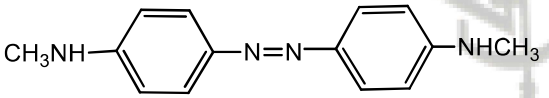
172. The hydrochlorides of amines form double salt with:

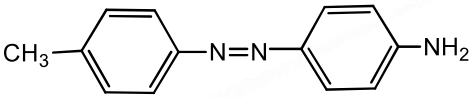
a) $PtCl_4$ b) $AuCl_3$ c) Both (a) and (b) d) None of these

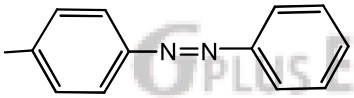
173. General formula of an amine is:

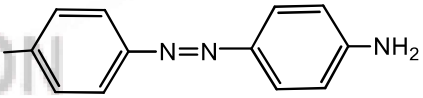
a) $C_nH_{2n+1}N$ b) $C_nH_{2n+2}N$ c) $C_nH_{2n+3}N$ d) $C_nH_{2n}N$

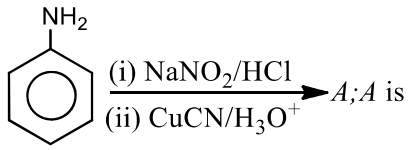
174. Aniline when diazotized in cold and then treated with dimethyl aniline gives a coloured product. Its structure would be

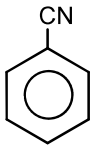
a) 

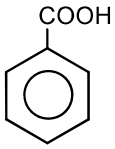
b) 

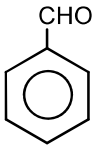
c) 

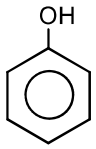
d) 

175. 

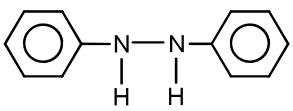
a) 

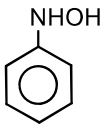
b) 

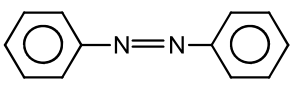
c) 

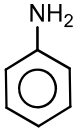
d) 

176. The structure of the compound formed, when nitrobenzene is reduced by lithium aluminium hydride ($LiAlH_4$)is

a) 

b) 

c) 

d) 

177. Aniline and ethylamine resembles in:

a) Solubility

b) Action with HNO_2

c) Action of Grignard reagent

d) Coupling reaction

178. Reaction of cyclohexanone with dimethylamine in the presence of catalytic amount of an acid forms a compound of water during the reaction is continuously removed. The compound formed is generally known as

a) An amine b) An imine c) An enamine d) A Schiff's base

179. Comparing basic strength of NH_3, CH_3NH_2 and $C_6H_5NH_2$ it may be concluded that

a) Basic strength remains unaffected b) Basic strength of alkyl amines is lowest

c) Basic strength of aryl amines is lowest d) Basic strength of NH_3 is highest

180. The product obtained when methylamine is treated with nitrous acid is:

a) CH_3OH b) CH_3—ONO c) CH_3OCH_3 d) Both (b) and (c)

181. Hofmann bromamide reaction is used to prepare

a) 1° amine b) 2° amine c) 3° amine d) All of these

182. Tertiary amine is obtained in the reaction

a) Aniline $\xrightarrow{CH_3I}\xrightarrow{CH_3I}$ b) Aniline $\xrightarrow{CH_3I}$ c) Nitrobenzene $\xrightarrow{Sn/HCl}$ d) None of these

183. Which of the following on reduction with $LiAlH_4$ gives a secondary amine?

a) CH_3NC b) CH_3CONH_2 c) CH_3CN d) CH_3NO_2

184. Which of the following is most basic in aqueous medium?

a) $CH_3CH_2CH_2CH_2NH_2$ b) $CH_3 - CH_2 - CH_2 - NH_2$

c) $CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\underset{|}{\overset{|}{N}}}}-CH_3$ d) $CH_3-CH_2-\underset{\displaystyle CH_3}{\overset{\displaystyle }{\underset{|}{\overset{|}{NH}}}}-CH_3$

185. The product A and B in the reaction are:

$C_2H_5NH_2 + CHCl_3 + 3KOH \longrightarrow A + B + 3H_2O$

a) $C_2H_5NC + 3KCl$ b) $C_2H_5CN + 3KCl$ c) $C_2H_5CONH_2 + 3KCl$ d) $C_2H_5NC + K_2CO_3$

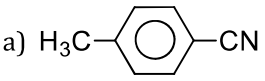
186. p – amine and s – amine are distinguished by:

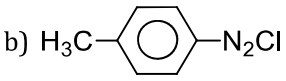
a) Br_2/KOH b) HClO c) HNO_2 d) NH_3

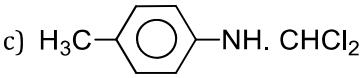
187. Which one of the following compounds will dissolve in an alkali solution after it has undergone reaction with Hinsberg reagent?

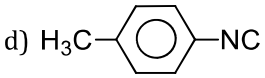
a) CH_3NH_2 b) $(CH_3)_3N$ c) $(C_2H_5)_2NH$ d) $C_6H_5NHC_6H_5$

188. The reaction of chloroform with alcoholic KOH and p-toluidine from

a) 

b) 

c) 

d) 

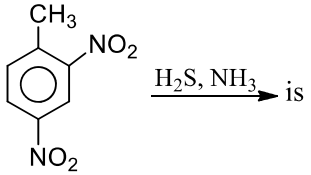
189. Which one of the following functional groups undergoes hydrolysis with alkali to yield an acid group?

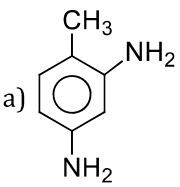
a) $-CN$ b) $-CHO$ c) $-COCH_3$ d) $-Br$

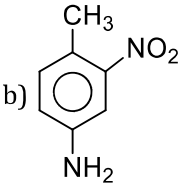
190. Ethylamine reacts with nitrosyl chloride (NOCl)to form:

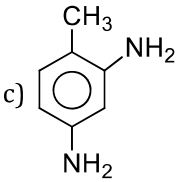
a) Ethyl chloride b) Ethyl alcohol c) Ethyl nitrite d) Nitroethane

191. The product obtained in the reduction



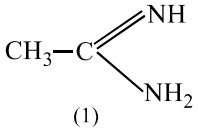
a) 

b) 

c) 

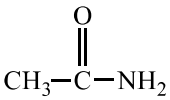
d) The compound is not reduced

192. The correct order of basic nature of the following compounds is:


(1)

$CH_3CH_2NH_2$
(2)

$(CH_3)_2NH$
(3)


(4)

a) $2 > 1 > 3 > 4$
b) $1 > 3 > 2 > 4$
c) $3 > 1 > 2 > 4$
d) $1 > 2 > 3 > 4$

193. In reduction of nitrobenzene, which of the following is the intermediate?

a) ϕNO b) $\phi NHNH\phi$ c) $\phi N = N - \phi$ d) $\phi \overset{\overset{O}{\uparrow}}{N} = N - \phi$

194. Nitration of aniline also gives *m*-nitro aniline in strong acidic medium because

a) In electrophilic substitution reaction amino group is *meta* directive
b) Inspite of substituents nitro group always goes to *m*-position
c) In strong acidic medium aniline aniline present as anilinium ion
d) None of the above

195. Gabriel's sunthesis is used frequently for the preparation of which of the following?

a) Primary amines b) Primary alcohols c) Tertiary amines d) Tertiary alcohols

196. $C_6H_5NO_2 \xrightarrow{Sn/HCl} C_6H_5X$

'*X*' is identified as

a) NO b) $-NH_2$ c) NHOH d) None of these

197. $A \xrightarrow{H_2NOH} B \xrightarrow{\text{Reduction}} C \xrightarrow{NOCl} CH_3CH_2Cl$

In the above sequence *A* and *C* are

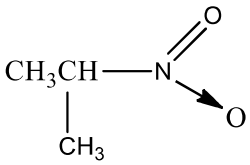
a) Methanal, methyl amine
b) Acetone, ethaneamine
c) Ethanal, diamethyl amine
d) Acetaldehyde, ethyl amine

198. In the following reaction, *X* is

$X \xrightarrow{\text{Bromination}} Y \xrightarrow[+HCl]{NaNO_2} Z \xrightarrow[C_2H_5OH]{\text{Boiling}} \text{Tribromo benzene}$

a) Benzoic acid b) Salicyclic acid c) Phenol d) Aniline

199. Which of the following is not a nitro-derivative?

a) $C_6H_5NO_2$ b) CH_3CH_2ONO c)  d) $C_6H_5(OH)NO_2$

200. Decreasing order of basic nature in aqueous solutions

a) $C_6H_5NH_2 > NH_3 > CH_3NH_2 > (CH_3)_2NH$ b) $NH_3 > C_6H_5NH_2 > CH_3NH_2 > (CH_3)_2NH$

c) $(CH_3)_2NH > CH_3NH_2 > NH_3 > C_6H_5NH_2$ d) $CH_3NH_2 > (CH_3)_2NH > NH_3 > C_6H_5NH_2$

201. The IUPAC name of,  is :

a) 1–methyl-amino propane

b) 2-aminobutane

c) 2-methyl-2-aminopropane

d) None of the above

202. When aqueous solution of benzene diazonium chloride is boiled, the product formed is

a) $C_6H_5CH_2OH$ b) $C_6H_6 + N_2$ c) C_6H_5COOH d) C_6H_5OH

203. Methylethylpropylamine forms non-superimposable mirror images but it does not show optical activity because:

a) Of rapid flipping

b) Amines are basic in nature

c) Nitrogen has a lone pair of electron

d) Of absences of asymmetric nitrogen

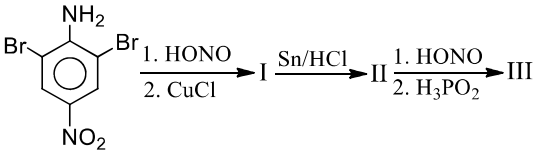
204. $Y \underset{Z}{\overset{\text{Reduction}}{\rightleftharpoons}} [R_2C{=}NH] \xrightarrow{H_3O^+} X$

In the above sequence of reaction X, Y, Z are respectively

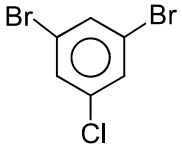
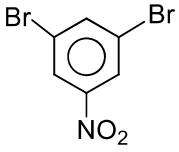
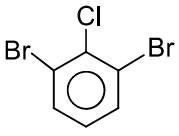
a) Aldehyde, ketone, NH_3 b) Ketone, 1° amine, $KMnO_4$

c) Ketone, 2° amine, $KMnO_4$ d) Ketimine, 1° amine, H_2SO_5

205. The final product (III) obtained in the reaction sequence

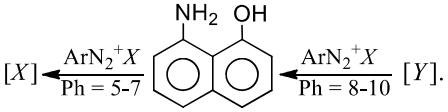


is

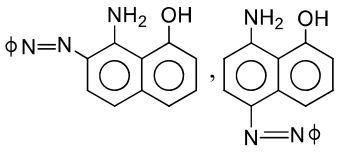
a)  b)  c)  d) None of these

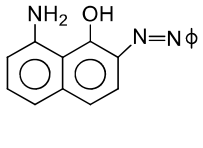
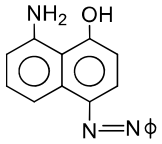
206. Which of the following compound reacts with chloroform and a base to form phenyl isocyanide?

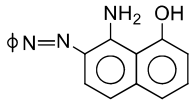
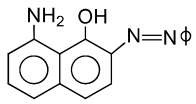
a) Phenol b) Aliline c) Benzene d) Nitrobenzene

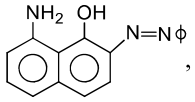
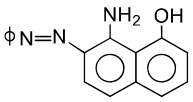
207. 

[X] and [Y]are

a) 

b)  

c)  , 

d)  , 

208. In the reaction,

$RNH_2 \xrightarrow{HNO_2} A + B + C \uparrow$; C is

a) NH_3 b) N_2 c) O_2 d) CO_2

209. The correct set of the products obtained in the following reactions is

(A) $RCN \xrightarrow{\text{Reduction}}$ (B) $RCN \xrightarrow[(II)H_2O]{(I)CH_3MgBr}$

(C) $RNC \xrightarrow{\text{Hydrolysis}}$ (D) $RNH_2 \xrightarrow{HNO_2}$

	A	B	C	D
a)	2°amine	Methyl ketone	1°amine	Alcohol
c)	2°amine	Methyl ketone	2°amine	Acid

b)	1°amine	Methyl ketone	1°amine	Alcohol
d)	2°amine	Methyl ketone	2°amine	aldehyde

210. Which of the following is hydrolysed to give secondary amine?

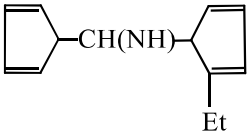
a) Alkyl b)  c) Nitroparaffins d) Acidamide

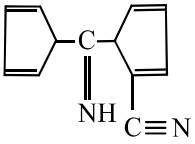
211. $CH_3CH_2Br \xrightarrow[\Delta]{aq.KOH} A \xrightarrow[\Delta]{KMnO_4/H^+} B \xrightarrow[\Delta]{NH_3} C \xrightarrow[\text{alkali}]{Br_2} D$, '$D$' is

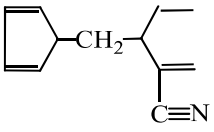
a) CH_3Br b) CH_3CONH_2 c) CH_3NH_2 d) $CHBr_3$

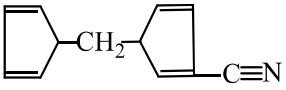
212. The product [A] formed in the reaction;

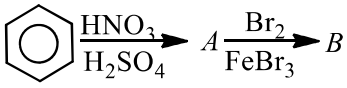
$2C_5H_5-CN \xrightarrow[Et_2O]{Na} [A]$ is:

a) 

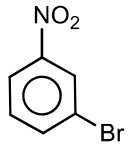
b) 

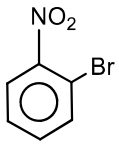
c) 

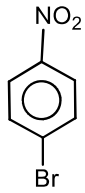
d) 

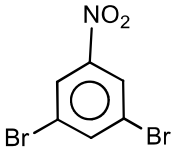
213. 

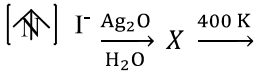
The compound B is

a) 

b) 

c) 

d) 

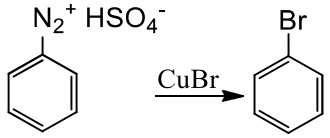
214. 

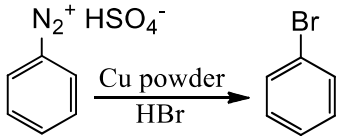
The products of above sequence of reactions are

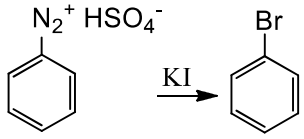
a) $CH_2 = CH_2$ and $(CH_3)_2CHCN$ b) CH_3CH_2CN and $C_2H_5NH_2$

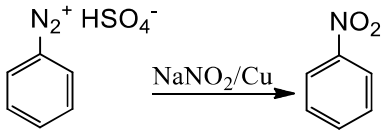
c) $CH_2 = CH_2$ and $(CH_3)_3N$ d) $(CH_3)_2\ C = CH_2$and NH_3

215. Which of the following reactions is an example of Sandmeyer reaction?

a) 

b) 

c) 

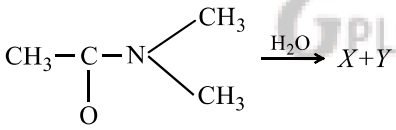
d) 

216. Isopropyl amine with excess of acetyl chloride will give

a) $(CH_3CO)_2N - CH - (CH_3)_2$ b) $(CH_3)_2CH - \underset{\displaystyle H}{\underset{|}{N}} - COCH_3$

c) $(CH_3)_2CHN(COCH_3)_2$ d) $CH_3CH_2CH_2 - \underset{\displaystyle H}{\underset{|}{N}} - COCH_3$

217. X and y in the given reaction are:



a) $CH_3COOH + (CH_3)_2NH$

b) $CH_3CONH_2 + CH_3OH$

c) $CH_3CHO + (CH_3)_2NH$

d) $CH_3COCH_3 + CH_3NH_2$

218. Primary nitroalkanes on hydrolysis give:

a) $RCOOH + NH_2OH$ b) $RCOOH$ c) NH_2OH d) $RCOR$

219. Aliphatic nitriles are prepared by the treatment of alkyl halides with

a) Sodium cyanide b) Sodium isocyanide c) Sodium isocyanate d) Cyanamide

220. Urea is not used:

a) As fertilizer

b) In manufacture of plastic

c) In preparation of medicines

d) In purification of water

221. When aniline is heated with glacial acetic acid in presence of anhydrous $ZnCl_2$, the product is:

a) Acetamide b) Acetanilide c) Phenyl acetamide d) Chlorobenzene

222. Benzene diazonium chloride on treatment with hypo phosphorous acid and water in presence of Cu^+ catalyst produce

a) Benzene b) Toluene c) Aniline d) Chlorobenzene

223. Which of the following cannot be used for following conversion?
$CH_3CN \longrightarrow CH_3CH_2NH_2$
a) Pt/H_2 b) $LiAlH_4$ c) Na/C_2H_5OH d) $SnCl_2/HCl$

224. The bad smelling substance formed by the action of alcoholic caustic potash on chloroform and aniline is
a) Nitrobenzene b) Phenyl isocyanide c) Phenyl cyanide d) Phenyl isocyanate

225. An amine reacts with $C_6H_5SO_2Cl$ and the product is soluble in alkali, amine is:
a) 1° b) 2° c) 3° d) All of these

226. Which of the following reaction will not occur?
a) $\phi N_2^+ + CuBr \xrightarrow{HBr} \phi - Br$
b) $\phi N_2 + \phi OH \longrightarrow \phi - N{=}N - C_6H_4 - OH$
c) $\phi N_2^+ \xrightarrow[HOH]{H_3PO_2} \phi H$
d) $\phi N_2^+ + I^- \rightarrow \phi - I$

227. The end product in the below reaction is
$C_2H_5NH_2 \xrightarrow{HNO_2} A \xrightarrow{PCl_5} B \xrightarrow{NH_3} C$
a) Ethyl cynide b) Ethyl amine c) Methyl amine d) Acetamide

228. Among the amines $(A)C_6H_5NH_2, (B)CH_3NH_2, (C)$ $(CH_3)_2NH, (D)(CH_3)_3N$, the order of basicity is
a) $A < B < D < C$
b) $D < C < B < A$
c) $A < B < C < D$
d) $B < C < D < A$

229. 1 mole of ethyl amine on reaction with HNO_2 gives at NTP
a) 11.2 L of N_2 b) 5.6 L of N_2 c) 22.4 L of N_2 d) 1 L of N_2

230. On heating benzyl amine with chloroform and ethanolic KOH, product obtained is
a) Benzyl alcohol b) Benzaldehyde c) Benzonitrile d) Benzyl isocyanide

231. Which nitro compound will show tautomerism?
a) $C_6H_5NO_2$ b) $(CH_3)_3CNO_2$ c) $CH_3CH_2NO_2$ d) *o*-nitrotoluene

232. Benzamide can be converted into benzonitrile with
a) H_3O^+ b) OH^-/H_2O c) KCN d) P_2O_5

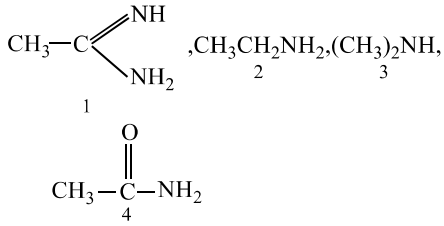
233. Choose the incorrect statement
a) In the case primary, secondary and tertiary amines, the basic strength depends on the extent on the extent of hydrogen bonding in the protonated amines
b) The presence of groups like $-OCH_3$ and $-CH_3$ increases the basic strength of amines
c) The presence of groups like $-NO_2, -CN$ and halogens reduces the basic strength of amines
d) The basic strength of amines depends on their concentration

234. Nitrosoamines $(R_2N - N = O)$ are soluable in water. On heating them with conc H_2SO_4, they give secondary amines. The reaction is called
a) Perkin's reaction b) Fries reaction
c) Liebermann nitroso reaction d) Etard reaction

235. Which of the following is not used for nitration of organic compounds?
a) A mixture of concentrated HNO_3 and concentrated H_2SO_4 b) A mixture of concentrated HNO_4 and acetic anhydride
c) Fuming nitric acid and concentrated sulphuric acid d) Alcoholic potassium nitrate

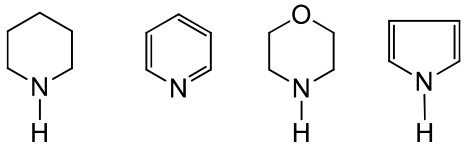
236. *m*-fluoronitrobenzene is best synthesized by using the reaction
a) Nitrobenzene $\xrightarrow[H_2SO_4,heat]{Fuming\ HNO_3}$ [ ] $\xrightarrow{NH_3/H_2S}$ [ ] $\xrightarrow[2.HBF_4,\Delta]{1.HONO}$
b) Aniline $\xrightarrow[heat]{F_2}$
c) Fluorobenzene $\xrightarrow[H_2SO_4,heat]{HNO_3}$
d) m-$C_6H_4(NH_2)_2 \xrightarrow[2.CuNO_2,3.HBF_4]{1.HONO}$

237. The correct order of basicities of the following compounds is:



a) 2 > 1 > 3 > 4 b) 1 > 3 > 2 > 4 c) 3 > 1 > 2 > 4 d) 1 > 2 > 3 > 4

238. Arrange the following compounds in increasing order of basic strength



(I) (II) (III) (IV)

a) IV>I>III>II b) III>I>IV>II c) II>I>III>IV d) I>III>II>IV

239. In the reaction

$R-\mathrm{C}\equiv\mathrm{N}+4(\mathrm{H})\xrightarrow{X}R\mathrm{CH_2NH_2}$

X can be

a) $\mathrm{LiAlH_4}$ b) $\mathrm{H_2SO_4}$ c) Ni d) 2KBr

240. *p*-chloro aniline and anilinium hydrogen chloride can be distinguished by

a) Sandmeyer reaction b) Carbylamines reaction

c) Hinsberg's reaction d) $\mathrm{AgNO_3}$

241. In the chemical reaction,

$\mathrm{CH_3CH_2NH_2}+\mathrm{CHCl_3}+3\mathrm{KOH}\rightarrow(A)+(B)+3\mathrm{H_2O}$

The compounds (A) and (B) are respectively

a) $\mathrm{CH_3CH_2CONH_2}$ and 3KCl b) $\mathrm{C_2H_5NC}$ and $\mathrm{K_2CO_3}$

c) $\mathrm{C_2H_5NC}$ and 3KCl d) $\mathrm{C_2H_5CN}$ and 3KCl

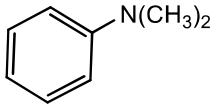
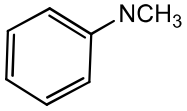
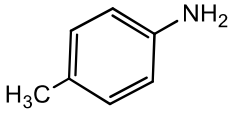
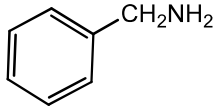
242. The reagent that reacts with nitromethane to form methyl hydroxylamine is

a) Zn/HCl b) $\mathrm{Zn/NH_4Cl}$ c) Zn/NaOH d) Sn/HCl

243. The compound which on reaction with cold $\mathrm{HNO_2}$ gives only nitrosoamine is:

a) $\mathrm{CH_3NH_2}$ b) $(\mathrm{CH_3})_2\mathrm{NH}$ c) $(\mathrm{CH_3})_3\mathrm{N}$ d) $(\mathrm{C_2H_5})_3\mathrm{N}$

244. Amongst the compound given, the one that would form a brilliant coloured dye on treatment with $NaNO_2$ in dil. HCl followed by addition to an alkaline solution of β −naphthol is

a)  b)  c)  d) 

245. Primary, secondary and tertiary amines may be separated by using:

a) Ethanoyl chloride b) Diethyl oxalate c) Thionyl chloride d) None of these

246. Consider the following reaction,

$\mathrm{C_6H_5NO_2}\xrightarrow{\mathrm{Sn/HCl}}X\xrightarrow{\mathrm{C_6H_5COCl}}Y+\mathrm{HCl}$

What is Y?

a) Acetanilide b) Benzanilide c) Azobenzene d) Hydrazobenzene

247. Nitration of aniline in strongly acidic medium, result in the formation of *m*-nitroaniline also. This is because

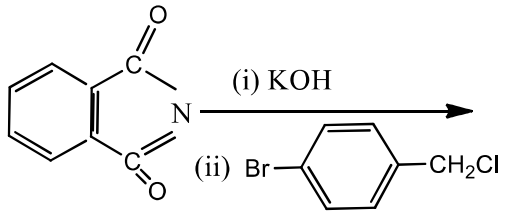
a) Amino group is *meta* orienting during electrophilic substitution reaction.

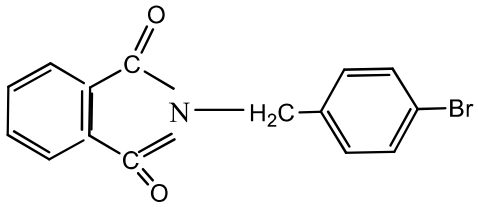
b) Nitro group goes always to the *meta* position irrespective of the substituents.

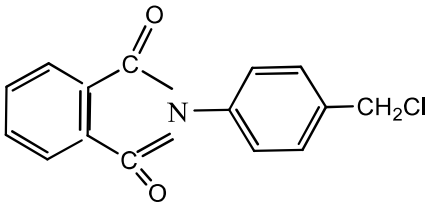
c) Nitration of aniline is a nucleophilic substitution reaction in strongly acidic medium.

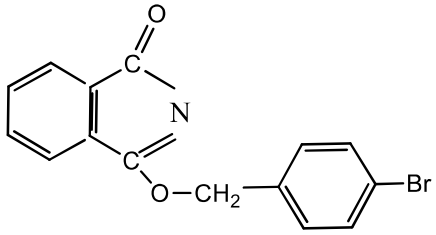
d) In strongly acidic conditions aniline is present as anilinium ion.

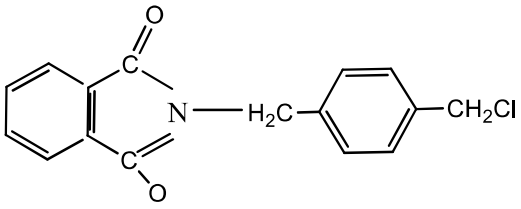
248. The major product of the following reaction is



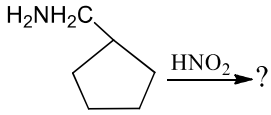
a) 

b) 

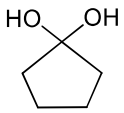
c) 

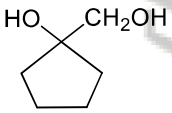
d) 

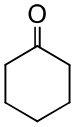
249. Which of the following compounds is soluble in benzene but almost insoluble in water?
a) C_2H_5OH b) CH_3CO_2H c) CH_3CHO d) $C_6H_5NO_2$

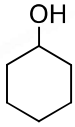
250. 

Product is

a) 

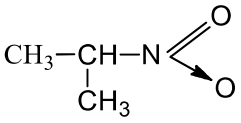
b) 

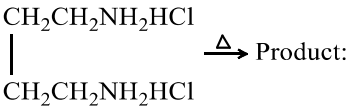
c) 

d) 

251. $CHCl_3 + C_6H_5NH_2 + 3NaOH \rightarrow A + 3B + 3C$
In the above reaction, the product '*A*' is
a) Chlorobenzene b) Phenyl isocyanide c) Phenyl cyanide d) Phenyl chloride

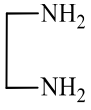
252. Alkyl cyanides undergo Stephen reduction to produce
a) Aldehyde b) Secondary amine c) Primary amine d) amide

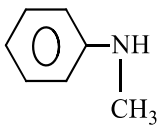
253. Which of the following is not a nitro derivative?
a) $C_6H_5NO_2$ b) CH_3CH_2ONO c)  d) $C_6H_4(OH)NO_2$

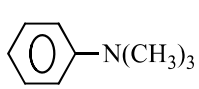
254. In the reaction, 

The product is:

a) 

b) 

c) 

d) 

255. In alkyl cyanide alkyl group attached with
a) C of CN group b) N of CN group
c) Either C or N of CN group d) Both C and N of CN group

256. The diamide of carbonic acid is:
a) Acetamide b) Formamide c) Benzamide d) Urea

257. A positive carbylamines test is given by

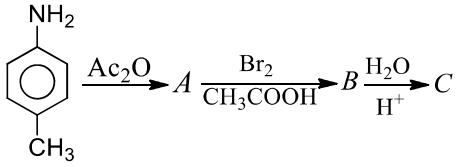
a) N, N-dimethylaniline
b) 2,4-dimethylaniline
c) N-methy-*o* -methylaniline
d) N-methylbenzylamine

258. Which of the following amines can be directly oxidized to the corresponding nitro compound by potassium permanganate?

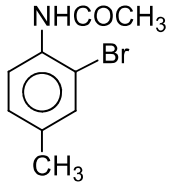
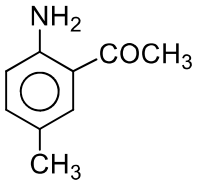
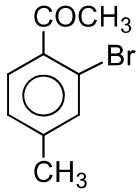
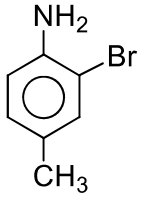
a) CH_3NH_2 b) $CH_2-CH(NH_2)-CH_3$ c) $(CH_3)_2NH$ d) $(CH_3)_3C-NH_2$

259. Arrange the following CH_3NH_2 (I); CH_3NH (II); $C_6H_5NH_2$ (III); $(CH_3)_3N$ (IV) in increasing order of basic nature in aqueous medium:

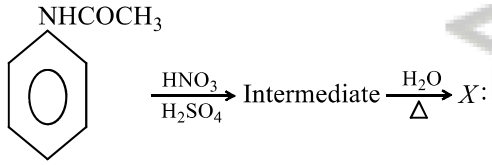
a) II < I < IV < III b) III < IV < I < II c) I < II < III < IV d) II < III < I < IV

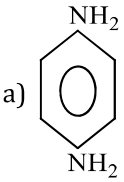
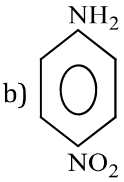
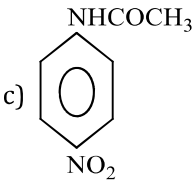
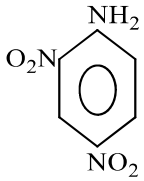
260. 

The final product '*C*' in the above reaction is

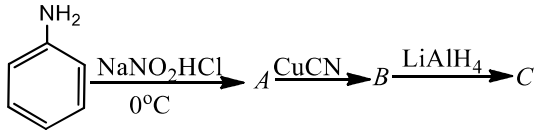
a) 
b) 
c) 
d) 

261. Identify *X* in the series,



a) 
b) 
c) 
d) 

262. In the reaction sequence



The product 'C' is

a) Benzonitrile b) Benzaldehyde c) Benzoic acid d) Benzyl amine

263. Nitroalkane is acidic only towards :

a) Na_2CO_3 b) NaOH c) Alcohol d) Liquid NH_3

264. Urea reacts with hydrazine to form:

a) Nitrogen b) Phenyl hydrazine c) Semicarbazide d) Urethane

265. Phenyl cyanide cannot be obtained by

a) $C_6H_5CONH_2 \xrightarrow{P_2O_5,\Delta}$ b) $C_6H_5 - CH = NOH \xrightarrow{Ac_2O,\Delta}$

c) $C_6H_5Cl \xrightarrow{alc.KOH}$ d) $C_6H_5NH_2 \xrightarrow[2.CuCN]{1.NaNO_2/HCl}$

266. Substitution of one alkyl group by replacing hydrogen of primary amines:

a) Increases the base strength

b) Decreases the base strength

c) Remains the same

d) None of the above

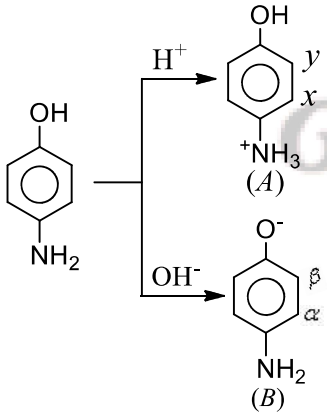
267. Acetanilide is prepared by the reaction of acetyl chloride on:

a) Acetamide b) Aniline c) Acetaldehyde d) Benzene

268. Aqueous solution of urea is:

a) Acidic b) Alkaline c) Almost neutral d) Amphoteric

269. Consider p-aminophenol



Which positions are activated for coupling reaction in acidic and basic media respectively?

a) x in A and β in B b) x in A and α in B c) y in A and α in B d) y in A and β in B

270. The general formula of quaternary ammonium compound is:

a) R—NH_2 b) R_3N c) $[R_4N]^+X^-$ d) NH_4X

271. Reaction of nitrous acid on 1° aliphatic amines in cold will give:

a) A diazonium salt b) An alcohol c) A nitrile d) A dye

272. In pyridine, the state of hybridization of the nitrogen atom is

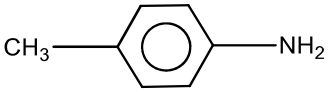
a) sp^2 b) sp^3 c) sp d) None of these

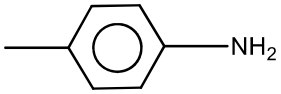
273. Which of the following will give a primary amine on hydrolysis?

a) Nitroparaffin b) Alkyl cyanide c) Oxime d) Alkyl isocyanate

274. Which of the following compounds will form alcohol on treatment with $NaNO_2$, HCl/H_2O at 0°C ?

a) $(CH_3)_2CHNH_2$ b) $C_6H_5NH_2$

c) 

d) 

275. Which of the following statements is correct?
   a) Aniline is stronger base than ammonia
   b) Methylamine is a stronger base than aniline and ammonia
   c) Aniline is stronger than ammonia, but weaker base than methylamine
   d) Methylamine is stronger than aniline, but weaker base than ammonia

276. Benzenediazonium chloride on reaction with phenol in weakly basic medium gives
   a) Diphenyl ether
   b) *p*-hydroxyazobenzene
   c) Chlorobenzene
   d) benzene

277. Which of the following methods neither means for the synthesis nor for separation of amines?
   a) Hinsberg's method b) Hofmann's method c) Wurtz reaction d) Curtius method

278. Which substance when boiled with NaOH will evolve NH_3?
   a) Ethylamine b) Aniline c) Acetamide d) Acetoxime

279. Acetonitrile on reduction gives
   a) Propanamine b) Methanamine c) Ethanamine d) None of these

280. When ethanol is mixed with ammonia and passed over catalyst, the compound formed is:
   a) $C_2H_5NH_2$ b) C_2H_4 c) $C_2H_5OC_2H_5$ d) CH_3OCH_3

281. The molecular formula of benzonitrile is
   a) C_6H_5CN b) C_6H_5NC c) C_6H_5CNO d) C_6H_5NCO

282. Which of the following amines form maximum hydrogen bonds within themselves?
   a) CH_3NH_2 b) $(CH_3)_2NH$ c) $(CH_3)_3N$ d) None of these

283. The correct order of the increasing basic nature of methyl amine, ammonia and aniline is:
   a) Methylamine < aniline < ammonia
   b) Aniline < ammonia < methylamine
   c) Aniline < methylamine < ammonia
   d) Ammonia < aniline < methylamine

284. Diazotisation can be carried out by the action of $NaNO_2$ and dilute HCl at ice cold temperature on:
   a) Aromatic secondary amine
   b) Aromatic primary amine
   c) Aromatic nitro compound
   d) Aromatic amine

285. Aliphatic amines are ... ... basic than NH_3 but aromatic amines are ... ... basic than NH_3.
   a) More, less b) Less, more c) Both (a) and (b) d) None of these

286. Aniline is weaker base than ethylamine because:
   a) Lone pair of electrons of N-atom is not freely available for coordination with a proton due to resonance than in ethylamine
   b) Its b. p. is higher than that of ethylamine
   c) It does not produce sufficient concentration of OH^- ions in solution
   d) It is insoluble in water while ethylamine is soluble in water

287. The basic character of methylamines in vapour phase is:
   a) $3^\circ > 2^\circ > 1^\circ > NH_3$ b) $2^\circ > 3^\circ > 1^\circ > NH_3$ c) $1^\circ > 2^\circ > 3^\circ > NH_3$ d) None of these

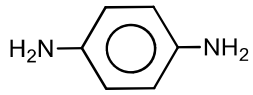
288. Isopropylamine $\xrightarrow{KMnO_4} X \xrightarrow{H_3O^+} Y$. In the above sequence X and Y are respectively
   a) Acetaldimine, ethanal
   b) Ethanal, ketimine
   c) Ketimine, acetone
   d) Acetone, propan-2-ol

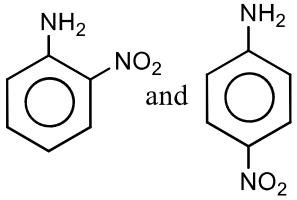
289. Which of the following compound does not undergoes Schotten-Baumann reaction?
   a) Phenol b) Primary amine c) Secondary amine d) Tertiary amine

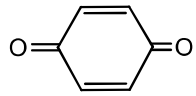
290. Production of amines by ammonia and alkyl halides is called
   a) Frankland reaction
   b) Hofmann's ammonolysis
   c) Hofmann's mustrard oil reaction
   d) Hofmann's bromamide reaction

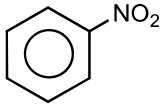
291. Which of the following is carbamide?
   a) CH_3CONH_2 b) NH_2CONH_2 c) $CH_2(NH_2)CONH_2$ d) $CO(OH)NH_2$

292. Aniline reacts with conc. HNO_3 to give

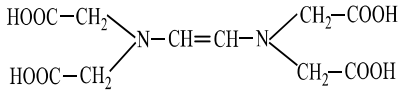
a) 

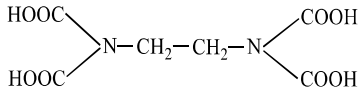
b) 

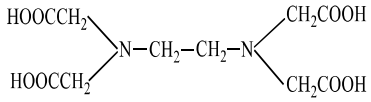
c) 

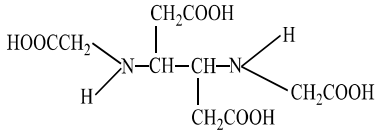
d) 

293. The correct structure of ethylenediamine-tetra acetic acid (EDTA) is :

a) 

b) 

c) 

d) 

294. Hydrazobenzene $\xrightarrow{NaIO_3}(X)\xrightarrow{CH_3CO_3H}(Y)$

Both X and Y on reduction with Sn/HCl give$Z$. Which of the following does not represent X, Y or Z?

a) Azobenzene b) Phenol c) Aniline d) Azoxybenzene

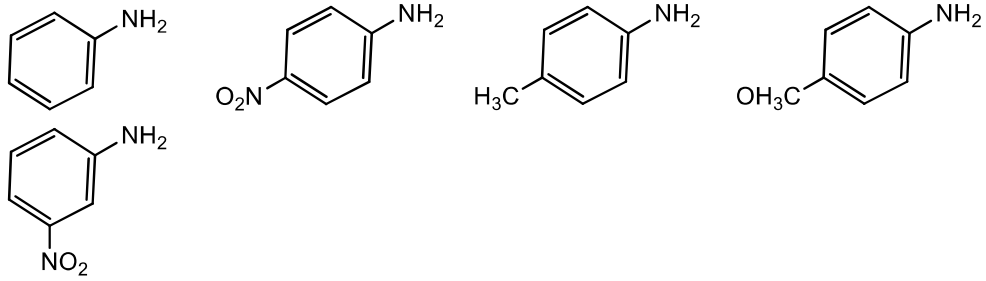
295. The pri., sec. and ter. amines can be distinguished by:

a) Hinsberg's reagent b) Grignard reagent c) Fehling's solution d) Tollen's reagent

296. Final product of hydrolysed alkyl cyanide is

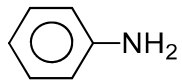
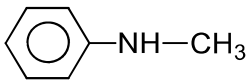
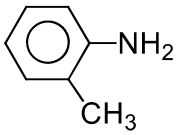
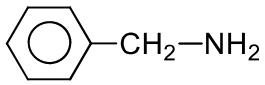
a) RCOOH b) RCONH$_2$ c) $R-\underset{\underset{OH}{|}}{C}=NH$ d) $R-C\equiv\overset{\oplus}{N}H$

297. The correct order of increasing basic nature of the following bases is



a) II < V < I < III < IV b) V < II < I < III < IV c) II < V < I < IV < III d) V < II < I < IV < III

298. Which of the following is the strongest base?

a)  b)  c)  d) 

299. The basicity of compounds I, II, III and IV

$CH_3NH_2, (CH_3)_2NH, (CH_3)_3N, C_6H_5CH_2NH_2$

I II III IV

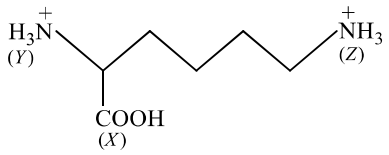
varies in the order

a) I > II > III > IV b) II > I > III > IV c) III > I > II > IV d) IV > I > II > III

300. Which one of the following does not have sp^2 hybridised carbon?
a) Acetone b) Acetic acid c) Acetonitrile d) Acetamide

301. The basic character of amines can be explained:
a) In terms of Lewis and Arrhenius concept
b) Only in terms of Lowry Bronsted concept
c) It terms of Lewis and Lowry Bronsted concept
d) Only in Lewis concept

302. In the compound given below,



the correct order of acidic nature of the positions (X), (Y) and (Z) is:
a) $Z > X > Y$ b) $X > Y > Z$ c) $X > Z > Y$ d) $Y > X > Z$

303. KCN reacts readily to give a cyanide
a) Ethyl alcohol b) Ethyl bromide c) Bromobenzene d) chlorobenzene

304. A colourless organic compound gave brisk effervescence with a mixture of $NaNO_2$ and dil. HCl. It could be:
a) Glucose b) Oxalic acid c) Urea d) Benzoic acid

305. Which of the following reactions can be used to prepare ethyl isocyanide?
a) $CH_3CH_2I + NaCN \xrightarrow{C_2H_5OH/H_2O}$ b) $CH_3CH_2I + KCN \xrightarrow[\Delta]{\text{Alcohol}}$
c) $CH_3CH_2NH_2 + CHCL_3 + KOH \xrightarrow[\Delta]{\text{Alcohol}}$ d) None of the above

306. Diethyl oxalate is used for distinguishing primary, secondary and tertiary
a) Alcohols b) Amines
c) Alkyl halides d) Hydrogens in hydrocarbons

307. Identify X in the sequence,
$X \xrightarrow{HNO_2} C_3H_8O \xrightarrow[H_2SO_4]{} C_3H_6O_2$:
a) $CH_3—NH—CH_2—CH_3$
b) $CH_3—CH_2—CH_2—NH_2$
c) $(CH_3)_3N$
d) None of the above

308. $CH_3CONH_2 + NaOH \longrightarrow CH_3COONa + A$
Urea is obtained if product if product 'A' in the above reaction reacts with the following compound
a) Ethyl carbonate b) Ethyl urethane c) Phosgene d) All of these

309. Which of the following is involved in Sandmeyer's reaction?
a) Ferrous salt
b) Diazonium salt
c) Ammonium salt
d) Cupraammonium salt

310. RMgX on reacting with cyanogen chloride gives:
a) R—NC b) R—Cl c) R—CN d) None of these

311. Methyl amine reacts with methyl iodide. For completion of reaction, how many moles of methyl iodide are required ?
a) 1 b) 2 c) 3 d) 4

312. Aniline on oxidation with $Na_2Cr_2O_7$ and H_2SO_4 gives
a) Benzoic acid b) *m*-amino benzoic acid c) Schiff's base d) *p*-bezoquinone

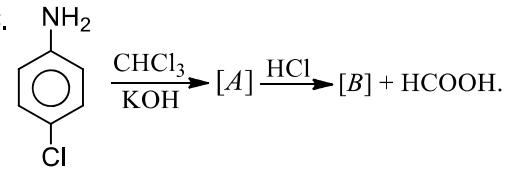
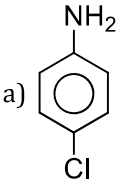
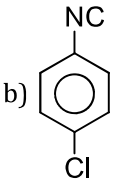
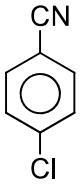
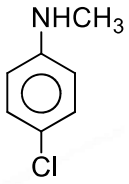
313. Among the following the weakest base is
a) $C_6H_5CH_2NH_2$ b) $C_6H_5CH_2NHCH_3$ c) $O_2NCH_2NH_2$ d) CH_3NHCHO

314. Why do 2° and 3° amines fail to undergo the carbylamines test?
   a) They combine with chloroform to give a stable compound
   b) They react with alcoholic KOH
   c) They nitrogen atom of the amine group does not have the required number of hydrogen atoms
   d) All the given reasons are correct

315. The compound that will react most readily with NaOH to form methanol is
   a) $(CH_3)_4N^+I^-$ b) CH_3OCH_3 c) $(CH_3)S^+I^-$ d) $(CH_3)_3CCl$

316. Alkanamide , which on Hofmann's reaction gives 1-phenylethylamine, is:
   a) 2-phenylpropanamide
   b) 3-phenylpropanamide
   c) 2-phenylethanamide
   d) *N*-phenylethanamide

317. Which of the following compounds is expected to be most basic?
   a) Aniline b) Ethylamine c) Hydroxylamine d) Methylamine

318. 
   What is $[B]$?
   a) 
   b) 
   c) 
   d) 

319. Aniline is not the major product in one of the following reactions. Identify that reaction.
   a) $C_6H_5OH + NH_3 \xrightarrow[300°C]{ZnCl_2}$
   b) $C_6H_5NO_2 + Zn\ powder \xrightarrow{Alcoholic\ KOH}$
   c) $C_6H_5Ci + NH_3 \xrightarrow[Cu_2O]{200°C}$ High pressure
   d) $C_6H_5NO_2 + 6(H) \xrightarrow[HCl]{Fe+H_2O}$

320. In the reaction between CH_3NC and HgO, the product obtained is
   a) Methyl isothiocyanate b) Methyl isocyanate
   c) Methyl amine d) Methyl cyanide

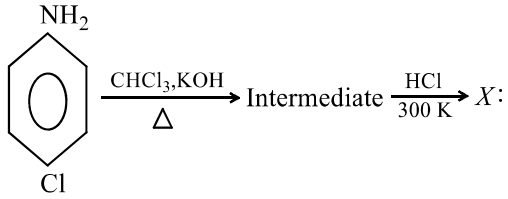
321. Complete the following reaction
   $RNH_2 + H_2SO_4 \rightarrow$
   a) $[RNH_3]^+HSO_4^-$ b) $[RNH_3]_2^+SO_4^{2-}$ c) $RNH_2.H_2SO_4$ d) No reaction

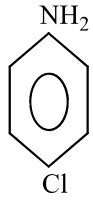
322. Which one of the following is the strongest base in aqueous solution?
   a) Trimethylamine b) Aniline c) Dimethylamine d) Methylamine

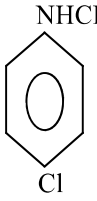
323. Nitrobenzene on reduction with Al–Hg and water gives:
   a) Azobenzene
   b) Aniline
   c) Azoxy benzene
   d) phenylhydroxylamine

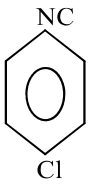
324. Gabriels phthalimide reaction is used to prepare:
   a) *p* –amine b) *s* – amine c) *t* – amine d) All of these

325. Identify *X* in the reaction,



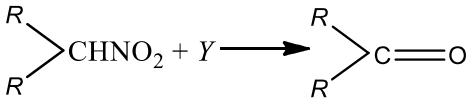
a) 

b) 

c) 

d) 

326. Secondary nitroalkanes can be converted into ketones by using *Y*. Identify *Y* from the following



a) Aqueous HCl b) Aqueous NaOH c) $KMnO_4$ d) CO

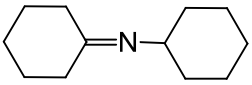
327. The strongest base among the following is

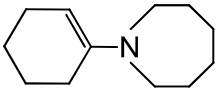
a) $C_6H_5NH_2$ b) $(C_6H_5)_2NH$ c) NH_3 d) $(C_2H_5)_2NH$

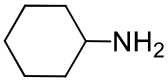
328. Alkyl nitrite on reduction with Sn/HCl gives:

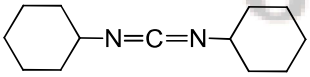
a) Alcohol b) Hydroxylamine c) Both (a) and (b) d) hydrazine

329. Which of the following is an enamine?

a) 

b) 

c) 

d) 

330. The number of π-bonds in the formula given below, NC—CH=CH—CN are:

a) 5 b) 4 c) 3 d) 2

331. Which of the following is most basic in nature?

a) NH_3 b) CH_3NH_2 c) $(CH_3)_2NH$ d) $C_6H_5N(CH_3)_2$

332. Diazomethane reacts with carboxylic acids to produce:

a) Ester b) Alcohol c) Amine d) Imines

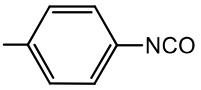
333. Which compound is known as alkyl carbylamines?

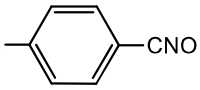
a) *R*. CN b) *R*. NC c) Ar. CN d) Ar. NC

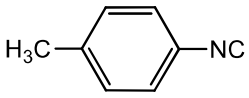
334. *n*-propylamine yields a volatile compound *X* on warming with alc. alkali and chloroform. *X* has an offensive odour. The structure of *X* is

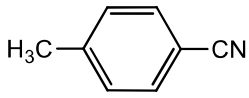
a) $CH_3CH_2CH_2CN$ b) $(CH_3)_2CHCN$ c) $CH_3CH_2CH_2NC$ d) $(CH_3)_2CHNC$

335. The reaction of $CHCl_3$ and alcoholic KOH with *p*-toluidine gives

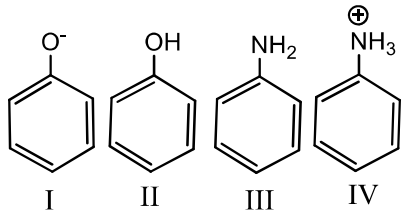
a) 

b) 

c) 

d) 

336. Coupling of diazonium salts of following takes place in the order

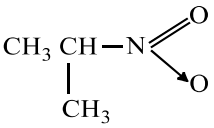


a) IV < II <III < I b) IV > III < II < I c) II < IV < I < III d) I < II < III < IV

337. Tertiary nitroalkane cannot tautomerise because
a) Their tautomeric forms are highly unstable b) They do not contain any multiple bond
c) They do not have labile H-atom d) They are not basic in nature

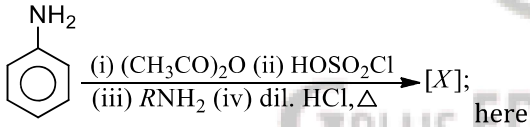
338. In aqueous solutions, the basic strength of amines decreases in the order
a) $CH_3NH_2 > (CH_3)_2NH > (CH_3)_3N$ b) $(CH_3)_2NH > (CH_3)_3N > CH_3NH_2$
c) $(CH_3)_3N > (CH_3)_2NH > CH_3NH_2$ d) $(CH_3)_2NH_2 > CH_3NH_2 > (CH_3)_3N$

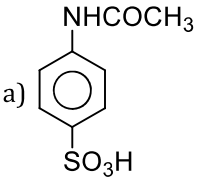
339. Dichlorocarbene does not form as an intermediate in this reaction
a) phenol + $CHCl_3$ + 4KOH b) Ethyl amine +$CHCl_3$ + KOH
c) Phenol+CCl_4 + 4KOH d) $CHCl_3$ + KOH

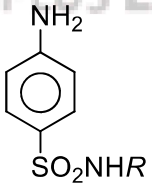
340. Which of the following is not a nitroderivative?
a) $C_6H_5NO_2$ b) CH_3CH_2ONO c)  d) $C_6H_4(OH)NO_2$

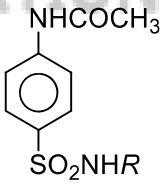
341. Urea reacts with HNO_3 to give:
a) Urea nitrite b) Urea nitrate c) H_2CO_3 d) None of these

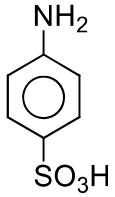
342. Which of the following reagents will convert nitromethane into methylamine?
a) Zn/HCl b) Zn/NaOH c) Zn/C_2H_5OH d) Ni/H_2

343. 

a) 

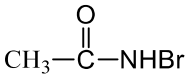
b) 

c) 

d) 

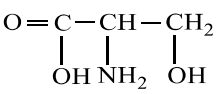
344. In which reaction, nitrene is not the intermediate?
a) Schmidt b) Curtius
c) Hofmann bromamide d) Gabriel's phthalimide

345. CH_3CONH_2. Br_2 and KOH give CH_3NH_2 as the product. The intermediates of the reaction are

(A)  B) $CH_3 - N = C = O$

(C)CH_3NHBr (D) CH_3CONBr_2

The correct answer is
a) A, B b) A, C c) C, D d) B, D

346. The IUPAC name of the compound having formula,  is:

a) 3-aminohydroxy propionic acid
b) 2-amino-propan-3-oic acid
c) Amino hydroxy propanoic acid
d) 2-amino-3-hydroxy propanoic acid

347. An organic amino compound reacts with aqueous nitrous acid at low temperature to produce an oily nitroso amine. The compound is
a) CH_3NH_2 b) $CH_3CH_2NH_2$
c) $(CH_3CH_2)_3N$ d) $CH_3CH_2 - NHCH_2CH_3$

348. Biuret test is not given by:
a) Proteins b) Carbohydrates c) Polypeptides d) Urea

349. Among the following compounds, the most basic is
a) Aniline b) Acetanilide c) *p*-nitroaniline d) Benzyl amine

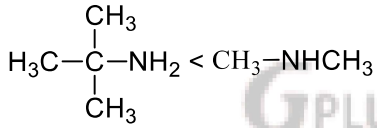
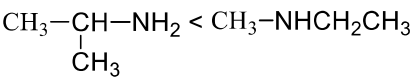
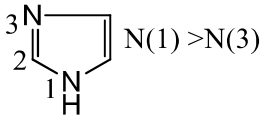
350. The geometry of ethylamine is:
a) Pyramidal b) Tetrahedral c) Triangular d) Square planar

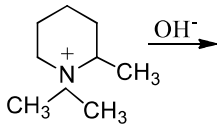
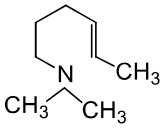
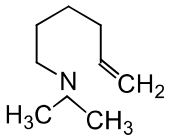
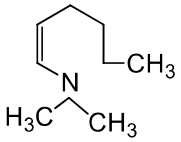
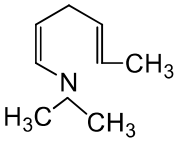
351. When $(NH_4)_2SO_4 + KCNO$ are heated, we get:
a) Nitrogen
b) Carbon dioxide
c) Biuret
d) Ammonium carbonate

352. Grignard reagent and acetyl chloride does not react with:
a) RNH_2 b) R_2NH c) R_3N d) None of these

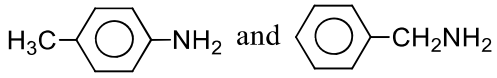
353. Acetaldoxime reacts with P_2O_5 to give:
a) CH_3CN b) C_2H_5CNO c) C_2H_5CN d) All of these

354. 2,4,6-tribromo aniline is a product of:
a) Electrophilic addition on $C_6H_5NH_2$
b) Electrophilic substitution on $C_6H_5NH_2$
c) Nucleophilic addition on $C_6H_5NH_2$
d) Nucleophilic substitution on $C_6H_5NH_2$

355. Choose the incorrect comparision(s)
a)  (basicity in aqueous medium)
b) $CH_3CH_2CH_2NH_2 > (CH_3)_3N$ (basicity in aqueous medium)
c)  (basicity in the gaseous state)
d)  (basicity in aqueous medium)

356. Identify the major product of the reaction

a) 
b) 
c) 
d) 

357. Which of the following compounds gives a secondary amine on reduction?
a) Nitromethane b) Nitrobenzene c) Methyl isocyanide d) Methyl cyanide

358. Which of the following regents will be useful as the basic for a simple chemical test to distinguish between?

a) $C_6H_5SO_2Cl$ and OH^- in H_2O b) HONO, then β-naphthol

c) Dilute HCl d) $AgNO_3$ in H_2O

359. Amine may contain:

a) $—NH_2$gp b) $>$NH gp. c) $\rightarrow$N gp. d) All of these

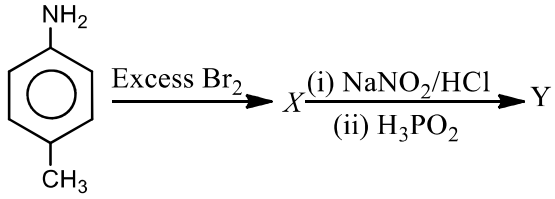
360. Diethylamine on oxidation with $KMnO_4$ gives:

a) Ethanal b) Propanone c) Tetraethyl hydrazine d) None of these

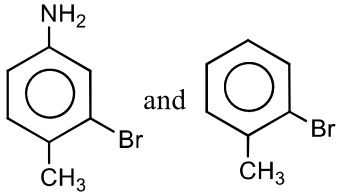
361. An aliphatic nitro compound turns red with the addition of a concentrated NaOH solution, followed by the addition of an excess of an $NaNO_2$ solution and then dilute H_2SO_4. The colour disappears with the addition of the excess of an acid but reappears if the solution is made alkaline. The aliphatic nitro compound is

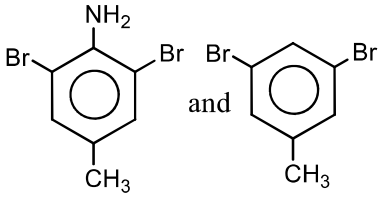
a) $CH_3CH_2NO_2$ b) $(CH_3)_2CHNO_2$ c) $(CH_3)_3CNO_2$ d) All of these

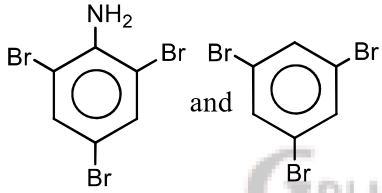
362. In the following reaction sequence predict the compound X and Y.

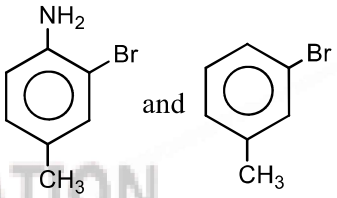


The compound X and Y are

a) 

b) 

c) 

d) 

363. Primary amine (RNH_2) reacts with nitrous acid to give

a) $RNH_3^+NO_2$ b) ROH c) ROR d) None of these

364. Carbylamine reaction tubes are not thrown into sink, to avoid bad odour, but are treated with conc. HCl to give:

a) $RCOOH + NH_3$ b) RNH_2 c) $RNH_2 + HCOOH$ d) $RCOOH + N_2$

365. The compound obtained by heating a mixture of 1° amine and chloroform with ethanolic potassium hydroxide is

a) An alkyl isocyanide b) An alkyl isothiocyanate

c) An amide d) An amide and nitro compound

366. The best method to synthesise *m*-dibromobenzene is by using the reaction

a) Benzene $\xrightarrow{Br_2/FeBr_3/heat}$ Nitrobenzene

b) Aniline $\xrightarrow{Br_2,H_2O}$ [ ] $\xrightarrow[2.CuBr]{1.HONO}$ Bromobenzene

c) $\xrightarrow[H_2SO_4,\Delta]{Fuming\ HNO_3}$ [ ] $\xrightarrow[C_2H_5OH,heat]{Fe/HCl}$ [ ] $\xrightarrow[2.CuBr]{1.HONO}$

d) $\xrightarrow[H_2SO_4]{HNO_3}$ [ ] $\xrightarrow[C_2H_5OH,heat]{Fe/HCl}$ [ ] $\xrightarrow[2.CuBr]{1.HONO}$

367. The main product in the reaction,

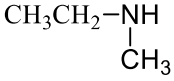
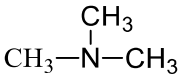
$HCONHR \xrightarrow[Pyridine]{POCl_3}$ is :

a) RCN b) RNC c) $RCNO$ d) $RNCO$

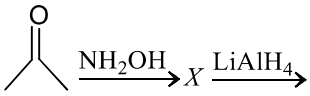
368. The type of isomerism shown by C_6H_5CN and C_6H_5NC is:

a) Position b) Functional c) Enantiomerism d) Tautomerism

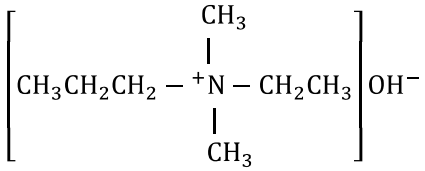
369. Which among the following has the highest boiling point?

a) $CH_3CH_2CH_2NH_2$ b)  c)  d) CH_3NH_2

370. Benzaldehyde reacts with methyl amine to give:
a) $C_6H_5NH_2$ b) $C_6H_5CH_2NH_2$ c) $C_6H_5CH{=}NCH_3$ d) $C_6H_5CONH_2$

371.  In the above sequence Y is
a) Tertiary amine b) Secondary amine c) Primary amine d) 2-nitropropane

372. Ethylamine undergoes oxidation in the presence of $KMnO_4$ followed by hydrolysis to form:
a) An acid b) An alcohol c) An aldehyde d) a N-oxide

373. When  Is heated, then
a) Propene is the major product
b) Ethane and $C_3H_7N(CH_3)_2$ are the only product
c) Ethane and propene are obtained while ethane as the major product
d) Equimolar amounts of ethane and propene are obtained

374. Diethyl carbonate on heating with ammonia gives:
a) $C_2H_5NH_2$
b) $(C_2H_5)_3N$
c) $(C_2H_5)_2NH$
d) Urea

375. In which case formation of butane nitrile is possible?
a) $C_3H_7Br + KCN$ b) $C_4H_9Br + KCN$ c) $C_3H_7OH + KCN$ d) $C_4H_9OH + KCN$

376. Ethyl amine reacts with nitrous acid to form
a) C_2H_5OH b) C_2H_5OH, N_2, H_2O c) $C_2H_5N_2^+Cl^-$ d) C_2H_5NHOH, NH_3

377. Which of the following compounds will undergo carbylamine reactions?
a) $(CH_3CH_2)_2NH$ b) $(CH_3)_2NH$ c) $C_6H_5NH_2$ d) $(CH_3)_3N$

378. Aniline first reacts with acetyl chloride producing compound '*A*'. '*A*' reacts with nitric acid/sulphuric acid mixture and produces compound '*B*', which hydrolyses to compound '*C*'. What is the identify of '*C*' ?
a) Acetanilide b) *p*-nitroacetanilide c) *p*-nitroaniline d) Aniline