



## CHEMISTRY

### BOOKS - MODERN PUBLICATION

### ORGANIC COMPOUNDS CONTAINING NITROGEN

#### Example

1. Draw the structures, give names according to IUPAC and indicate primary, secondary and tertiary amines : eight isomeric amines of formula  $C_4H_{11}N$ .



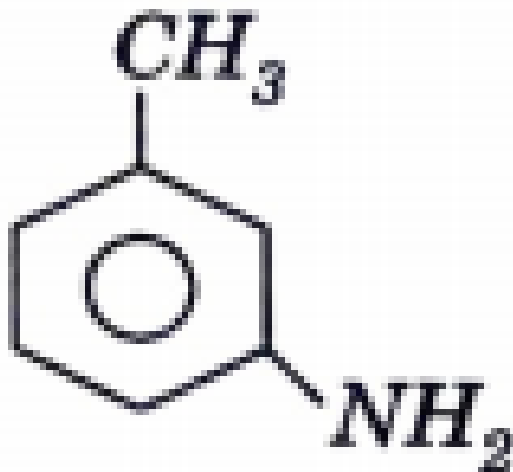
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2. Draw the structures, give names according to IUPAC and indicate primary, secondary and tertiary amines : five isomeric amines of formula

$C_7H_9N$  that contain a benzene ring.

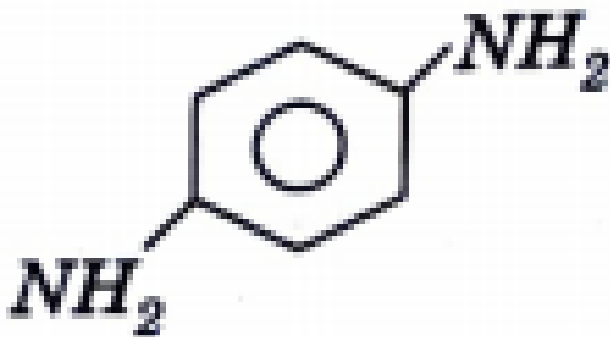
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3. Give the IUPAC names of the following compounds



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4. Give the IUPAC names of the following compounds



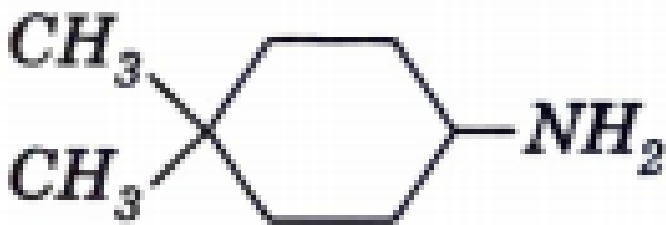
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5. Give the IUPAC names of the following compounds



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6. Give the IUPAC names of the following compounds



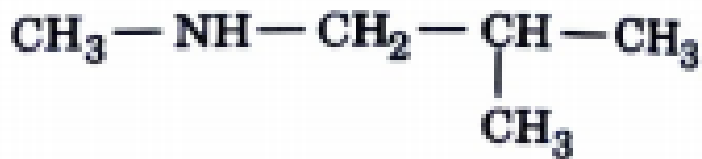
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7. Give the IUPAC names of the following compounds



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8. Give the IUPAC names of the following compounds



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9. Draw structures for the following compound : p-toluidine

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10. Draw structures for the following compound : N- isopropylaniline

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11. Draw structures for the following compound : t-butylamine

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12. Draw structures for the following compound : p-fluoroaniline

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13. Draw structures for the following compound : N-Ethyl-4-isopropyl-N-methylaniline

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14. Draw structures for the following compound : p-tert-butylaniline

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15. Write IUPAC names of the following :-  $CH_3CH_2\overset{\overset{CH_3}{|}}{C}H NH_2$

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16. To kill fungus and moulds of the plants, a special mixture is prepared by mixing solution of  $\text{CuSO}_4$  and  $\text{CaO}$ . The mixture is known as-

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17. Fill in the blanks- \_\_\_\_\_ is made up of 60% of copper and 40% of nickel and is used to make electric wires.

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18. Write IUPAC names of the following :-  $\text{NH}_2(\text{CH}_2)_3 \overset{\text{C}}{\underset{\text{NH}_2}{\text{HCOOH}}}$

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19. Write IUPAC names of the following :-  $\text{C}_6\text{H}_5 - \overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}} \text{HCH}_2\text{NH}_2$





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20. Write IUPAC names of the following :-  $H_3C - \underset{\substack{| \\ H}}{N} - CH_2 - CH_3$



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21. What is the composition of constantan alloy?



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22. Fill in the blanks- \_\_\_\_\_ is the chemical compound whose commercial name is phosgene and is known to make plastics and pesticides.



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23. Write the structural formula of the following and indicate primary, second or tertiary amines : 1- (N-Ethyl-N-methylamino) Propane .

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24. Write the structural formula of the following and indicate primary, second or tertiary amines : Dibenzylamine .

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25. Predict which of the following names are not correct ?

N-butylaminoethane .

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26. The commercial name for Carbonyl chloride is \_\_\_\_\_.

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27. Predict which of the following names are not correct ?

Methylaniline.



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28. Predict which of the following names are not correct ?

Propanediamine .



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29. Predict which of the following names are not correct ?

1-Phenylaminoethane.



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30. Write chemical equations for the following reactions : Reaction of ethanolic  $NH_3$  with  $C_2H_5Cl$ .

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31. Write chemical equations for the following reactions : Ammonolysis of benzyl chloride and reaction of amine so formed with two moles of  $CH_3Cl$ .

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32. Write chemical equations for the following conversions:

$C_6H_5CH_2NH_2$  into  $C_6H_5CH_2OH$

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**33.** Write chemical equations for the following conversions:

$C_2H_5Cl$  into  $(C_2H_5)_3N$

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**34.** Write chemical equations for the following conversions:

Propene into butylamine .

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**35.** Write chemical equations for the following conversions:

n-propyl bromide into ethylamine .

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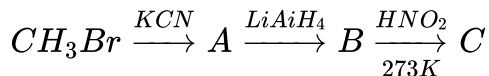
**36.** Write chemical equations for the following conversions:

Benzene into benzylamine .



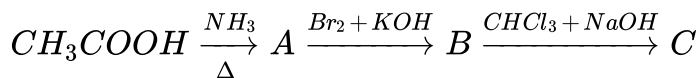
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37. Give the structures of A, B and C in the following reactions:



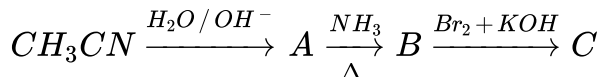
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38. Give the structures of A, B and C in the following reactions:



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39. Give the structures of A, B and C in the following reactions:



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40. Write structures and IUPAC names of the amide which gives propanamine by Hoffmann bromamide reaction .

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41. Write structures and IUPAC names of the alkyl halide used in Gabriel phthalimide synthesis to give ethanamine.

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42. Write structures and IUPAC names of amine obtained by reduction of propanamide.

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43. Write structures and IUPAC names of the amine produced by the Hoffmann degradation of benzamide.

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44. Complete the following reactions :



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45. Complete the following reactions :



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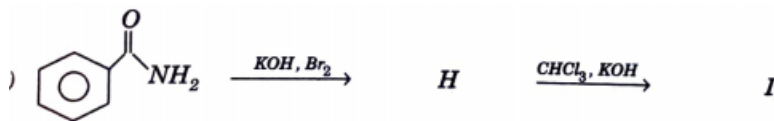
46. Complete the following reactions :



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47. Complete the following reactions :



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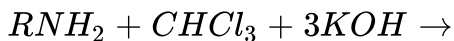
48. How will you convert an alkyl halide into a primary amine having one more carbon atom than the alkyl halide uses .

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49. How can a carboxylic acid be converted into an amine having one less carbon atom than the carboxylic acid used?

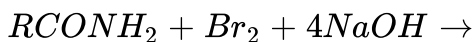
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50. Complete and name the following reactions :



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51. Complete and name the following reactions :



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52. How will you convert the following - Nitrobenzene into aniline. Write the chemical equations involved.

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53. How will you convert the following - Ethanoic acid into methanamine . Write the chemical equations involved.



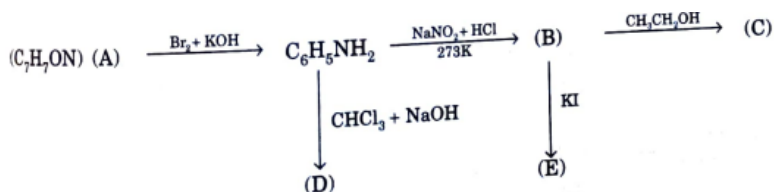
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54. How will you convert the following - Aniline into N-phenylethanamide. Write the chemical equations involved.



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55. An aromatic compound 'A' of molecular formula  $C_7H_7ON$  undergoes a series of reactions as shown below. Write the structures of A, B, C, D and E in the following reactions :



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56. Write the main products when benzene diazonium chloride ( $C_6H_5N_2^+ Cl^-$ ) reacts with the following:  $CuCN/KCN$ .

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57. Write the main products when benzene diazonium chloride ( $C_6H_5N_2^+ Cl^-$ ) reacts with the following:  $H_2O$

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58. Write the main products when benzene diazonium chloride ( $C_6H_5N_2^+ Cl^-$ ) reacts with the following:  $CH_3CH_2OH$

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59. Write the reaction of benzene diazonium chloride with :

*Copper powder / HCl*



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**60.** How will you convert

Propionamide-to ethylamine.



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**61.** How will you convert aniline into phenol ?



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**62.** How will you convert p-toluidine into 2-bromo-4-methylaniline.



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**63.** How will you convert :

Aniline into a acetanilide



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64. How will you convert aniline to benzene ?



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65. How will you convert aniline to bromobenzene.



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66. How will you convert :

Aniline into benzonitrile



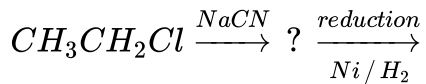
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67. How will you convert methylamine to ethylamine ?



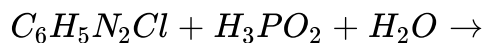
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68. Complete the following chemical equations :



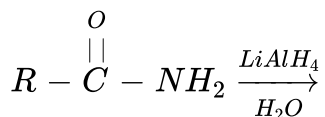
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69. Complete the following chemical equations :



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70. Complete the following equations :



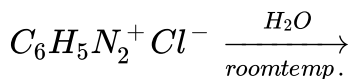
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71. Complete the following chemical equations :



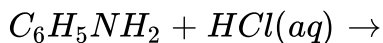
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72. Complete the following chemical equations :



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73. Complete the following chemical equations :



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74. Starting from toluene prepare o-chlorotoluene.

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75. Starting from toluene prepare m-chlorotoluene.

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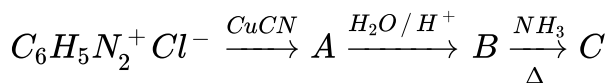
76. Starting from toluene prepare p-iodotoluene.

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77. Starting from toluene prepare p-cyanobenzoic acid.

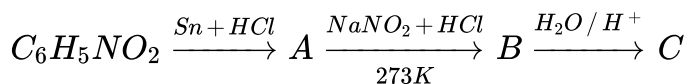
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78. Give the structures of A, B and C in the following reactions :



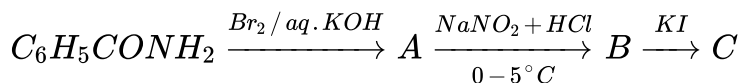
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79. Give the structures of A, B and C in the following reactions :



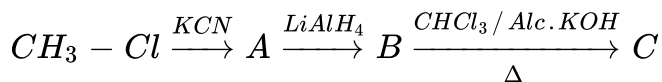
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80. Write the structures of A, B and C in the following :



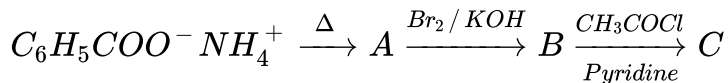
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81. Write the structures of A, B and C in the following :



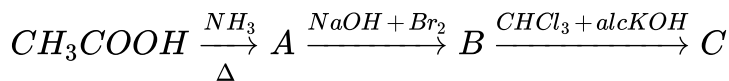
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82. Write the structures of A, B and C in the following reaction :



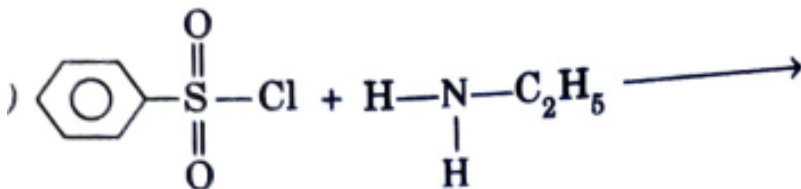
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83. Give the structures of A, B and C in the following reactions



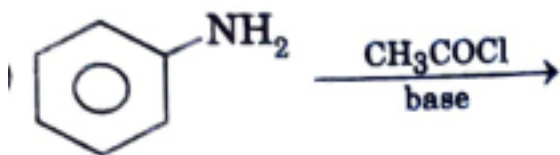
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84. Write the products of the following reaction :



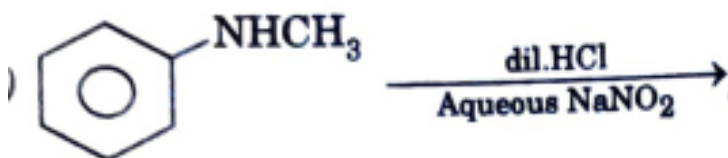
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85. Write the products of the following reaction :



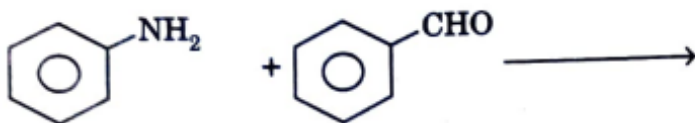
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86. Write the products of the following reaction :



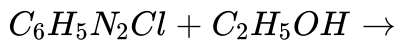
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87. Write the products of the following reaction :



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88. Write the products of the following reaction :



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89. How will you convert benzene into aniline ?

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90. How will you convert benzoic acid to aniline?

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91. Why methyl amine has lower boiling point than methanol.

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92. Why Methyl amine is stronger base than ammonia ?

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93. Aniline dissolve in aqueous HCl. Why?

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94. Why is it difficult to prepare pure amines by Hofmann's ammonolysis?

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95. Methylamine reacts with  $HNO_2$  to form

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96. Write two uses of phosgene?

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97. Although boron trifluoride adds on trimethylamine but it does not add on triphenylamine. Explain.

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98. Why does silver chloride dissolve in methylamine solution ?

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99. Why does the reactivity of  $NH_2$  get reduced in acetanilide ?

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100. Although trimethyl amine and n-propylamine have the same molecular mass, the former boils at a lower temperature (276 K) than the latter (322 K). Why ?

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101. Sulphanilic acid is soluble in dil. NaOH but not in dil. HCl. Explain.

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102. Glycine exists as  $H_3N^+CH_2COO^-$ , zwitter ion. Why?

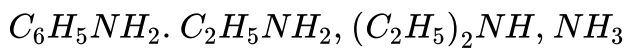
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103.  $3^\circ$  amines do not undergo acylation why ?

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**104.** Arrange the following in decreasing order of their basic strength in aqueous solution.



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**105.** Give an appropriate answer for the following statement- An alloy is made up of Cr, C and Fe. What is the name of that alloy?



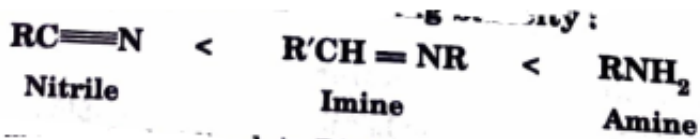
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**106.** Give a chemical test to distinguish between aniline and N-methyl aniline.



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107. Account for the following order of increasing basicity :



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108. Why do amines react as nucleophiles ?

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109. Aniline does not undergo Friedel-Crafts reaction. Explain.

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110. Explain ortho and para hydrogens.

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**111.** Name the respective mineral nutrient element of plants that:

Is needed in the synthesis of auxins.

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**112.** Why aromatic amines cannot be prepared by Gabriel phthalimide synthesis?

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**113.** Write a chemical reaction in which the iodide ion replaces the diazonium group in a diazonium salt.

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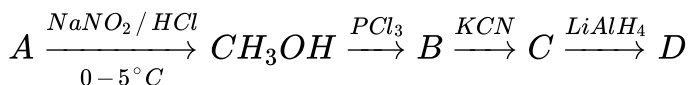
**114.** Give an appropriate answer of the following question- An alloy is made up of mixture of Nickel, iron, Chromium, Manganese metals. What is the name of that alloy?

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**115.** Arrange the following metals in the increasing order of reactivity.

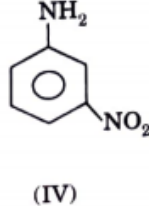
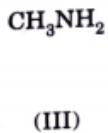
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**116.** Identify A, B, C and D in the following conversions:



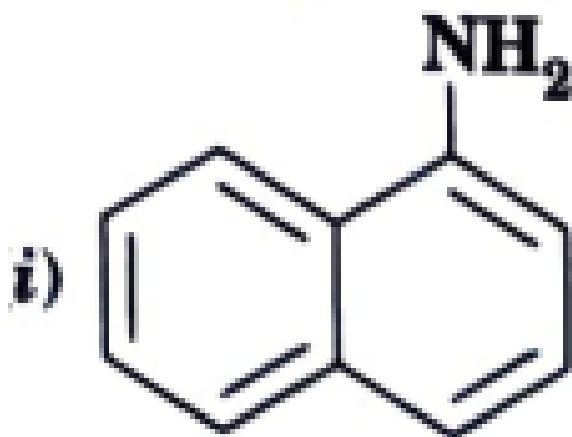
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**117.** Arrange the following compounds in the decreasing order of basicity :



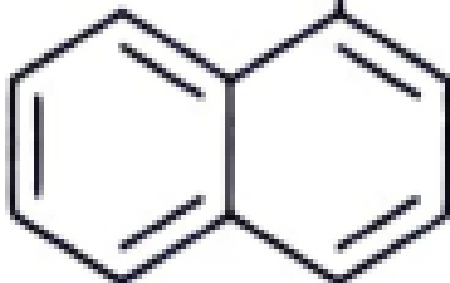
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118. Classify the following amines as primary, secondary and tertiary :



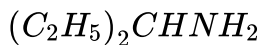
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119. Classify the following amines as primary, secondary and tertiary :



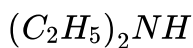
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120. Classify the following amines as primary, secondary and tertiary :



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121. Classify the following amines as primary, secondary and tertiary :





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122. Write structures of different isomeric amines corresponding to the molecular formula,  $C_4H_{11}N$ .



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123. Write IUPAC names of all the structural isomers  $C_5H_{10}$



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124. Give an appropriate answer of the statement- An alloy is made up of iron, aluminium, nickel and cobalt. What is the name and uses of that alloy?



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125. How will you convert benzene into aniline ?

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126. How will you convert Benzene into N, N-dimethylaniline?

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127. How will you convert  $Cl - (CH_2)_6 - Cl$  into hexan-1,6-diamine ?

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128. Arrange the following in increasing order of their basic strength :

$C_2H_5NH_2$ ,  $C_6H_6NH_2$ ,  $NH_3$ ,  $C_6H_5CH_2NH_2$  and  $(C_2H_5)_2NH$

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129. Arrange the following in the increasing order of their basic strengths,  $CH_3NH_2$ ,  $(CH_3)_2NH$ ,  $(CH_3)_3N$ ,  $NH_3$  in gaseous phase

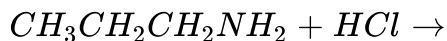
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130. Arrange the following in the increasing order of their basic strengths,  $CH_3NH_2$ ,  $(CH_3)_2NH$ ,  $(CH_3)_3N$ ,  $NH_3$  in gaseous phase

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131. Complete the following acid-base reactions and name the products

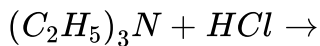
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132. Complete the following acid-base reactions and name the products

:



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**133.** Write reactions of the final alkylation product of aniline with excess of methyl iodide in the presence of sodium carbonate solution.

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**134.** Write chemical reaction of aniline with benzoyl chloride and write name of the product obtained.

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**135.** Write structures of different isomers corresponding to the molecular formula,  $C_3H_9N$ . Write IUPAC names of the isomers which will liberate nitrogen gas on treatment with nitrous acid.

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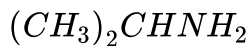
**136.** Convert : 3-Methylaniline into 3-nitrotoluence

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**137.** Convert : Aniline into 1,3,5-tribromobenzene

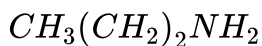
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**138.** Write IUPAC names of the following compounds and classify them into primary, secondary and tertiary amines.



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**139.** Write IUPAC names of the following compounds and classify them into primary, secondary and tertiary amines.



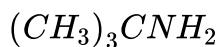
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**140.** Write IUPAC names of the following compound and classify it into primary, secondary and tertiary amines.



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**141.** Write IUPAC names of the following compounds and classify them into primary, secondary and tertiary amines.



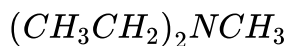
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**142.** Write IUPAC names of the following compounds and classify them into primary, secondary and tertiary amines.



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**143.** Write IUPAC names of the following compounds and classify them into primary, secondary and tertiary amines.



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**144.** Write IUPAC names of the following compounds and classify them into primary, secondary and tertiary amines.



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**145.** Give one chemical test to distinguish between the following pairs of compounds.

Methylamine and dimethylamine

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**146.** Give one chemical test to distinguish between the following pairs of compounds.

Secondary and tertiary amines

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**147.** Give one chemical test to distinguish between the following pairs of compounds.

Ethylamine and aniline

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**148.** Give one chemical test to distinguish between the following pairs of compounds.

Aniline and benzylamine

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**149.** Give one chemical test to distinguish between the following pairs of compounds.

Aniline and N-methylaniline

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**150.**  $pK_b$  of aniline is more than that of metltylamine. Explain

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**151.** Ethylamine is soluble in water whereas the aniline is not. Why?

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**152.** Methylamine in water reacts with ferric chloride to precipitate ferric hydroxide. Explain.

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**153.** Nitration of aniline gives a mixture of o- and p-nitroanilines.

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**154.** Aniline does not undergo Friedel-Crafts reaction. Explain.

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**155.** Account for the following : Diazonium salts of aromatic amines are more stable than those of aliphatic amines.





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156. Gabriel phthalimide synthesis is used for the preparation of aromatic primary amines.



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157. Arrange the following : In decreasing order of the  $pK_b$  values:

$C_2H_5NH_2$ ,  $C_6H_5NHCH_3$ ,  $(C_2H_5)_2NH$  and  $C_6H_5NH_2$



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158. Arrange the following : In decreasing order of basic strength :

$C_6H_5N(CH_3)_2$ ,  $(C_2H_5)_2NH$  and  $CH_3NH_2$



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**159.** Arrange the following : Increasing order of basic strength : Aniline, p-nitroaniline and p-toluidine.

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**160.** Arrange the following : Increasing order of basic strength :  
 $C_6H_5NH_2$ ,  $C_6H_5NHCH_3$ ,  $C_6H_5CH_2NH_2$

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**161.** Arrange the following : Decreasing order of basic strength in gas phase :  $C_2H_5NH_2$ ,  $(C_2H_5)_2NH$ ,  $(C_2H_5)_3N$  and  $NH_3$

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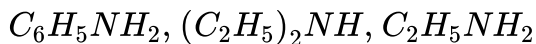
**162.** Arrange in increasing order of boiling points :

$C_2H_5OH$ ,  $(CH_3)_2NH$ ,  $C_2H_5NH_2$



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163. Arrange in increasing order of solubility in water :



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164. How will you convert Ethanoic acid into methanamine ?



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165. How will you convert Hexanenitrile into 1-aminopentane?



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166. How will you convert Methanol to ethanoic acid ?



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**167.** How will you convert Ethanamine into methanamine ?

 [Watch Video Solution](#)

**168.** How will you convert formic acid into formaldehyde ?

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**169.** How will you convert

Methanamine to ethanamine.

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**170.** How will you convert Nitromethane into dimethylamine ?

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171. How will you convert Propanoic acid into ethanoic acid ?

 [Watch Video Solution](#)

172. Convert acetic acid into acetone

 [Watch Video Solution](#)

173. Write short notes on the following : Carbylamine reaction.

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174. Write short notes on the following : Diazotisation.

 [Watch Video Solution](#)

**175.** Write short notes on the following : Hoffmann's bromamide reaction.

 [Watch Video Solution](#)

**176.** Write short notes on the following : Coupling reaction

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**177.** Write short notes on the following : Ammonolysis .

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**178.** Write short notes on the following -

Retina

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**179.** Write short notes on the following : Gabriel phthalimide synthesis.

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**180.** How will you convert

Nitrobenzene to benzoic acid

 [Watch Video Solution](#)

**181.** Accomplish the following conversions.

Benzene to m-bromophenol.

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**182.** How will you convert benzoic acid to aniline?

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**183.** Accomplish the following conversions.

Aniline to 2,4,6-tribromofluorobenzene.



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**184.** Accomplish the following conversions.

Benzyl chloride to 2-phenylethanamine .



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**185.** Accomplish the following conversions.

Chlorobenzene to p-chloroaniline.



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**186.** Accomplish the following conversions.

Aniline to 2,4,6-tribromofluorobenzene.





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187. How will you convert

Benzamide to toluene



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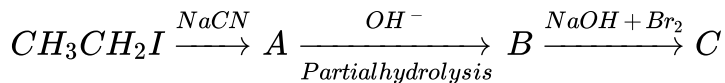
188. Accomplish the following conversions ?

Aniline to benzyl alcohol.



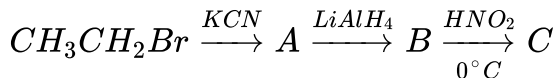
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189. Give the structures of A, B and C in the following reactions



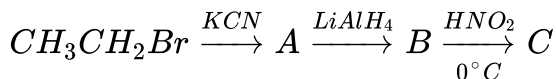
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190. Give the structures of A, B and C in the following reactions



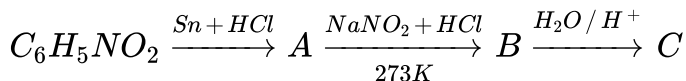
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191. Give the structures of A, B and C in the following reactions



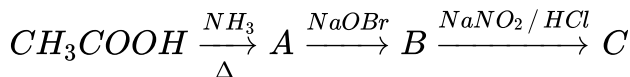
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192. Give the structures of A, B and C in the following reactions :



 [Watch Video Solution](#)

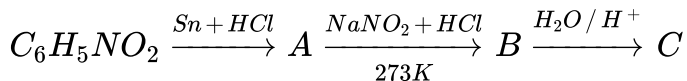
193. Give the structures of A, B and C in the following reactions





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194. Give the structures of A, B and C in the following reactions :



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195. A given nitrogen-containing aromatic compound 'A' reacts with Sn/HCl, followed by  $HNO_2$  to give an unstable compound 'B'. 'B', on treatment with phenol, forms a beautiful coloured compound 'C' with the molecular formula  $C_{12}H_{10}N_2O$ . The structure of compound 'A' is



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196. Complete the following reactions :



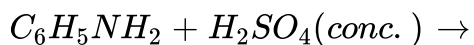
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**197.** Complete the following reactions :



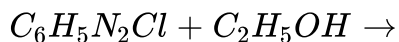
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**198.** Complete the following reactions :



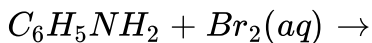
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**199.** Complete the following reactions :



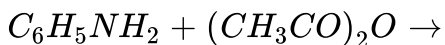
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**200.** Complete the following equations :



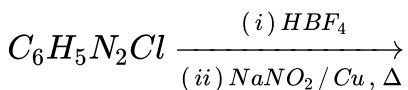
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**201.** Complete the following reactions :



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**202.** Complete the following reactions :



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**203.** Aromatic primary amines cannot be prepared by Gabriel phthalimide synthesis.



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**204.** How do aromatic and aliphatic primary amines react with nitrous acid ?



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**205.** Why are amines less acidic than alcohols ?



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**206.** Why do primary amines have higher boiling point than tertiary amines?



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**207.** Alkyl amines are stronger bases than aryl amines. Justify.



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208. What is the role of  $HNO_3$  in the nitrating mixture used for nitration of benzene?



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209. Why is  $NH_2$  group of aniline acetylated before carrying out nitration?



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210. What is the product when  $C_6H_5CH_2NH_2$  reacts with  $HNO_2$ ?



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211. What is the best reagent to convert nitrile to primary amine?



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**212.** An alloy is made up of two metals -Manganese and Iron. What is the name and uses of that alloy?



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**213.**

What is Hinsberg's reagent ?



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**214.** Why is benzene diazonium chloride not stored and is used immediately after its preparation?



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215. Why does the reactivity of  $NH_2$  get reduced in acetanilide ?

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216. Explain why  $MeNH_2$  is stronger base than MeOH?

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217. What is the role of pyridine in the acylation reaction of amines?

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218. Under what reaction conditions (acidic/basic), the coupling reaction of aryldiazonium chloride with aniline is carried out?

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219. Predict the product of reaction of aniline with bromine in non-polar solvent such as  $CS_2$ .

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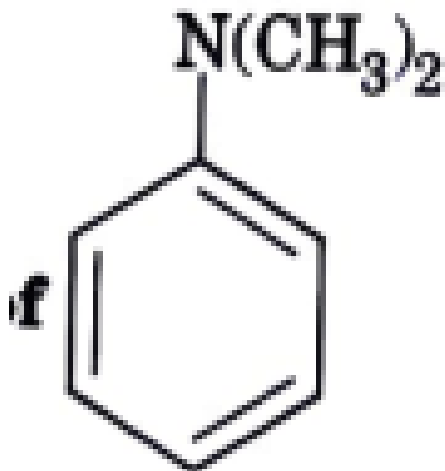
220. Arrange the following compounds in increasing order of dipole moment.  $CH_3CH_2CH_3$ ,  $CH_3CH_2NH_2$ ,  $CH_3CH_2OH$ .

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221. What is the structure and IUPAC name of the compound, allyl amine?

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222. Write down the IUPAC name of



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223. A compound Z with molecular formula  $C_3H_9N$  reacts with  $C_6H_5SO_2Cl$  to give a solid, insoluble in alkali. Identify Z.

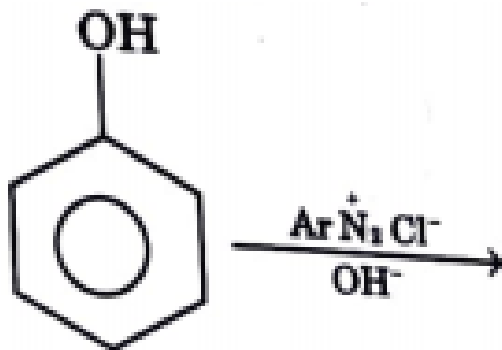
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224. A primary amine,  $RNH_2$  can be reacted with  $CH_3 - X$  to get secondary amine,  $R - NHCH_3$  but the only disadvantage is that  $3^\circ$

amine and quaternary ammonium salts are also obtained as side products. Can you suggest a method where  $RNH_2$  forms only 2° amine?

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225. Complete the following reaction.

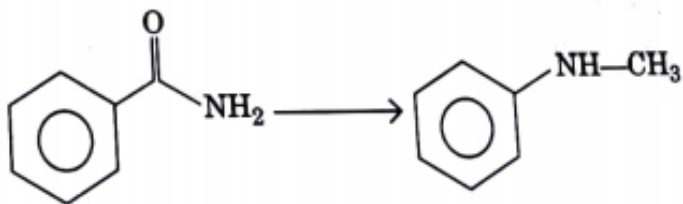


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226. Aniline dissolve in aqueous HCl. Why?

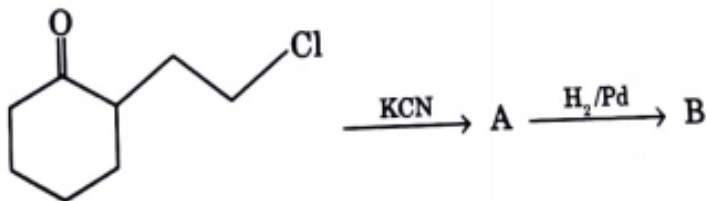
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227. Suggest a route by which the following conversion can be accomplished.



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228. Identify A and B in the following reaction.



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229. How will you carry out the following conversions?

toluene  $\rightarrow$  p-toluidine.



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**230.** How will you carry out the following conversions?

p-toluidine diazonium chloride  $\rightarrow$  p-toluic acid.



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**231.** Convert nitrobenzene to acetanilide.



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**232.** Write following conversions : acetanilide  $\rightarrow$  p-nitroaniline



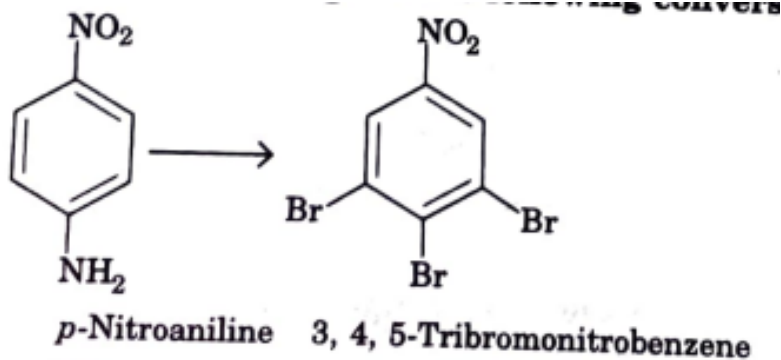
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**233.** A solution contains 1 g mol. each of p-toluene diazonium chloride and p-nitrophenyl diazonium chloride. To this 1 g mol. of alkaline

solution of phenol is added. Predict the major product. Explain your answer.

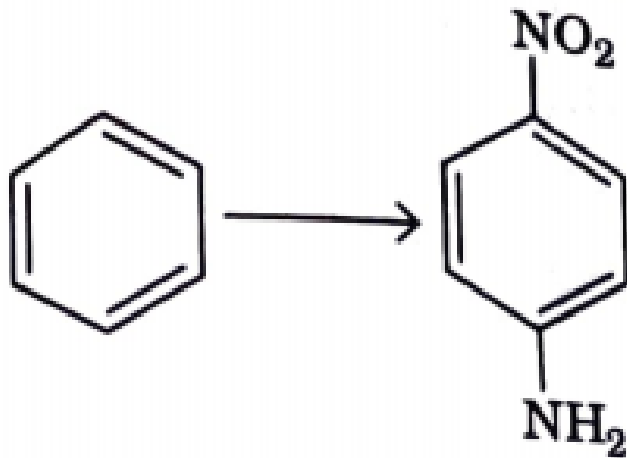
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234. How will you bring out the following conversion?



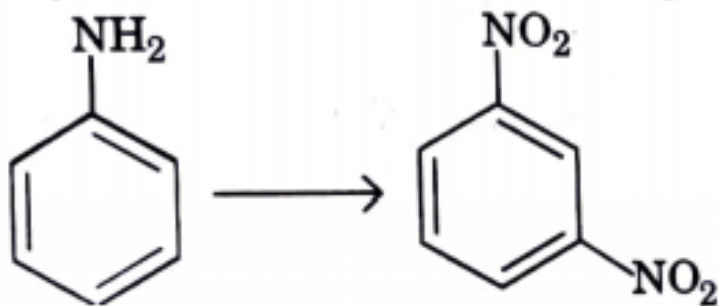
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235. How will you carry out the following conversion?



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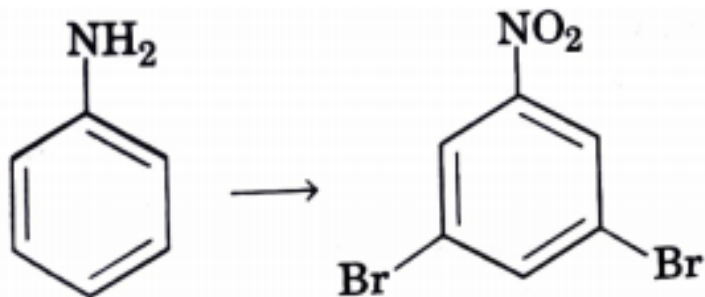
236. How will you carry out the following conversion?



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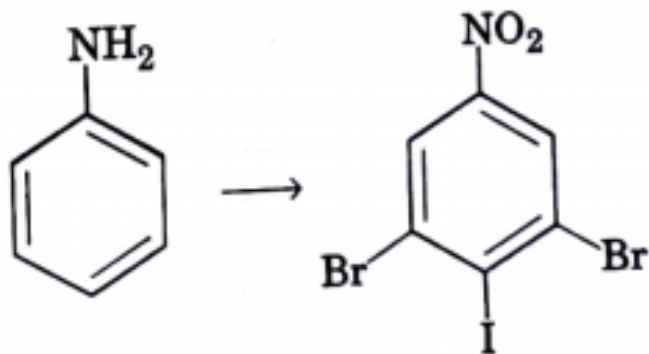


237. How will you carry out the following conversion?



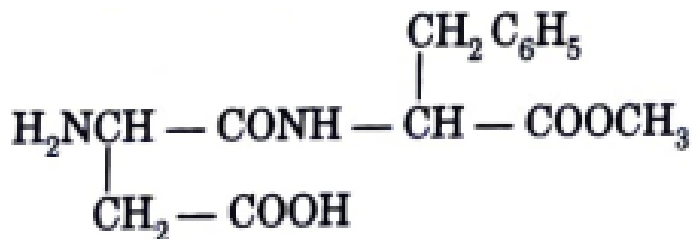
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238. How will you carry out the following conversion?



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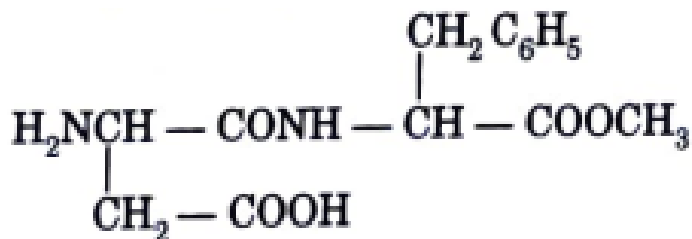
239. Aspartame, an artificial sweetener, is a peptide and has the following structure :



Identify the four functional groups.

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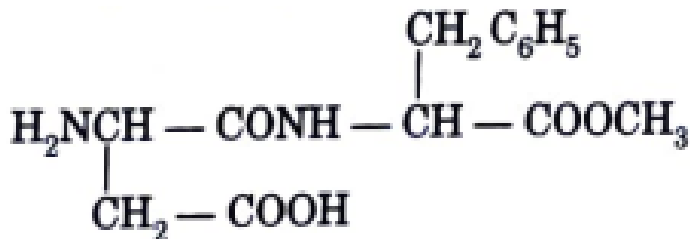
240. Aspartame, an artificial sweetener, is a peptide and has the following structure :



Write the zwitter ionic structure.

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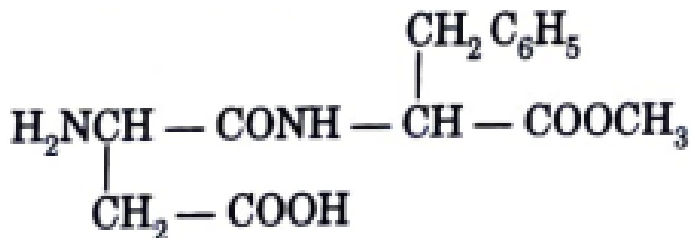
**241.** Aspartame, an artificial sweetener, is a peptide and has the following structure :



Write the structures of the amino acids obtained from the hydrolysis of aspartame.

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**242.** Aspartame, an artificial sweetener, is a peptide and has the following structure :



Which of the two amino acids is more hydrophobic ?

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243. tert-Butylamine cannot be prepared by action of ammonia on tert-butyl bromide. Why ? Explain.

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244. Fill in the blanks- The commercial name of Sodium chloride is \_\_\_\_\_.

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245. Why are aryl diazonium ion more stable than alkyl diazonium ion ?

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**246.** p-methoxyaniline is a stronger base than aniline but p-nitroaniline is a weaker base than aniline. Explain.

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**247.** Can we prepare aniline by Gabriel phthalimide reaction ?

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**248.** Sulphanilic acid is insoluble in water and organic solvents. Explain.

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**249.** Why is an amide more acidic than amine ?

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250. Which is more basic  $PhNH_2$  or  $Ph_2NH$ ?

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251. An optically inactive compound (A) having molecular formula  $C_4H_{11}N$  on treatment with  $HNO_2$  gave an alcohol (B). (B) on heating at 440 K gave an alkene (C). (C) on treatment with HBr gave an optically active compound (D) having the molecular formula  $C_4H_9Br$ . Identify A, B, C and D and write down their structural formulae. Also write equations involved.

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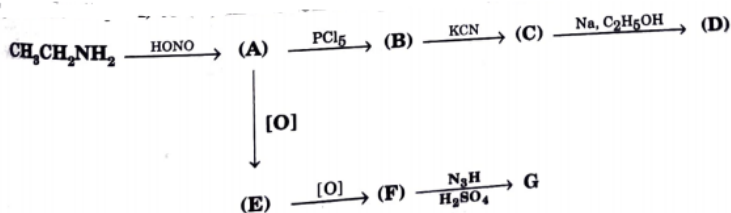
252. Aniline on reaction with acetyl chloride gives

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253. An organic compound A ( $C_3H_5N$ ) on boiling with alkali gives ammonia and sodium salt of an acid B ( $C_3H_6O_2$ ). Its reduction gives C ( $C_3H_9N$ ) which with nitrous acid gives D ( $C_3H_8O$ ). Give the structural formulae of A, B, C and D.

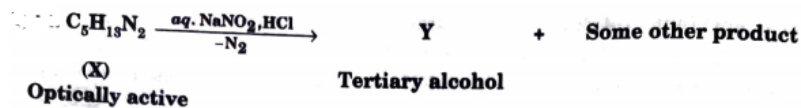
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254. Identify (A) to (G) in the following reaction scheme :



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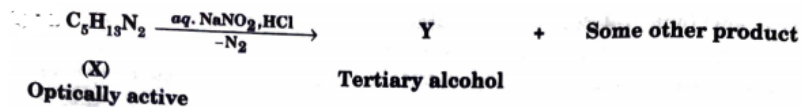
255.



Identify (X) and (Y) ?

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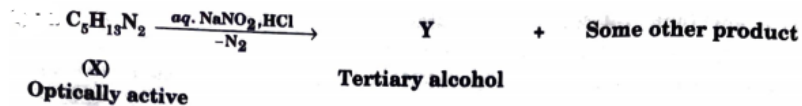
256.



Is (Y) optically active ?

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257.



Give structures of intermediates (if any) in the formation of (X) to (Y) ?

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**258.** Starting with benzene and using suitable reagents, outline the synthesis of m-bromochlorobenzene .

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**259.** Starting with benzene and using suitable reagents, outline the synthesis of p-dinitrobenzene.

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**260.** Starting with benzene and using suitable reagents, outline the synthesis of m-bromiodobenzene.

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1. T/F Amines act as Lewis bases

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2. In aqueous solution, trimethylamine is more basic than methylamine.

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3. Say True or False : p-Bromoaniline is formed when aniline is treated with bromine water.

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4. Say True or False : Azo dye test can be used to distinguish aromatic primary amines from aliphatic primary amines.

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5. Say True or False : Catalytic reduction of carbylamines always gives primary amines.



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6. Say True or False : N-Methylbenzamide on heating with aqueous solution of NaOH and  $Br_2$  gives N-methylaniline.



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7. Say True or False : Secondary amines evolve  $N_2$  with nitrous acid.



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8. Acetanilide is less basic than aniline.



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9. Gabriel phthalimide synthesis is used for the preparation of aromatic primary amines.

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10. Say True or False : Tertiary amines dissolve in nitrous acid to form corresponding salts.

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11. Complete the missing link : Aniline on heating with fuming  $H_2SO_4$  gives .....

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12. Complete the missing link : The IUPAC name of lowest molecular mass tertiary amine is .....



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**13.** An alloy is made up of two metals- Lead and tin. What is the name of that metal and what are its uses?



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**14.** Complete the missing link : Carbylamine test is used to test ..... amines.



[Watch Video Solution](#)

**15.** Complete the missing link : Libermann nitroso reaction is used for the detection of..... amines.



[Watch Video Solution](#)

16. Hinsberg reagent is

 [Watch Video Solution](#)

17. Complete the missing link : Phenyl isocyanide on reduction with hydrogen and Raney nickel gives .....

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18. An alloy is made up of two metals- copper and zinc. What is the name of that alloy and what are its uses?

 [Watch Video Solution](#)

19. An alloy is made of two metals- copper and tin in which the proportion of copper is higher than tin. What is the name of that alloy and what are its uses?

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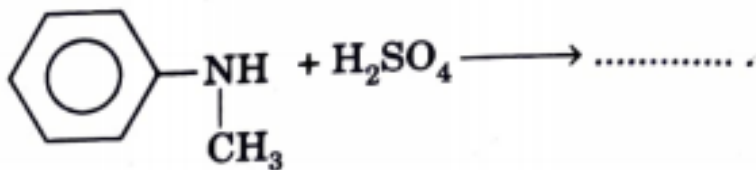
20. Explain the following- An alloy is made up of Copper and Aluminium metals in which the proportion of Copper is higher than aluminium. Name that alloy?

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21. Complete the missing link :  $CH_3CH_2CONH_2 + \xrightarrow[\text{ether}]{LiAlH_4} \dots\dots\dots$

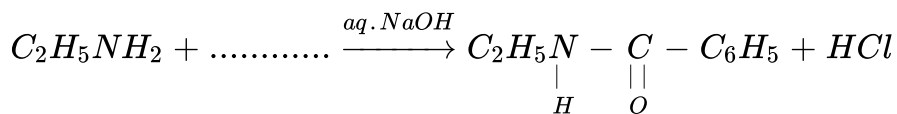
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22. Complete the missing link :



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23. Complete the missing link :



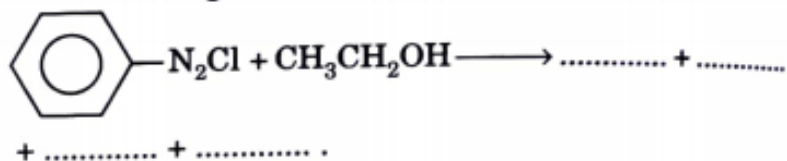
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24. Complete the missing link :  $R_2NH + R - \underset{\substack{|| \\ O}}{C} - Cl \rightarrow \dots +$

$\dots$

 Watch Video Solution

25. Complete the missing link :



 Watch Video Solution



26. An alloy is made up of two metals and one non-metal- copper, tin and phosphorus. What is the name of that alloy?

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27. Choose the correct alternative: Amino group is ortho-para/meta director.

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28. Choose the correct alternative: Primary/tertiary amines donot react with Hinsberg's reagent.

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29. Choose the correct alternative: Out of aniline and benzylamine, aniline/benzylamine gives azo dye test.



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30. An alloy is made up of three metals- zinc, tin and copper which is used to make arms. What is the name of that alloy?



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31. Explain the given statement- An alloy is made up of two metals- copper and nickle in which copper has high proportion than nickle. Name that alloy?



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32. What is the name of that alloy which gives better resistance to corrosion and is used in marine engineering, making of water pumps, valves etc?



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**33.** Choose the correct alternative: Aniline is less/more basic than ethylamine.

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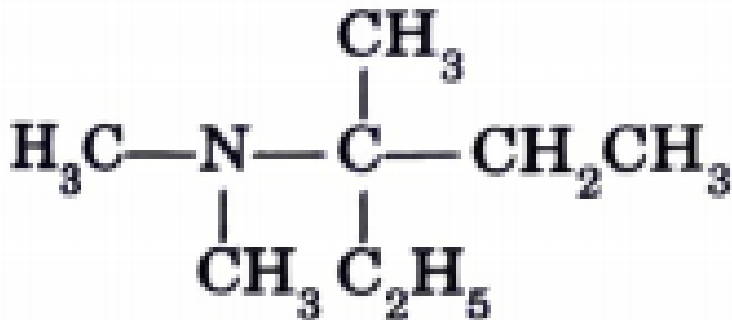
**34.** Three metals- copper, zinc and nickle are used to make an alloy which is used in making utensils and idols. Name that alloy?

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**35.** Two metals are mixed together in definite proportions to make an alloy which is used in aviation engineering. Name that alloy?

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36. Write the IUPAC name of the following :



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37. Fill in the blanks- \_\_\_\_\_ is the chemical compound used as a preservative in pickles and in cooking food.

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38. How will you convert.

Aniline into chlorobenzene.

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39. How will you convert aniline into benzoic acid ?

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40. What is the name of the reaction when benzene diazonium chloride is treated with cuprous chloride ?

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41. How is iodobenzene obtained from benzene diazonium chloride ?

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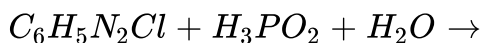
42. 40 cm<sup>3</sup> of CH<sub>4</sub> reacts with Cl<sub>2</sub> to form CH<sub>2</sub>Cl<sub>2</sub> and HCl . calculate the volume of HCl gas formed.

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43. Write a chemical reaction to prepare an azo dye from benzene diazonium chloride.

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44. Complete the following reactions :



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45. What happens when Aniline reacts with  $Br_2$  water.

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46. Write the reaction of aniline with conc.  $H_2SO_4$  .

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47.  $pK_b$  of aniline is more than that of methylamine. Explain

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48. How will you convert aniline to phenylisocyanide?

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49. Arrange the following : Increasing order of basic strength : Aniline, p-nitroaniline and p-toluidine.

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50. Arrange the following in the increasing order of basicity:



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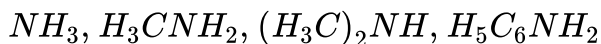
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51. Arrange the following compounds in an increasing order of basic strengths in their aqueous solutions :



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52. The strongest base among the following compounds is



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53. Complete the reaction :  $CH_3 - CH_2C \equiv N \xrightarrow{Na / C_2H_5OH} ?$

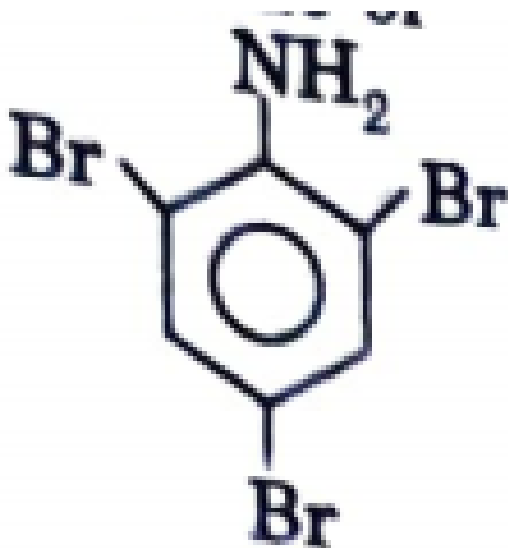
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54. What happens when benzene diazonium chloride solution is added slowly to boiling dil. mineral acid .

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55. Write the IUPAC name of :



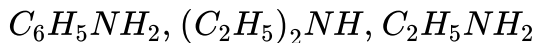
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56. Why do amines react as nucleophiles ?



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57. Arrange in increasing order of solubility in water :



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58. Give one chemical test to distinguish between the following pairs of compounds.

Ethylamine and aniline



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59. Arrange the following : Increasing order of basic strength :



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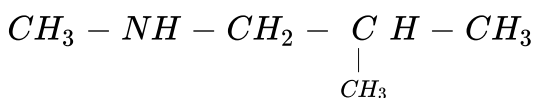
60. Write the structure of n-methylethanamine.

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61. The Conversion of primary aromatic amines into diazonium salts is known as .....

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62. Write the IUPAC name of the compound:



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63. When a primary amine reacts with chloroform in ethanolic KOH, then the product is...

A. isocyanide

B. aldehyde

C. cyanide

D. alcohol

**Answer:**

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**64.** Which of the following does not react with Hinsberg reagent?

A.  $C_2H_5NH_2$

B.  $(C_2H_5)_2NH$

C.  $(C_2H_5)_3N$

D.  $CH_3NH_2$

**Answer:**

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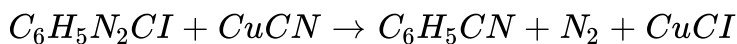
65. Which of the following will not do coupling reaction with benzene diazonium chloride?

- A. Aniline
- B. Phenol
- C. 2-naphthol
- D. Benzyl alcohol

**Answer:**

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66. Write the name of reaction



- A. Balz-Schiemann

B. Gattermann reaction

C. Simonini reaction

D. Sandmeyer reaction

**Answer:**

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67. Which of the following is most basic ?

A. Benzylamine

B. Aniline

C. Acetanilide

D. p-nitroaniline

**Answer:**

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68. Which one is strongest basic ?

A. Ammonia

B. Methylamine

C. Ethylamin

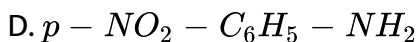
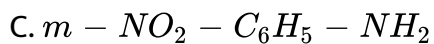
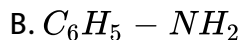
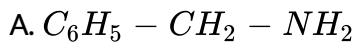
D. None of these

Answer:



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69. The strongest base is :



**Answer:**

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**70.** Benzylamine react with nitrous acid to form.

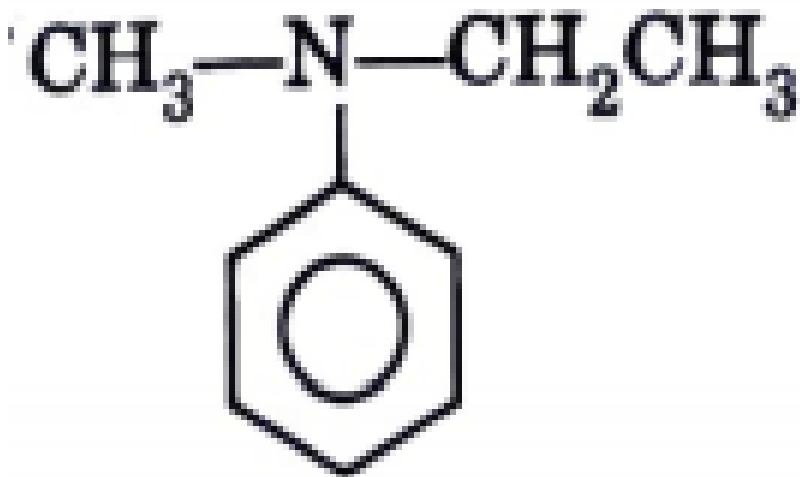
- A. Azobenzene
- B. Benzene
- C. Benzyl alcohol
- D. Phenol

**Answer:**

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71. The IUPAC name of



is

- A. N-Ethyl- N-methylbenzenamine
- B. N-Methyl- N-ethylbenzenamine
- C. N, N-Ethyl methyl benzenamine
- D. N,N-Methyl ethyl benzenamine

**Answer:**

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72. Gabriel phthalimide reaction is used for the preparation of

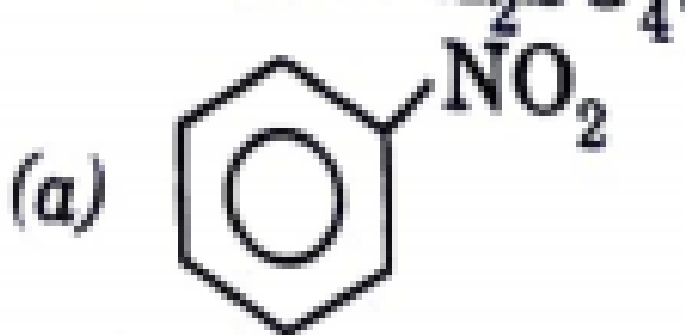
- A.  $1^\circ$  amine
- B.  $2^\circ$  amine
- C.  $3^\circ$  amine
- D. all of these

**Answer:**



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73. Which of the following compound will be formed when aniline reacts with  $H_2SO_4$  ?.



A.



B.



C.



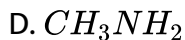
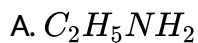
D.

.....

**Answer:**

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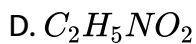
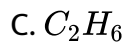
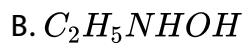
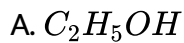
74. Which one of the following is most basic ?



**Answer:**

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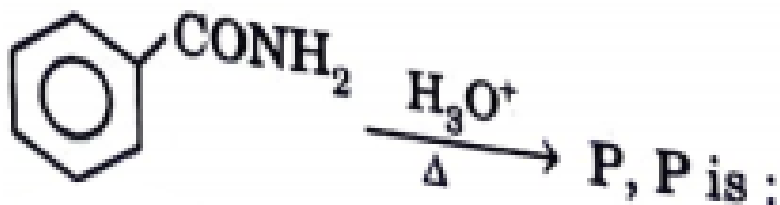
75.  $C_2H_5NH_2 + HNO_2 \rightarrow A$ , A is :



Answer:

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76.



A. Benzoic acid

B. Aniline

C. Benzonitrile

D. Benzylamine

**Answer:**



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77. Which among the following compound will give offensive compound when heated with chloroform and alcoholic potassium hydroxide ?

A.  $CH_3CN$

B.  $(CH_3)_3N$

C.  $C_2H_5NH_2$

D.  $C_6H_5CONH_2$

**Answer:**



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78.  $3^\circ$  amines do not undergo acylation why?



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79. Explain the following :  $CH_3NH_2$  is stronger base than ammonia.



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80. Why is it difficult to prepare pure amines by Hofmann's ammonolysis?



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81. An amine (A)  $C_3H_9N$  reacts with nitrous acid at  $0$  to  $5^\circ C$  to give an oily layer separated from reaction mixture. Write the structure of A and its reaction with acetyl chloride.



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82. An amine (A)  $C_3H_9N$  reacts with nitrous acid at 0 to  $5^\circ C$  to give an oily layer separated from reaction mixture. Write the structure of A and its reaction with methyl magnesium bromide.



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83. Why have primary amines higher boiling point than tertiary amines?



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84. How can you find out whether a given amine is a primary amine ?

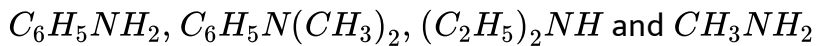
Write the chemical reaction involved in the test you perform.



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85. In the following cases rearrange the compounds as directed: In an increasing order of basic strength :

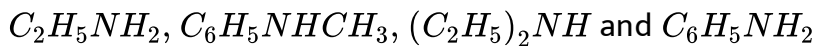


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86. Arrange the following : Increasing order of basic strength : Aniline, p-nitroaniline and p-toluidine.

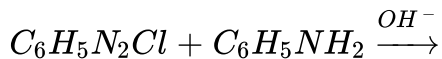
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87. Arrange the following : In decreasing order of the  $pK_b$  values:



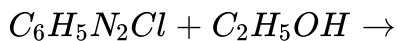
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88. Complete the following chemical equations :



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89. Complete the following reactions :



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90. Complete the following chemical equations :



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91. Ethylamine is soluble in water but aniline is not soluble in water.

Why?

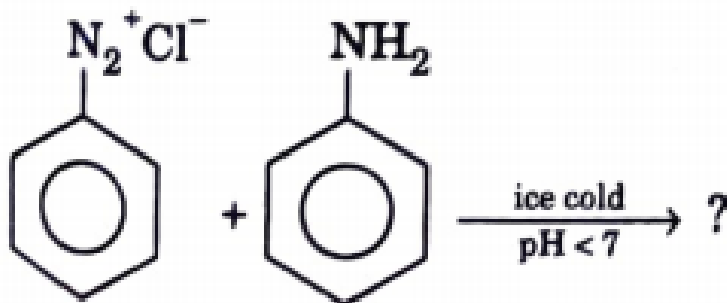
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92. How will you convert :

Aniline into a acetanilide

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93. Complete the reaction :



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94. Explain why an alkylamine is more basic than ammonia?

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95. How would you convert : Aniline to nitrobenzene.

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96. How would you convert : Aniline to iodobenzene .

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97. Why methyl amine has lower boiling point than methanol.

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**98.** How does benzene diazonium chloride react with :

Water

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**99.** How does benzene diazonium chloride react with :

$Cu_2Cl_2 / HCl$

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**100.** How does benzene diazonium chloride react with :

Phenol

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**101.** How does benzene diazonium chloride react with:

$Cu_2Br_2 / HBr$



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102. Why Methyl amine is stronger base than ammonia ?



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103. Write chemical test to distinguish between  $CH_3NH_2$  and  $(CH_3)_2NH$ .



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104. Fill in the blanks :  $CH_3CH_2I \xrightarrow{NaCN} ? \xrightarrow[hydrolysis]{OH^-, partial} ?$



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105. Fill in the blanks :  $C_6H_5N_2Cl \xrightarrow{CuCN} ? \xrightarrow[H^+]{H_2O} ?$



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**106.** Write chemical equations for the following conversions :  
Nitrobenzene to benzoic acid.

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**107.** Write chemical equations for the following conversions : Benzyl chloride to 2-phenyl ethanamine.

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**108.** Write chemical equations for the following conversions : Aniline to benzoic acid.

 [Watch Video Solution](#)

109. What happens when Aniline reacts with  $Br_2$  water.

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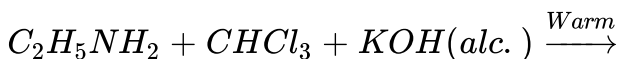
110. What happens when Benzene diazonium chloride is reacted with HCl in the presence of copper.

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111. What happens when Acetamide is reacted with  $LiAlH_4$  in the presence of ether.

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112. Complete the following reactions :



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113. Complete the following reactions :  $C_6H_5N_2^+ Cl^- \xrightarrow{CuCl, HCl}$

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114. Write short notes on Coupling reaction

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115. Explain Mendius reaction.

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116. Write short note on diazotisation reaction.

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**117.** Assertion :Hoffmann bromamide reaction is given by primary amides. Reason : Primary amines are more basic than secondary amines.

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**118.** Convert nitrobenzene into phenol.

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**119.** How will you achieve the synthesis of only 4-bromoaniline from aniline without the production of the trisubstituted aniline.

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**120.** Why do primary amines have higher boiling point than tertiary amines?

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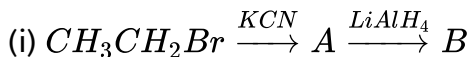
121. Write the products obtained in the nitration of aniline.

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122. What is Carbylamine reaction ? How is it used to distinguish primary amines from secondary and tertiary amines ?

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123. Identify A, B, C and D:



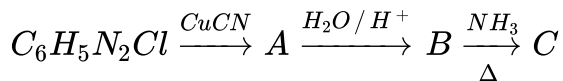
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124. Write one chemical test to distinguish between ethylamine and aniline.



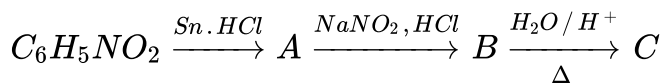
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125. Give the structures of A, B and C in the following reactions



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126. Give the structures of A, B and C in the following reactions :



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127. Write Hinsberg's test to distinguish between 1°, 2° and 3° amines.



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128. What is Hofmann bromamide degradation reaction ?

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129. Write IUPAC names of the following :-  $H_3C - \underset{\substack{| \\ H}}{N} - CH_2 - CH_3$

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130. What is Hinsberg reagent? Between  $CH_3NH_2$  and  $C_6H_5NH_2$  which is more basic?

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131. How will you prepare amines from the following? Write their chemical reactions:  $R - CONH_2$

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**132.** How will you prepare amines from the following? Write their chemical reactions:  $R - X$

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**133.** How will you prepare amines from the following? Write their chemical reactions:  $R - C \equiv N$

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**134.** Discuss the effect of electron donating and electron withdrawing group on basicity of aromatic amines.

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**135.** Write short notes on the following : Carbylamine reaction.

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**136.** Write short notes on the following : Gabriel phthalimide synthesis.

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**137.** How will you convert the following - Nitrobenzene into aniline.

Write the chemical equations involved.

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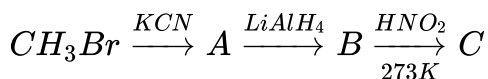
**138.** How will you convert the following : Ethanoic acid into methanamine. Write the chemical equations involved.

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139. How will you convert the following : Aniline into N-phenylethanamide. Write the chemical equations involved.

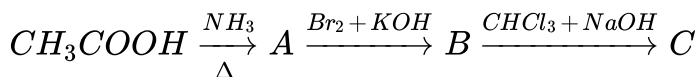
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140. Give the structures of A, B and C in the following reactions :



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141. Give the structures of A, B and C in the following reactions :



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142. Amines are classified as primary , secondary and tertiary. Write the IUPAC name of the following compound :  $NH_2 - (CH_2)_6 - NH_2$





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**143.** Answer the following questions in one word- Which chemical compound is used as a preservative in pickles and is the most common ingredient in cooking food?



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**144.** Amines have higher boiling points than hydrocarbons of comparable molecular masses.



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**145.** Why Methyl amine is stronger base than ammonia ?



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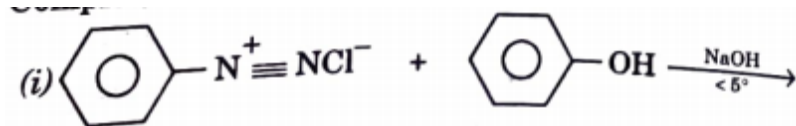
146. What is Hofmann bromamide degradation reaction ?

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147. Secondary amine is stronger base than tertiary amine. Give reason.

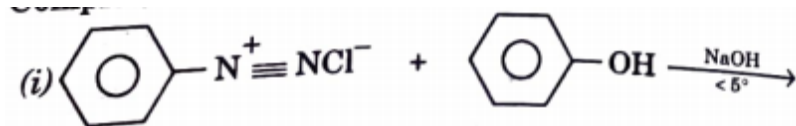
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148. Complete the following reactions:



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149. Complete the following reactions:





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150. Arrange the following compounds in an increasing order of basic strengths in their aqueous solutions :



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151.  $pK_b$  of aniline is more than that of methylamine. Explain



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152. Write short notes on the following : Ammonolysis .



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**153.** Write short notes on the following : Hoffmann's bromamide reaction.

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**154.** Name the chemical compound whose commercial name is common salt?

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**155.** How will you convert aniline into phenol ?

 [Watch Video Solution](#)

**156.** How will you convert ethylamine into ethylisocyanide ?

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**157.** How will you convert

Propionamide-to ethylamine.



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**158.** How will you convert aniline to benzene ?



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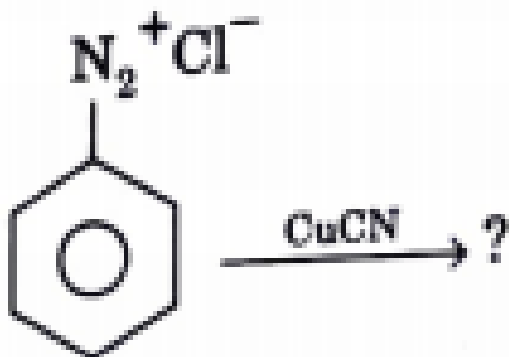
**159.** How will you convert.

Aniline into chlorobenzene.



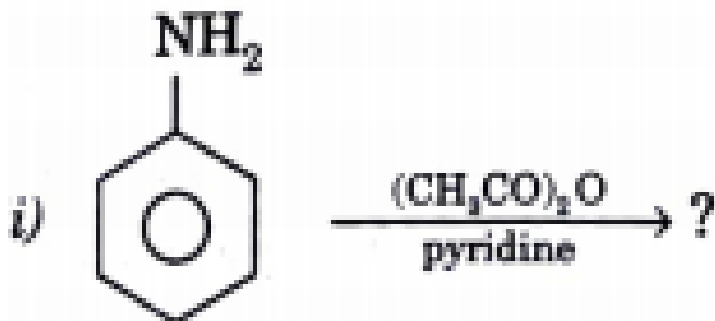
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160. Complete the following reaction :



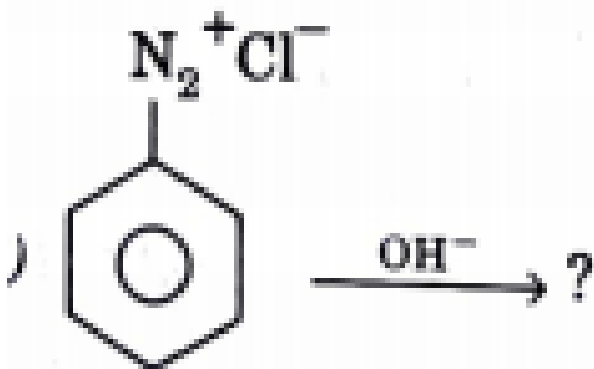
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161. Complete the following reaction :



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162. Complete the following reaction :



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163. Distinguish between primary, secondary and tertiary alcohols by chemical test.

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164. Give reasons for the following:  $\text{C}_2\text{H}_5\text{NH}_2$  is a stronger base as compared to aniline.

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**165.** State whether the statement is true or false- The chemical compound is use in the cooking foods and as a preservative of pickles is called as sodium chloride.



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**166.** What is the chemical formula of Baking soda?



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**167.** Explain the following reactions:

Balz Schiemann reaction.



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**168.** Write the following reactions :

Carbylamine reaction.

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**169.** Write the following reactions :

Diazotisation

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**170.** Account for the correct order of decreasing basicity of ethylamine, 2-amino ethanol, and 3-amino-1-propanol.

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**171.** How will you convert.

Aniline into chlorobenzene.



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172. Write short note on carbylamine reaction.



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173. Write down coupling reaction of amines.



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174. Give a chemical test to distinguish between aniline and N-methyl aniline.



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175. How will you convert benzoic acid to aniline?



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176.  $3^\circ$  amines do not undergo acylation why ?

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177. Write short note on Hoffmann's bromamide reaction. Why is it regarded as Hoffmann degradation reaction?

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178. How will you convert Aniline to benzene-diazonium chloride ?

 [Watch Video Solution](#)

179. Write short note on diazotisation reaction.

 [Watch Video Solution](#)

180. Why aromatic amines cannot be prepared by Gabriel phthalimide synthesis?

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181. How will you convert methylamine to ethylamine ?

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182. Complete the following:  $CH_3OH \xrightarrow{P, I_2} ? \xrightarrow{KCN} ? \xrightarrow[Na]{4H / alc.} ?$

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183. What is the commercial name of Sodium bicarbonate?

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**184.** How will you convert benzene into aniline ?

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**185.** Write short note on Gabriel phthalimide synthesis. Why is it regarded as best method ?

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**186.** Write short note on ammonolysis.

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**187.** Aniline does not undergo Friedel-Crafts reaction. Explain.

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188. Arrange the following compounds in an increasing order of basic strengths in their aqueous solutions :



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189. Complete the following reaction:

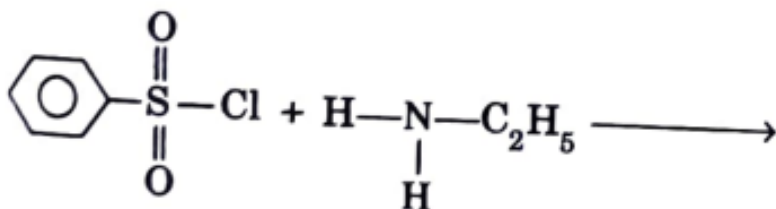


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190. Compare the boiling points of primary, secondary and tertiary amines.

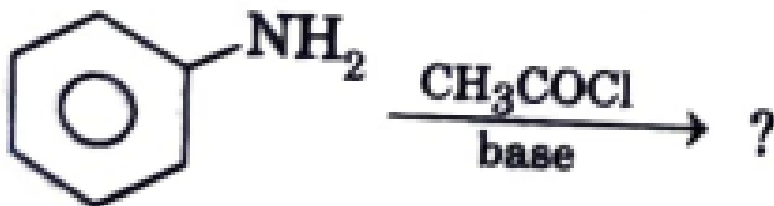
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191. Write the main products of the following.



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192. Write the main products of the following.



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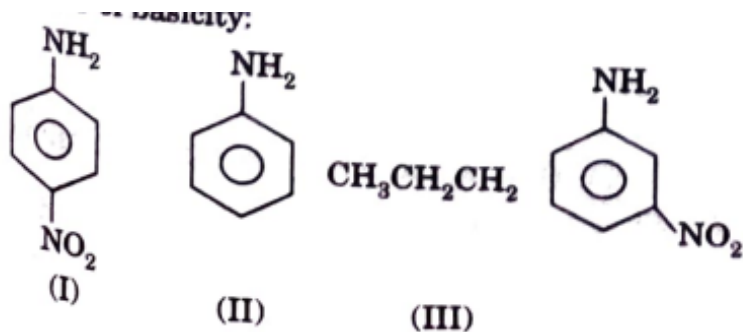
193. Aniline does not undergo Friedel-Crafts reaction. Explain.

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194.  $pK_b$  of aniline is more than that of metltylamine. Explain

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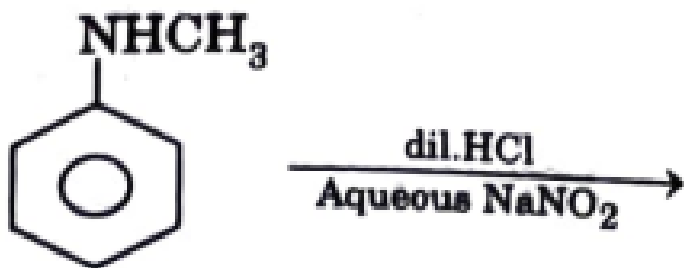
195. Arrange the following compounds in the decreasing order of basicity :



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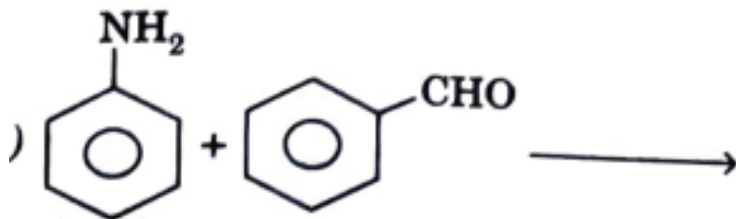


196. Write the organic products in the following reactions:



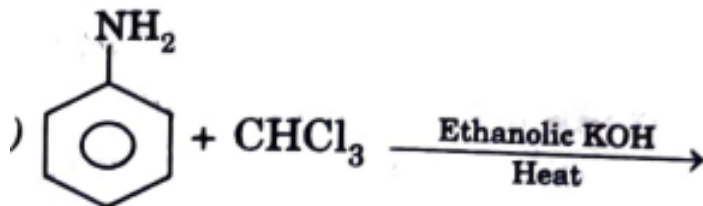
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197. Write the organic products in the following reactions:



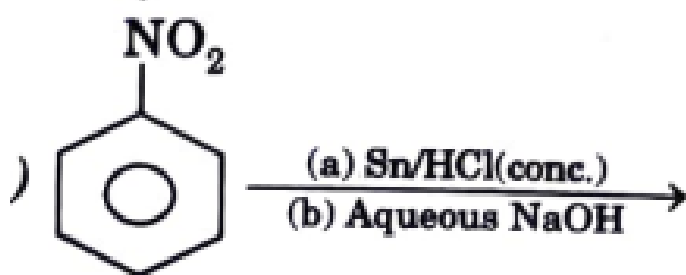
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198. Write the organic products in the following reactions:



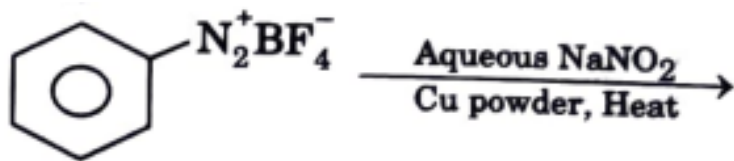
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199. Write the organic products in the following reactions:



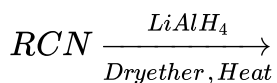
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200. Write the organic products in the following reactions:



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201. Write the organic products in the following reactions:



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202. How  $3^\circ$  amine reacts with nitrous acid ?

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203. What is Coupling reaction ?

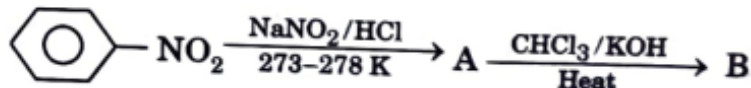
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204. Arrange the following compounds in an increasing order of basic strengths in their aqueous solutions :



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205. Identify the products in the following reaction:



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206. How will you convert benzene diazonium chloride

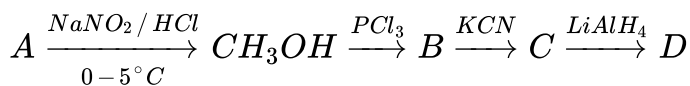
Chlorobenzene

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207. How will you convert aniline into phenol ?

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208. Identify A, B, C and D in the following conversions:



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209. Discuss reduction of primary, secondary and tertiary alcohols.

 [Watch Video Solution](#)

210. How will you convert nitrobenzene into aniline ?

 [Watch Video Solution](#)

211. Aniline does not undergo Friedel-Crafts reaction. Explain.

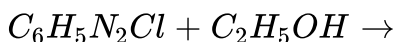
 [Watch Video Solution](#)

212. Complete the following reactions :



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213. Write the products of the following reaction :

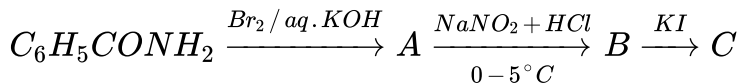


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214. Complete the following reactions :  $C_2H_5NH_2 + HNO_2 \rightarrow$

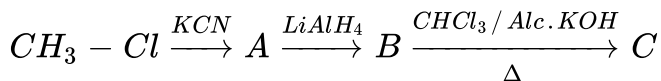
 [Watch Video Solution](#)

215. Write the structures of A, B and C in the following :



 [Watch Video Solution](#)

216. Write the structures of A, B and C in the following :



 [Watch Video Solution](#)

217. Account for the following : Amines are basic substances while amides are neutral.

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218. Account for the following : Nitro compounds have higher boiling points than the hydrocarbons having almost the same molecular mass.



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219. Alkyl amines are stronger bases than aryl amines. Justify.



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220.  $pK_b$  of aniline is more than that of methylamine. Explain



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221. Methylamine in water reacts with ferric chloride to precipitate ferric hydroxide. Explain.



Watch Video Solution

222. Aniline does not undergo Friedel-Crafts reaction. Explain.



Watch Video Solution



 Watch Video Solution

223. What is Hofmann bromamide degradation reaction ?

 Watch Video Solution

224. Write short notes on the following : Gabriel phthalimide synthesis.

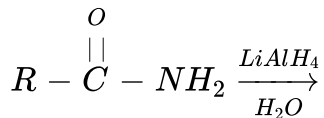
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225. Arrange the following compounds in an increasing order of basic strengths in their aqueous solutions :

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

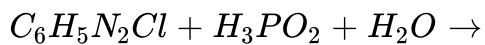
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226. Complete the following equations :



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227. Complete the following reactions :



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228. Complete the following equations :



 [Watch Video Solution](#)

**229.** Complete the following reaction equations :



 [Watch Video Solution](#)

**230.** Complete the following reaction equations :



 [Watch Video Solution](#)

**231.** Complete the following reactions :  $C_2H_5NH_2 + HNO_2 \rightarrow$

 [Watch Video Solution](#)

**232.** Give one chemical test to distinguish between the following pairs of compounds.

Ethylamine and aniline



[Watch Video Solution](#)

**233.** Give one chemical test to distinguish between the following pairs of compounds.

Aniline and benzylamine



[Watch Video Solution](#)

**234.** Give one chemical test to distinguish between the following pairs of compounds.

Methylamine and dimethylamine



[Watch Video Solution](#)

**235.** Give one chemical test to distinguish between the following pairs of compounds.

Aniline and N-methylaniline

 [Watch Video Solution](#)

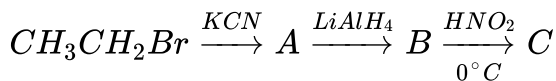
236. Write short notes on the following : Carbylamine reaction.

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237. Write short notes on the following : Hoffmann's bromamide reaction.

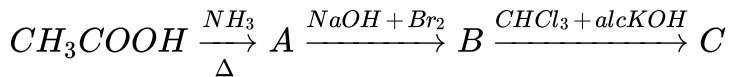
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238. Give the structures of A, B and C in the following reactions



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239. Give the structures of A, B and C in the following reactions



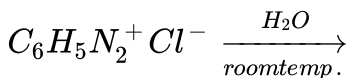
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240. Complete the following chemical equations :



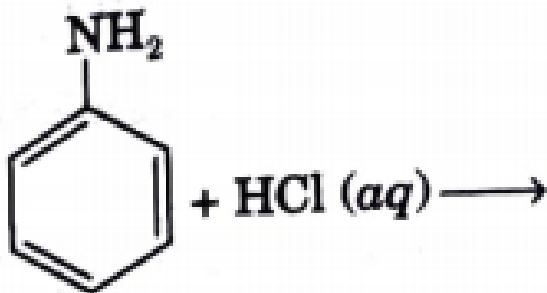
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241. Complete the following chemical equations :



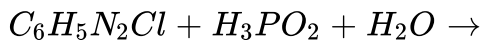
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242. Complete the following reaction :



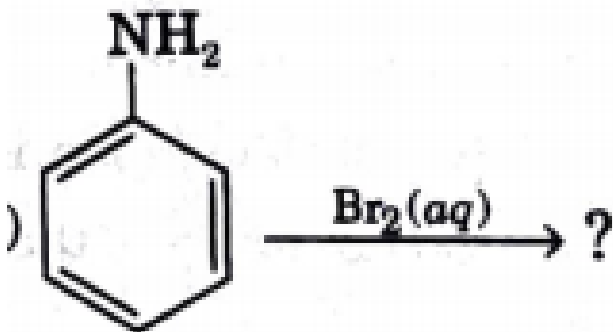
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243. Complete the following reactions :



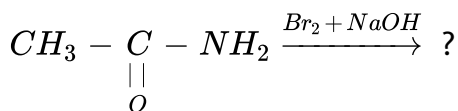
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244. Write the main products of the following reactions -



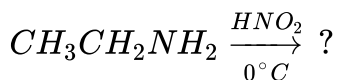
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245. Write the main products of the following reactions -



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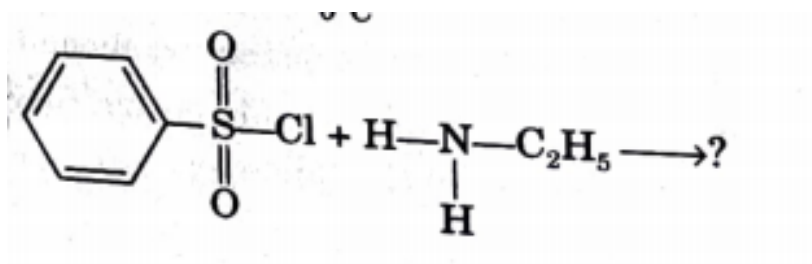
246. Write the structures of products in the following :



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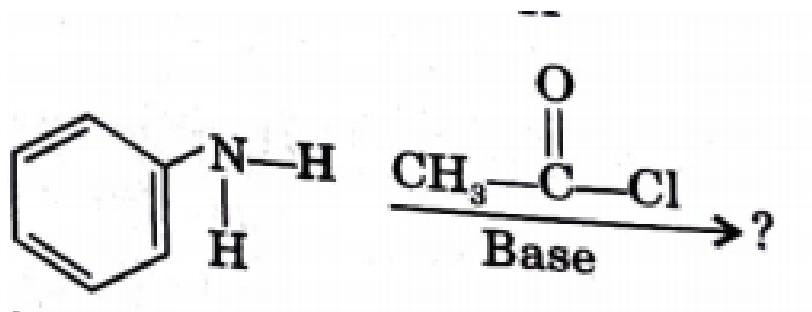


247. Write the structure of the product obtained in the following :



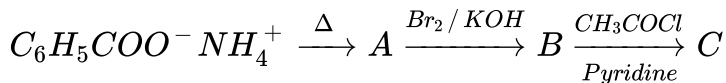
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248. Write the structures of products in the following :



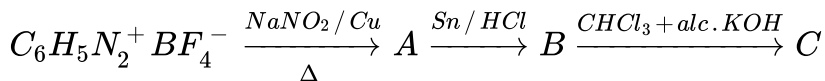
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249. Write the structures of A, B and C in the following reaction :



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250. Write the structures of A, B and C in the following reaction :



 [Watch Video Solution](#)

251. Why aniline a weaker base than methylamine?

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252. How is the activation of benzene ring by amino group reduced by acetylating aniline during nitration ?

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[Watch Video Solution](#)

253. How is sulphanilic acid prepared from aniline ?

 [Watch Video Solution](#)

254. What happens when aniline reacts with  $K_2Cr_2O_7$  and  $H_2SO_4$ .

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255. How are amines prepared from nitro alkanes?

 [Watch Video Solution](#)

256. How are amines prepared from alkyl halide?

 [Watch Video Solution](#)

257. How are amines prepared from amides?

 [Watch Video Solution](#)

258. How does benzene diazonium chloride react with :

Water

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259. How does benzenediazonium chloride react with :

$HNO_2$

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260. How does benzene diazonium chloride react with :

$Cu_2Cl_2 / HCl$

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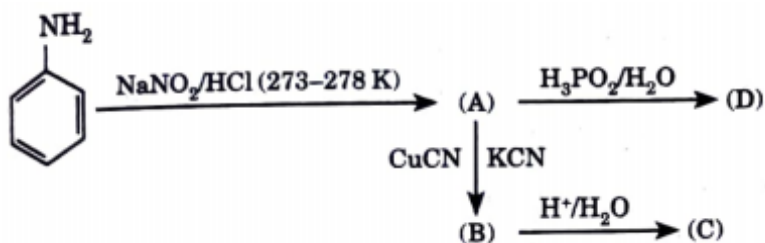
261. Discuss Coupling reaction of benzenediazonium chloride.

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262. Aniline does not undergo Friedel-Crafts reaction. Explain.

[▶ Watch Video Solution](#)

263. Identify the compounds (A) (B), (C), (D) in the following sequence of reactions:



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264. Why are aliphatic amines more basic than aromatic amines?

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265. Why aromatic amines cannot be prepared by Gabriel phthalimide synthesis?

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266. Give reason for the following statement- Mixture of 1% of phosphorus, 4% of tin and 95% of copper makes an alloy.

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267. Write short notes on the following : Hoffmann's bromamide reaction.

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268. Why is aniline less basic than ethylamine ?

 [Watch Video Solution](#)

269. Complete the following reactions :



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270. Explain the following : Arrange the following in increasing order of basic strength: Aniline, p-nitroaniline and p-methyl aniline.

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271. Write short notes on the following : Coupling reaction

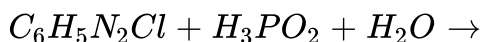
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272. Explain the following : Ammonia is less basic than methylamine.

Why?

 [Watch Video Solution](#)

273. Explain the following : Complete the following reaction:



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274. Arrange the following : Decreasing order of basic strength in gas

phase :  $C_2H_5NH_2$ ,  $(C_2H_5)_2NH$ ,  $(C_2H_5)_3N$  and  $NH_3$

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275. Explain the following : Carbylamine reaction.





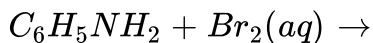
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276. Why ethylamine is more basic than methyl amine.



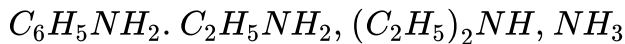
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277. Explain the following : Complete the following reaction:



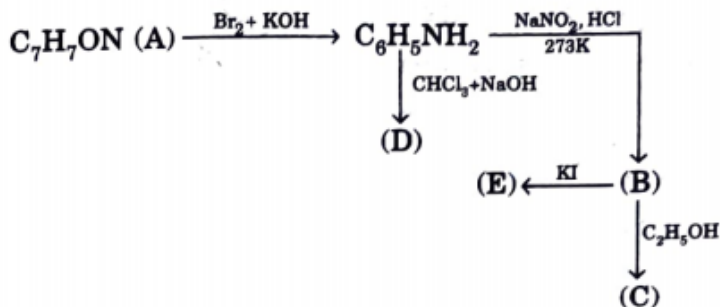
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278. Arrange the following in decreasing order of their basic strength in aqueous solution.



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279. An aromatic compound 'A' of molecular formula  $C_7H_7ON$  undergoes a series of reactions as shown below. Write the structures of A, B, C, D and E in the following reactions:



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280. Write the structures of main products formed when aniline reacts with the following reagent :  $Br_2$  water

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281. Write the structures of main products formed when aniline reacts with the following reagent : HCl.



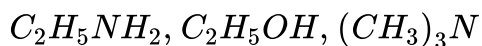
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**282.** Write the structures of main products formed when aniline reacts with the following reagent : HCl.



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**283.** Arrange the following in the increasing order of boiling points



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**284.** Give a simple chemical test to distinguish between the following pair of compounds:  $(CH_3)_2NH$  and  $(CH_3)_3N$



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**285.** What is Hofmann bromamide degradation reaction ?

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**286.** Illustrate the following reactions giving suitable example :  
Diazotisation.

 [Watch Video Solution](#)

**287.** Write short notes on the following : Gabriel phthalimide synthesis.

 [Watch Video Solution](#)

**288.** Give one chemical test to distinguish between the following pairs  
of compounds.

Aniline and N-methylaniline

 [Watch Video Solution](#)

289. Give a simple chemical test to distinguish between the following pair of compounds:  $(CH_3)_2NH$  and  $(CH_3)_3N$

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290. Write the main products when benzene diazonium chloride  $(C_6H_5N_2^+ Cl^-)$  reacts with the following:  $CuCN/KCN$ .

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291. Write the structures of main products when benzene diazonium chloride  $(C_6H_5N_2^+ Cl^-)$  reacts with the following reagents :

$H_2O$

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**292.** Write the structures of main products when benzene diazonium chloride ( $C_6H_5N_2^+ Cl^-$ ) reacts with the following reagents :



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**293.** Arrange the following

$C_2H_5NH_2$ ,  $C_2H_5OH$ ,  $(CH_3)_3N$  - in increasing order of their boiling point.

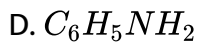
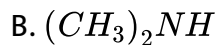
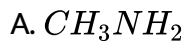
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**294.** Arrange the following

Aniline, p-nitroaniline, p-methylaniline - in increasing of their basic strength.

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295. Which is most basic?

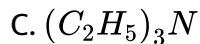
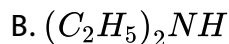
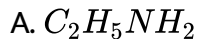


Answer:



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296. Which of the following amines gives Carbylamine reaction?



**Answer:**



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**297.** Aniline undergoes condensation to form Schiff base on reacting with.

A. acetyl chloride

B. ammonia

C. acetone

D. benzaldehyde.

**Answer:**



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**298.** An isocyanide on reduction with hydrogen in the presence of Pt gives



- A. amide
- B. primary amine
- C. secondary amine
- D. alcohol.

**Answer:**

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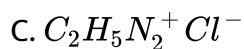
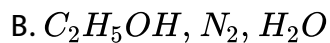
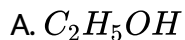
**299.** Aniline on oxidation with  $Na_2Cr_2O_7$  and  $H_2SO_4$  gives.

- A. benzoic acid
- B. m-amino benzoic acid
- C. Schiff's base
- D. p-benzoquinone.

**Answer:**

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300. Ethylamine reacts with nitrous acid to form



Answer:



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301. Hinsberg reagent is

A. benzene sulphonyl chloride

B. benzene sulphonic acid

C. phenyl isocyanide

D. benzene sulphonamide.

**Answer:**

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**302.** Which of the following reaction 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.

**Answer:**

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303. Amino ( $-NH_2$ ) group is susceptible to oxidation by  $HNO_3$ , therefore nitration is done in presence of

A.  $dilH_2SO_4$

B.  $CS_2$  at  $0^\circ C$

C.  $CH_3COCl$

D. Water.

**Answer:**



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304. Aniline reacts with  $NaNO_2$  and HCl at room temperature to give

A. nitroaniline

B. phenol

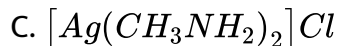
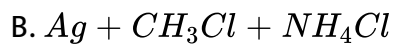
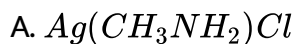
C. diazonium chloride

D. chloroaniline.

**Answer:**

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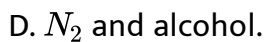
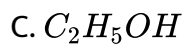
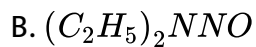
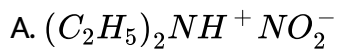
**305.** Silver chloride dissolves in methylamine solution.



**Answer:**

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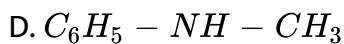
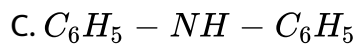
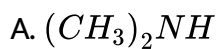
**306.** Diethylamine reacts with nitrous acid to give



**Answer:**

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**307.** Maximum  $pK_b$  value is of



**Answer:**

 [Watch Video Solution](#)

308. Gabriel phthalimide reaction is used for the preparation of

- A. primary aromatic amines
- B. secondary amines
- C. primary aliphatic amines
- D. tertiary amines.

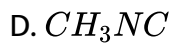
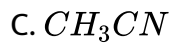
**Answer:**



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309. What happens when ethylamine is warmed with chloroform and alcoholic  $\text{KOH}$  ?

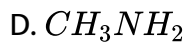
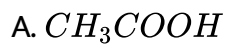
- A.  $\text{C}_2\text{H}_5\text{CN}$
- B.  $\text{C}_2\text{H}_5\text{NC}$



**Answer:**

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**310.** Reaction of acetamide with bromine water and KOH gives



**Answer:**

 [Watch Video Solution](#)



311. Hoffmann degradation of m-bromobenzamide gives.

- A. aniline
- B. m-bromoaniline
- C. bromobenzene
- D. m-bromoethyl benzene.

**Answer:**



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312. Which of the following is Hoffmann mustard oil reaction?

- A. Reaction of aromatic amine with iodoform
- B. Reaction of primary amine with  $CHCl_3$
- C. Reaction of primary amine with  $CS_2$  and  $HgCl_2$
- D. Reaction of secondary amine with nitrous acid.

**Answer:**

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**313.** The indicator methyl orange is prepared by coupling diazonium salt of sulphanilic acid with

- A. aniline
- B. N, N-dimethylaniline
- C. p-methylaniline
- D. naphthol.

**Answer:**

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**314.** On heating aniline with  $CS_2$  in the presence of  $HgCl_2$  the product is:

- A. Phenyl cyanide
- B. Phenyl isocyanide
- C. Phenyl isothiocyanate
- D. p-Aminobenzene sulphonic acid .

**Answer:**

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**315.** Which of the following has highest boiling point?

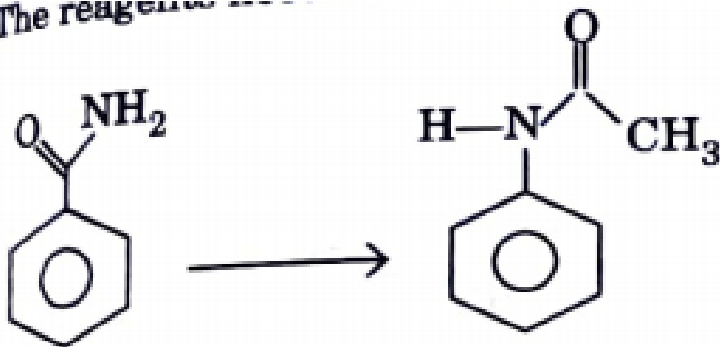
- A.  $CH_3NH_2$
- B.  $CH_3CH_3$
- C.  $CH_3OH$
- D.  $CH_3$

**Answer:**

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316. The reagents needed to convert is/are

The reagent is/are



- A.  $KOH, Br_2, LiAlH_4$
- B.  $KOH, Br_2, CH_3COCl$
- C.  $HONO, Cu_2Cl_2, (CH_3CO)_2O$
- D.  $KOH, Br_2, Ni, H_2, CH_3COCl$

Answer:



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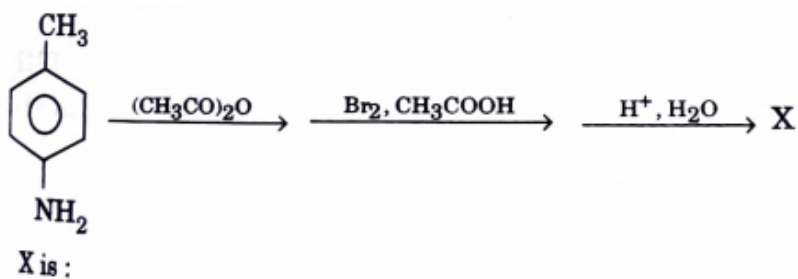
317. A positive carbylamine test is given by

- A. N, N-dimethylaniline
- B. 2, 4-dimethylaniline
- C. N-methyl-o-methylaniline
- D. p-methyl benzylamine

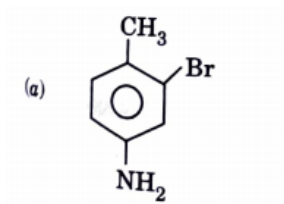
Answer:

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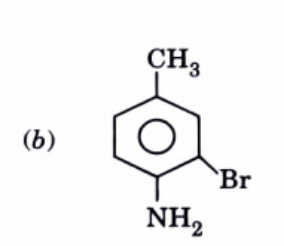
318. In the reaction



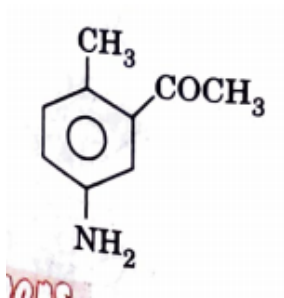
A.



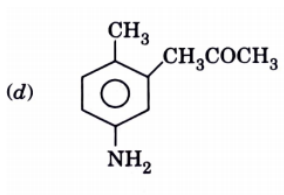
B.



C.



D.



**Answer:**



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**319.** The compound  $C_5H_{13}N$  is optically active and reacts with HONO to give  $C_5H_{11}OH$ . The compound is

- A. N-methylbutanamine
- B. 2-Aminopentane
- C. 1-Aminopentane
- D. N,N'-Dimethylpropanamine

**Answer:**



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**320.** Intermolecular H bonding is strongest in

A. methylamine

B. phenol

C. methanol

D. formaldehyde

**Answer:**

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**321.** In the reaction of p-chlorotoluene with  $KNH_2$  in liquid  $NH_3$  the major product is

A. o-toluidine

B. m-toluidine

C. p-toluidine

D. p-chloroaniline

**Answer:**





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322. *p*-chloroamine and anilinium hydrochloride can be distinguished by

A. Sandmeyer's reaction

B.  $NaHCO_3$

C.  $AgNO_3$

D. Carbylamine test.

Answer:



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323. Benzene diazonium chloride on reaction with phenol in basic medium gives:

A. diphenyl ether

B. p-hydroxyazobenzene

C. chlorobenzene

D. benzene

**Answer:**

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324.  $CH_3CH_2Cl + NaCN \rightarrow X + Ni/H_2 \rightarrow Y + \text{Acetic anhydride} \rightarrow Z.$

Z in the above reacting sequence is

A.  $CH_3CH_2CH_2NHCOCH_3$

B.  $CH_3CH_2CH_2NH_2$

C.  $CH_3CH_2CH_2CONHCH_3$

D.  $CH_3CH_2CH_2CONHCOCH_3$

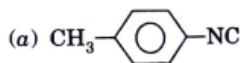
**Answer:**



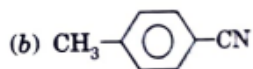
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325. Give the reaction chloroform with alcoholic KOH.

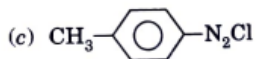
A.



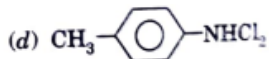
B.



C.



D.



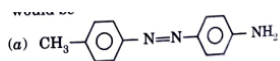
Answer:



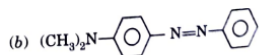
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326. Aniline when diazotized in cold and then treated with dimethyl aniline gives a coloured product. Its structure would be

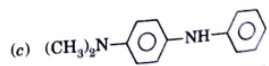
A.



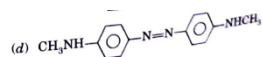
B.



C.



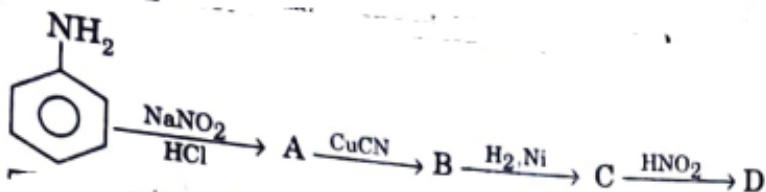
D.



Answer:

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327. Aniline in a set of reactions yielded a product D.



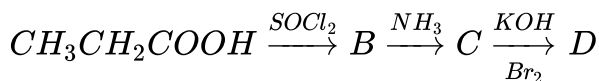
The structure of the product D would be

- A.  $C_6H_5NHOH$
- B.  $C_6H_5NHCH_2CH_3$
- C.  $C_6H_5CH_2NH_2$
- D.  $C_6H_5CH_2OH$

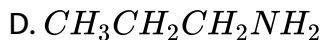
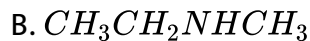
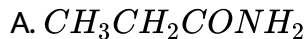
Answer:

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328. In a set of reactions propionic acid yielded compound D:



The structure of D would be



**Answer:**



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**329.** Which one of the following on reduction with lithium aluminium hydride yields a secondary amine ?

A. Methyl isocyanide

B. Acetamide

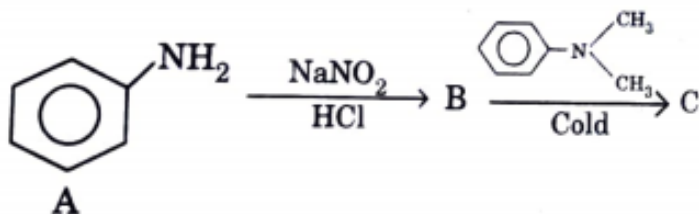
C. Methyl cyanide

D. Nitroethane.

Answer:

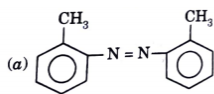
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330. In a reaction of aniline a coloured product C was obtained.

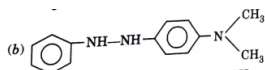


The structure of C would be :

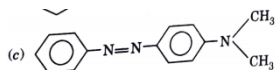
A.



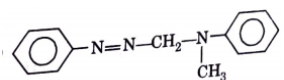
B.



C.



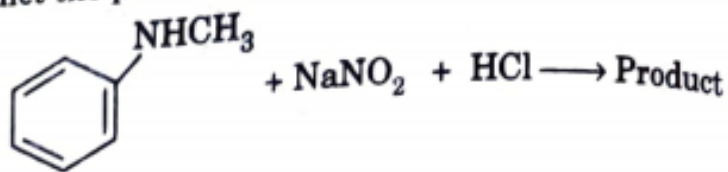
D.



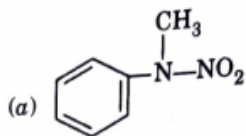
Answer:

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331. Predict the product

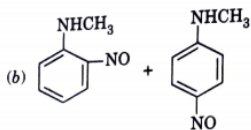


A.

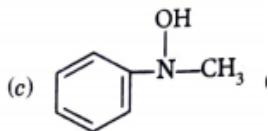




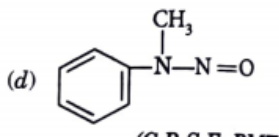
B.



C.



D.



**Answer:**



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**332.** Nitrobenzene can be prepared from benzene by using a mixture of conc.  $HNO_3$  and  $H_2SO_4$ . In the mixture,  $HNO_3$  acts as a/an

A. acid

B. base

C. catalyst

D. reducing agent

**Answer:**



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**333.** Acetamide is treated with the following reagents separately. Which one of these would yield methyl amine ?

A. Hot conc.  $H_2SO_4$

B.  $PCl_5$

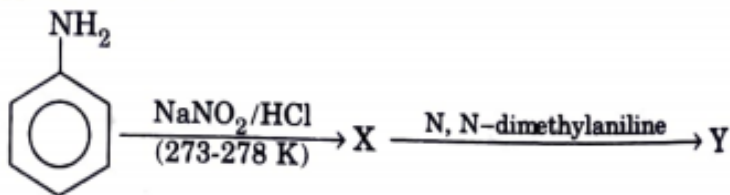
C.  $NaOH - Br_2$

D. Sodalime

**Answer:**

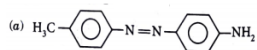


334. Aniline in a set of the following reactions yielded a coloured product 'Y'.

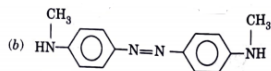


The structure of 'Y' would be :

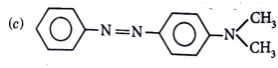
A.



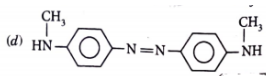
B.



C.



D.



**Answer:**

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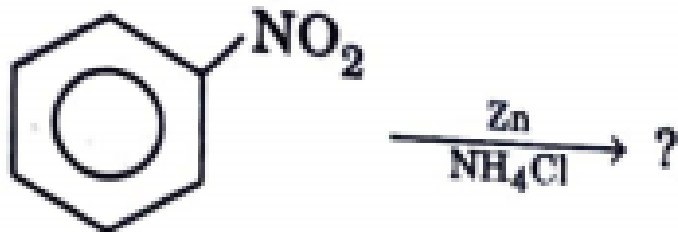
335. Which of the following statements about Primary amines is 'false' ?

- A. Aryl amines react with nitrous acid to produce phenols
- B. Alkyl amines are stronger bases than ammonia
- C. Alkyl amines are stronger bases than aryl amines
- D. Aryl amines react with nitrous acid to produce alcohols.

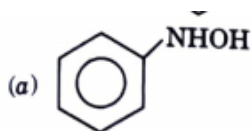
**Answer:**

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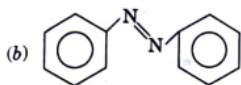
336. What is the product obtained in the following reaction ?



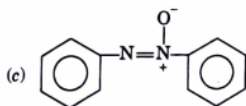
A.



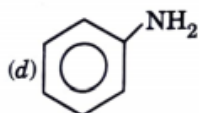
B.



C.



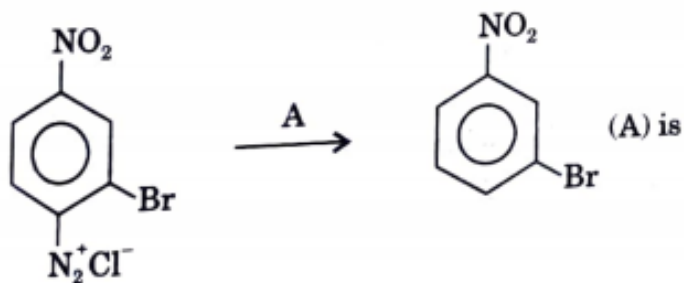
D.



Answer:

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337. In the reaction :



A.  $H_3PO_2$  and  $H_2O$

B.  $H^+ / H_2O$

C.  $HgSO_4 / H_2SO_4$

D.  $Cu_2Cl_2$

Answer:

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338. Nitrobenzene on reaction with conc.  $HNO_3/H_2SO_4$  at 80 to  $100^\circ C$  forms which one of the following products?

- A. 1, 4-Dinitrobenzene
- B. 1, 2, 4-Trinitrobenzene
- C. 1, 2-Dinitrobenzene
- D. 1,3-Dinitrobenzene

**Answer:**

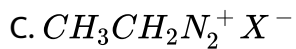


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339. Which of the following will be most stable diazonium salt

$RN_2^+ X^-$  ?

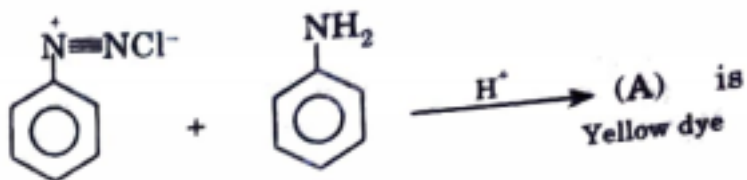
- A.  $CH_3N_2^+ X^-$
- B.  $C_6H_5N_2^+ X^-$



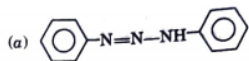
Answer:

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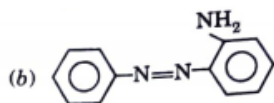
340. In the following reaction, the product (A)



A.

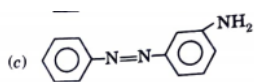


B.

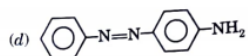




C.



D.



**Answer:**

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**341.** The number of structural isomers possible from the molecular formula  $C_3H_9N$  is :

A. 2

B. 3

C. 4

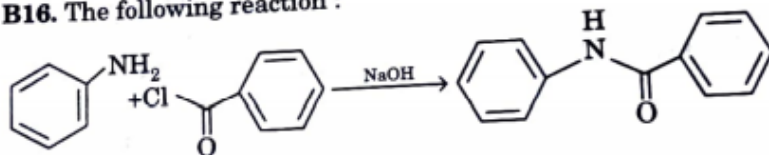
D. 5

Answer:

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342. The following reaction :

B16. The following reaction :



is known by the name:

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343. Method by which aniline cannot be prepared is :

- A. reduction of nitrobenzene with  $\text{H}_2 / \text{Pd}$  in ethanol.
- B. potassium salt of phthalimide treated with chlorobenzene followed by hydrolysis with aqueous  $\text{NaOH}$  solution.
- C. hydrolysis of phenylisocyanide with acidic solution.

D. degradation of benzamide with bromine in alkaline solution.

**Answer:**

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**344.** The electrolytic reduction of nitrobenzene in strongly acidic medium produces

A. azobenzene

B. aniline

C. p-aminophenol

D. azoxybenzene

**Answer:**

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345. Select correct statement :

- A. arylamines are generally more basic than alkylamines because of aryl group
- B. arylamines are generally more basic than alkylamines because the nitrogen atom in arylamines is  $sp$ -hybridised
- C. arylamines are generally less basic than alkylamines because the nitrogen lone-pair electrons are delocalised by interaction with the aromatic ring  $\pi$ -electron system.
- D. arylamines are generally more basic than alkylamines because the nitrogen lone-pair electrons are not delocalised by interaction with the aromatic ring  $\pi$ -electron system.

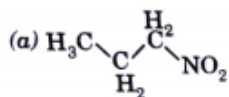
Answer:



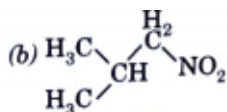
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346. Which one of the following nitro-compound does not react with nitrous acid?

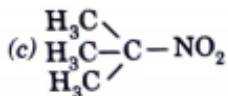
A.



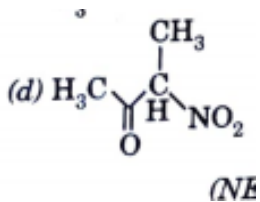
B.



C.



D.



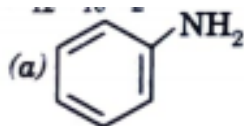
Answer:



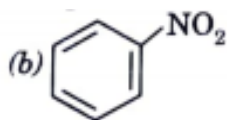
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347. A given nitrogen-containing aromatic compound 'A' reacts with Sn/HCl, followed by  $HNO_2$  to give an unstable compound 'B'. 'B', on treatment with phenol, forms a beautiful coloured compound 'C' with the molecular formula  $C_{12}H_{10}N_2O$ . The structure of compound 'A' is

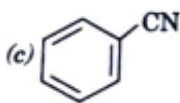
A.



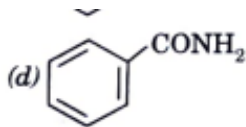
B.



C.



D.



**Answer:**

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**348.** Aniline is treated with  $NaNO_2 / HCl$  at  $0^\circ C$  to give compound X which on treatment with cuprous cyanide gives another compound Y. When compound Y is treated with  $H_2 / Ni$  compound Z is obtained. The compound Z is

- A. Benzyl alcohol
- B. Benzylamine
- C. N-ethylaniline
- D. Phenol

**Answer:**

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**349.** n-Butylamine (I), diethylamine(II) and N,N -dimethylethyl amine (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.  $II < I < III$

**Answer:**

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**350.** The strongest base in aqueous solution among the following amines is

A. N, N-diethylethanamine

B. N-ethylethanamine

C. ethanamine

D. phenylmethanamine

**Answer:**



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**351.** Aniline is treated with bromine water to give an organic compound 'X' which when treated with  $NaNO_2$  and HCl at  $0^\circ C$  gives a water soluble compound 'Y'. Compound 'Y' on treatment with  $Cu_2Cl_2$  and HCl gives compound 'Z'. Compound 'Z' is F

A. o-bromochlorobenzene

B. p-bromochlorobenzene

C. 2, 4, 6-tribromophenol

D. 2, 4, 6-tribromochlorobenzene

**Answer:**

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**352.** Anilinium hydrogensulphate on heating with sulphuric acid at 453-473 K produces ,

A. benzene sulphonic acid

B. anthranilic acid

C. aniline

D. sulphanilic acid

**Answer:**

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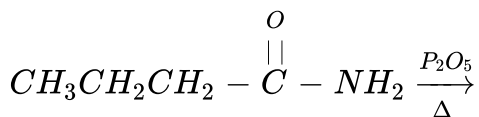
353. Secondary amines could be prepared by

- A. reduction of nitriles
- B. Hoffmann bromamide reaction
- C. reduction of amides
- D. reduction of isonitriles

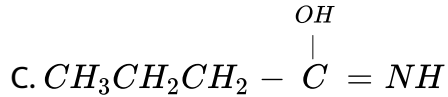
Answer:

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354. The product obtained in the following reaction is



- A.  $CH_3CH_2CH_2COOH$
- B.  $CH_3CH_2CH_2CN$



D. None of the above.

**Answer:**

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**355.** Answer the following question in one word- Sodium bicarbonate is also called-

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**356.** Write structures of different isomeric amines corresponding to the molecular formula,  $C_4H_{11}N$ .

A. 6

B. 5

C. 4

D. 8

**Answer:**

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**357.** Which one of the following amines cannot be prepared by Gabriel phthalimide synthesis?

A. Ethylamine

B. Isopropylamine

C. n-Propylamine

D. Ethylmethanamine

**Answer:**

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**358.** Which one of the following amines forms a non-acidic and alkali insoluble product with p- toluenesulphonyl chloride?

- A. Tertiary butylamine
- B. n-Butylamine
- C. Isobutylamine
- D. Diethylamine

**Answer:**



[Watch Video Solution](#)

**359.** Which of the following compound is most basic ?

- A. Aniline
- B. Cyclohexylamine
- C. o-Nitroaniline

D. o-Toluidine

**Answer:**

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**360.** Fluorobenzene can be synthesised in the laboratory

- A. from aniline by diazotisation followed by heating the diazonium salt with  $HBF_4$
- B. by direct fluorination of benzene with  $F_2$  gas
- C. by reacting bromobenzene with NaF solution
- D. by heating phenol with HF and KF

**Answer:**

 [Watch Video Solution](#)

361. Presence of nitro group in the benzene ring.

- A. renders the ring basic
- B. deactivates the ring towards nucleophilic substitution
- C. deactivates the ring towards electrophilic substitution
- D. activates the ring towards electrophilic substitution.

Answer:



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362. Complete the following chemical equations :



A.  $CH_3CH_2CONH_2$  and  $3KCl$

B.  $C_2H_5NC$  and  $K_2CO_3$

C.  $C_2H_5NC$  and  $3KCl$

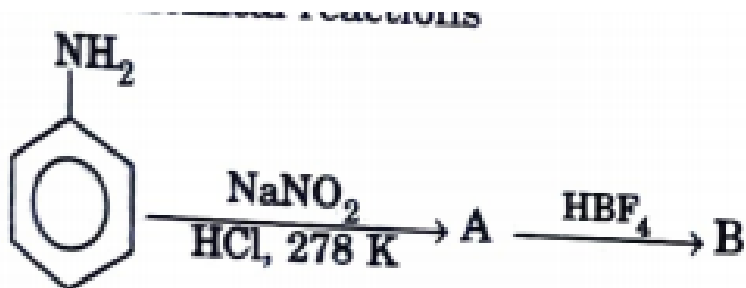


D.  $C_2H_5CN$  and  $3KCl$

Answer:

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363. In the chemical reaction,



The

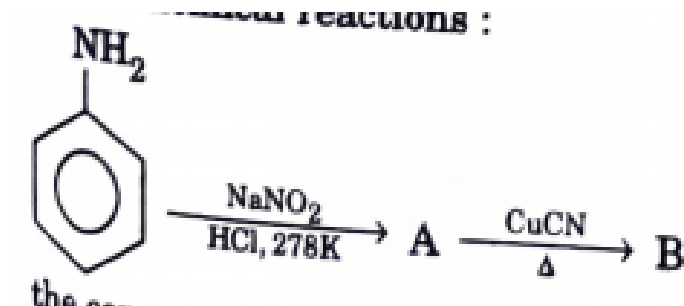
compounds (A) and (B) are respectively :

- A. benzene diazonium chloride and fluorobenzene
- B. nitrobenzene and chlorobenzene
- C. nitrobenzene and fluorobenzene
- D. phenol and benzene.

Answer:

 Watch Video Solution

364. In the chemical reaction,



The

compounds (A) and (B) are respectively :

- A. benzenediazonium chloride and benzonitrile
- B. Nitrobenzene and chlorobenzene
- C. Phenol and bromobenzene
- D. Fluorobenzene and phenol.

Answer:

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**365.** A compound with molecular mass 180 is acylated with  $CH_3COCl$  to get a compound with molecular mass 390. The number of amino groups present per molecule of the former compound is

A. 6

B. 2

C. 5

D. 4

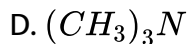
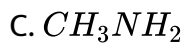
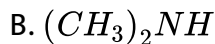
**Answer:**



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**366.** Considering the basic strength of amines in aqueous solution, which one has the smallest  $pK_b$  value?

A.  $C_6H_5NH_2$



**Answer:**

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**367.** On heating an aliphatic primary amine with chloroform and ethanolic potassium hydroxide, the organic compound formed is

A. an alkyl isocyanide

B. an alkanol

C. an alkanediol

D. an alkyl cyanide.

**Answer:**

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368. In the Hofmann bromamide degradation reaction, the number of moles of NaOH and  $Br_2$  used per mole of amine produced are

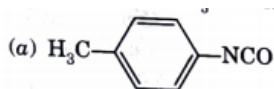
- A. one mole of NaOH and one mole of  $Br_2$
- B. four moles of NaOH and two moles of  $Br_2$
- C. two moles of NaOH and two moles of  $Br_2$
- D. four moles of NaOH and one mole of  $Br_2$ .

Answer:

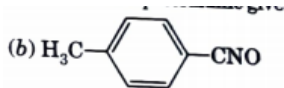
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369. The reaction of  $CHCl_3$  and alcoholic KOH with p-toluidine gives

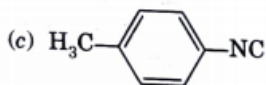
A.



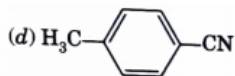
B.



C.



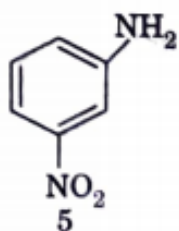
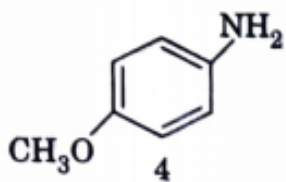
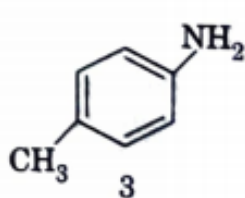
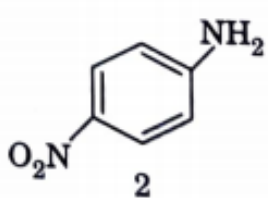
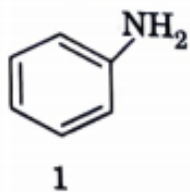
D.



**Answer:**

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



A.  $2 < 5 < 1 < 3 < 4$

B.  $5 < 2 < 1 < 3 < 4$

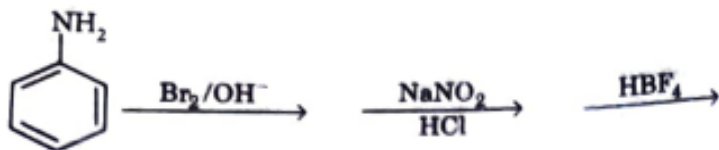
C.  $2 < 5 < 1 < 4 < 3$

D.  $5 < 2 < 1 < 4 < 3$

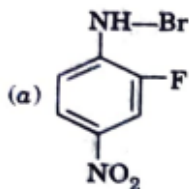
**Answer:**

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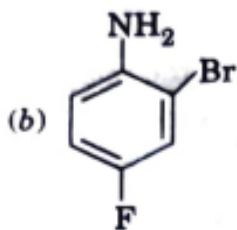
371. The final product in the following sequence of reaction is



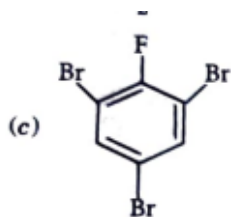
A.



B.

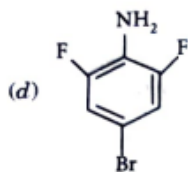


C.





D.



**Answer:**

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**372.** Choose the amide which on reduction with  $LiAlH_4$  yields a secondary amine

- A. Ethanamide
- B. N-Methyl ethanamide
- C. N, N-dimethyl ethanamide
- D. Phenyl methanamide

**Answer:**





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**373.** Mendius reaction converts an alkyl cyanide to

- A. a primary amine
- B. an aldehyde
- C. a ketone
- D. an oxime

**Answer:**



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**374.** The basicity of aniline is weaker in comparison to that of methyl amine due to

- A. hyperconjugative effect of Me group in Me  $NH_2$
- B. resonance effect of phenyl group in aniline

C. lower molecular weight of methyl amine as compared to that of aniline

D. resonance effect of  $-NH_2$  group in Me  $NH_2$

**Answer:**

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**375.** Aniline react with excess bromine in aqueous solution to give major product as

A. p-bromoaniline

B. o-bromoaniline

C. 2,4-dibromoaniline

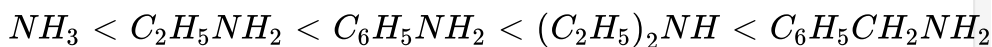
D. 2,4,6-tribromoaniline

**Answer:**

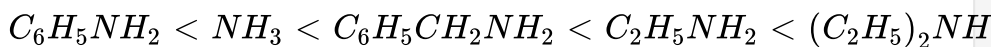
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376. Which one of the following is the correct order of increasing basic strength of nitrogen compounds in aqueous solution?

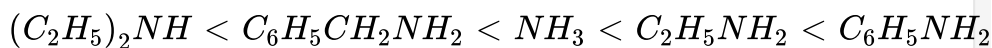
A.



B.



C.



D.



Answer:



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**377.** Benzylamine is a stronger base than aniline because :

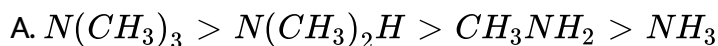
- A. The lone pair of electrons on the nitrogen atom in benzylamine is delocalised.
- B. The lone pair of electrons on the nitrogen atom in aniline is delocalised.
- C. The lone pair of electrons on the nitrogen atom in aniline is not involved in resonance.
- D. Benzylamine has a higher molecular mass than aniline.

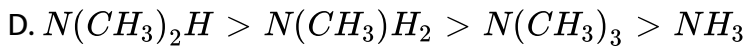
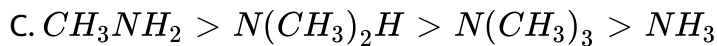
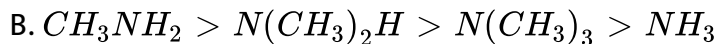
**Answer:**



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**378.** The order of basic strength for methyl substituted amines in aqueous solution is





**Answer:**



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**379.** When aniline is nitrated with nitrating mixture in ice cold conditions, the major product obtained is

A. p-nitroaniline

B. 2, 4-dinitroaniline

C. o-nitroaniline

D. m-nitroaniline

**Answer:**



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380. Which one of the following gives amine on heating with amide?

A.  $Br_2$  in aqueous KOH`

B.  $Br_2$  in alcoholic KOH`

C.  $Cl_2$  in sodium

D. Sodium in ether.

Answer:



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381. A positive carbylamine test is given by

A. N, N-dimethylaniline

B. triethylamine

C. N-methylaniline

D. p-methylbenzylamine

**Answer:**

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**382.** Give reason for the following statement- Magnets are made up of an alloy.

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**383.** The best reagent for converting 2-phenylpropanamide into 2-phenylpropanamine is

A.  $Br_2$  in aqueous NaOH

B. excess of  $H_2$

C. iodine in the presence of red phosphorus

D.  $LiAlH_4$  in ether



**Answer:**

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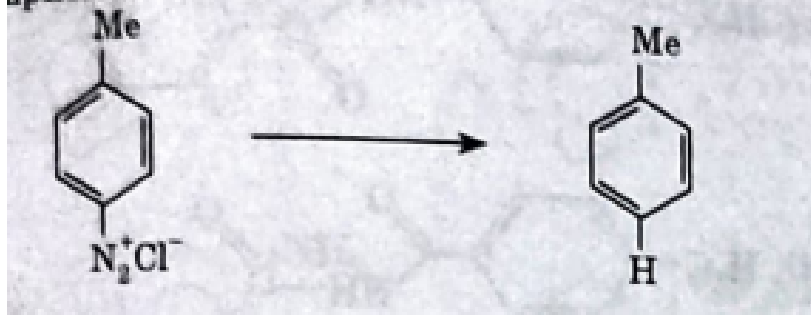
**384.** The reaction of aniline with chloroform under alkaline conditions leads to the formation of

- A. phenyl cyanide
- B. phenyl isonitrile
- C. phenyl cyanate
- D. phenyl isocyanate.

**Answer:**

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**385.** The reagent with which the following reaction is best accomplished is

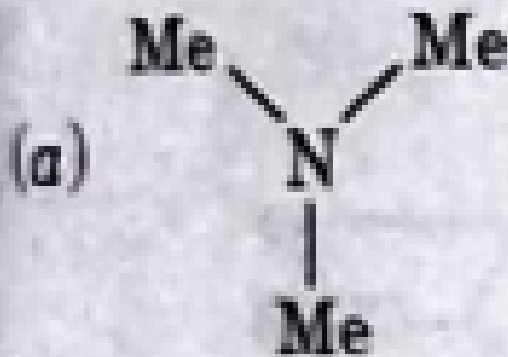


- A.  $\text{H}_3\text{PO}_2$
- B.  $\text{H}_3\text{PO}_3$
- C.  $\text{H}_3\text{PO}_4$
- D.  $\text{NaHSO}_3$

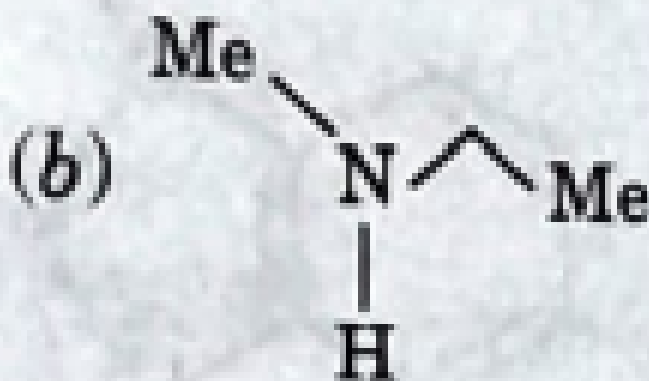
**Answer:**

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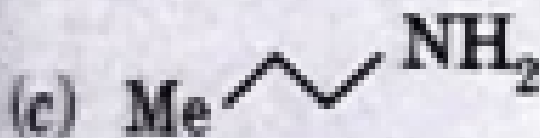
**386.** An amine  $\text{C}_3\text{H}_9\text{N}$  reacts with benzene sulphonyl chloride to form a white precipitate which is insoluble in aq. NaOH. The amine is



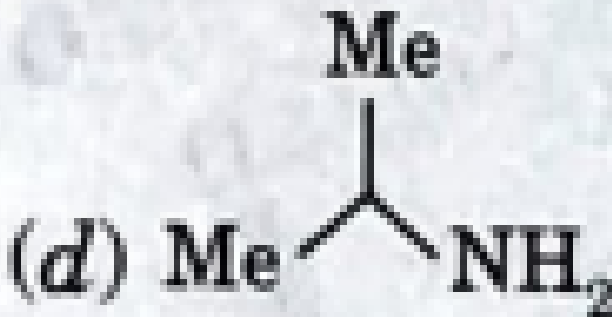
A.



B.



C.



D.

Answer:

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387. Choose the correct order of decreasing basic strength of the following compounds in aqueous solution: (i)  $C_6H_5NH_2$  (ii)  $C_2H_5NH_2$  (iii)  $NH_3$  (iv)  $(CH_3)_2NH$

A. (i) > (ii) > (iii) > (iv)

B. (iv) > (ii) > (iii) > (i)

C. (ii) > (i) > (iii) > (iv)

D. (iv) > (iii) > (ii) > (i)

**Answer:**

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**388.** Gabriel's phthalimide synthesis can be used to prepare

- A. ethanamine
- B. N-methylmethanamine
- C. benzenamine
- D. N, N-dimethylmethanamine

**Answer:**

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389. An aromatic compound A ( $C_7H_9N$ ) on reacting with  $NaNO_2/HCl$  at  $0^\circ C$  forms benzyl alcohol and nitrogen gas. The number of isomers possible for the compound A is

A. 5

B. 7

C. 3

D. 6

**Answer:**

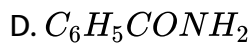
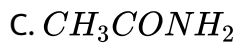


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390. One of the following amides will not undergo Hoffmann bromamide reaction

A.  $CH_3CONHCH_3$

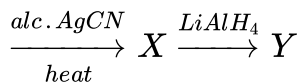
B.  $CH_3CH_2CONH_2$



**Answer:**

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**391.** In the given series of reactions: 2- Bromopropane



The IUPAC name of product Y is

A. N-isopropylmethanamine

B. N-methylpropan-2-amine

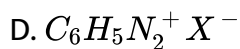
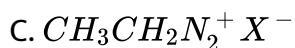
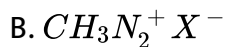
C. N-methylpropanamine

D. Butan-2-amine.

**Answer:**

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392. Which of the following is the most stable diazonium salt ?



Answer:

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393. Diethylamine reacts with nitrous acid to give

A. Diethyl ammonium nitrite

B. Ethyl alcohol

C. N-nitroso diethyl amine

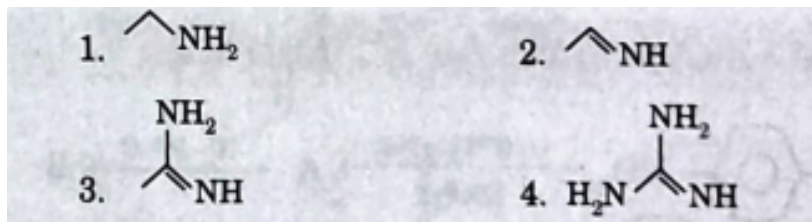


D. Triethyl ammonium nitrite

Answer:

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394. The correct order of basicity of the following compounds is



A. 1<2<3<4

B. 1<2<4<3

C. 2<1<3<4

D. 4<3<2<1

Answer:

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**395.** The amine 'A' when treated with nitrous acid gives yellow oily substance. The amine A is :

- A. triethylamine
- B. trimethylamine
- C. aniline
- D. diethylamine

**Answer:**

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**396.** Select the compound which on treatment with nitrous acid liberates nitrogen :

- A. Nitroethane
- B. Triethylamine

C. Diethylamine

D. Ethylamin.

**Answer:**

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**397.** Which one of the following can be prepared by Gabriel phthalimide synthesis ?

A. Aniline

B. o-Toluidine

C. Benzylamine

D. N-Methylethanamine

**Answer:**

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**398.** 4-Nitrotoluene is treated with bromine to get compound P. P is reduced with Sn and HCl to get compound 'Q'. Q is diazotised and the product is treated with phosphinic acid to get compound 'R'. R is oxidized with alkaline  $KMnO_4$  to get compound 'S'. Compound 'S' is

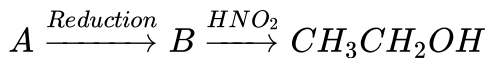
- A. 2-bromo-4-hydroxybenzoic acid
- B. benzoic acid
- C. 3-bromobenzoic acid
- D. 2-bromobenzoic acid

**Answer:**



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**399.** In the following sequence of reactions:



The compound A is

- A. propane nitrile
- B. ethane nitrile
- C. nitromethane
- D. methyl isocyanate.

**Answer:**

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**400.** An organic compound A on reduction gives compound B, which on reaction with trichloromethane and caustic potash forms C. The compound 'C' on catalytic reduction gives N-methyl benzenamine, the compound 'A' is

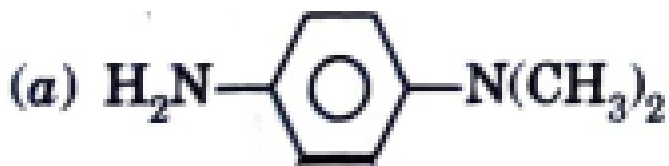
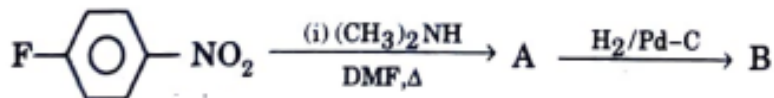
- A. nitrobenzene
- B. nitromethane
- C. methanamine

D. benzenamine.

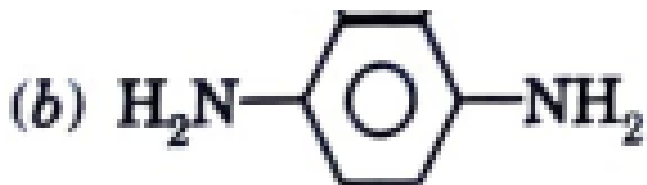
Answer:

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401.



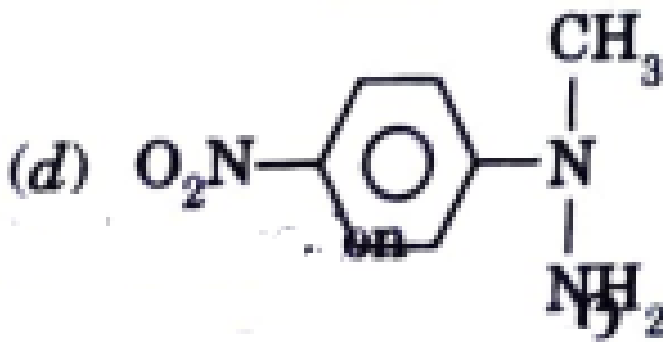
A.



B.



C.

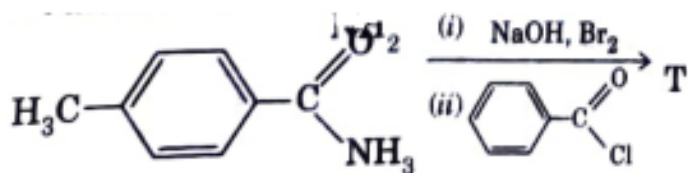


D.

Answer:

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402. In the reaction



the structure of the product T is :

A.

(##MDN<sub>S</sub>PJCHE<sub>X</sub>II<sub>P</sub>2C13E06<sub>076</sub> - 001##)

B.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>06<sub>076</sub> - O02##)

C.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>06<sub>076</sub> - O03##)

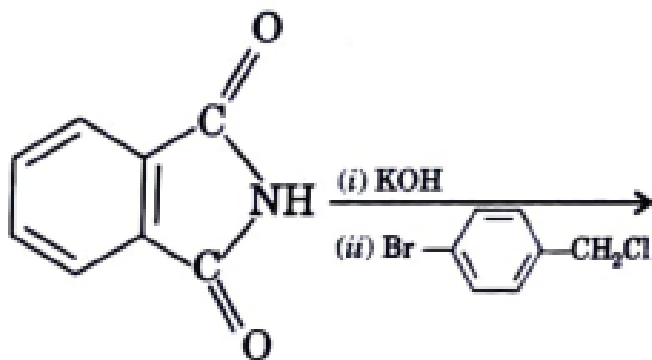
D.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>06<sub>076</sub> - O04##)

**Answer:**

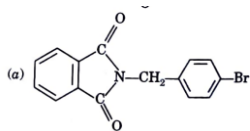
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**403.** The major product of the following reaction is

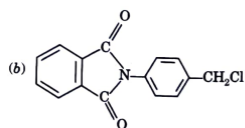




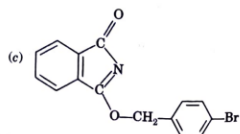
A.



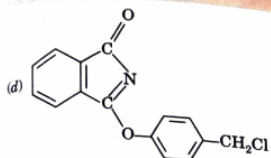
B.



C.



D.

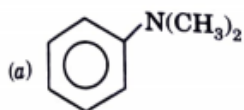


Answer:

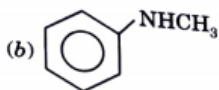
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404. Amongst the compounds given the one that would form a brilliant coloured dye on treatment with  $NaNO_2$  in dil HCl followed by addition to an alkaline Solution of  $\beta$ - naphthol is

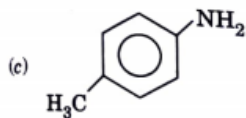
A.



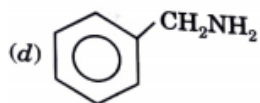
B.



C.



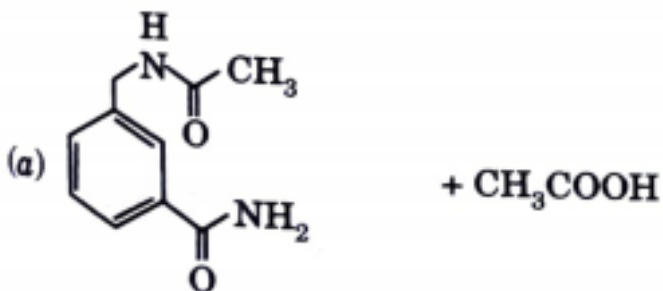
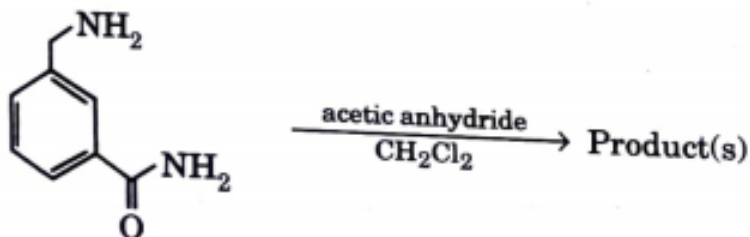
D.



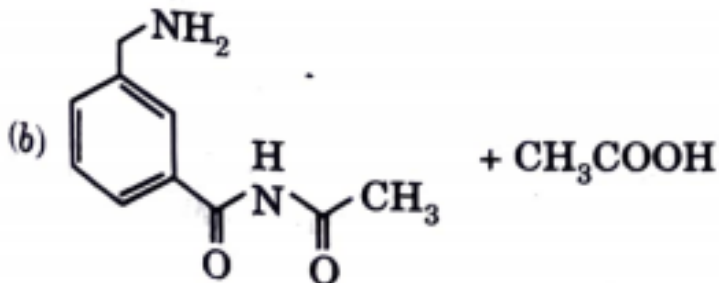
Answer:

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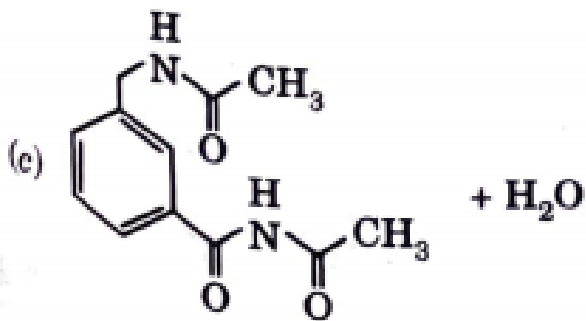
405. In the reaction shown below, the major product(s) formed is/are



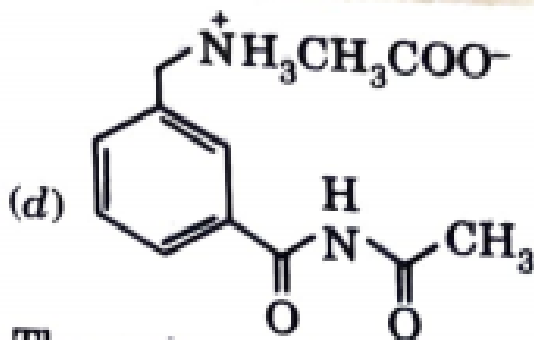
A.



B.



C.

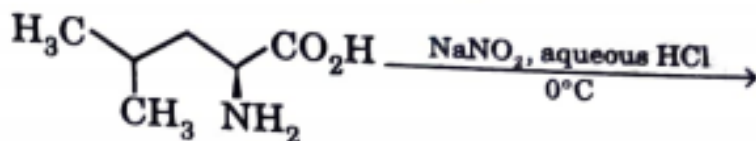


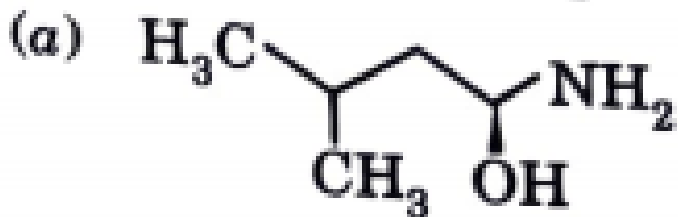
D. 40. The ...

Answer:

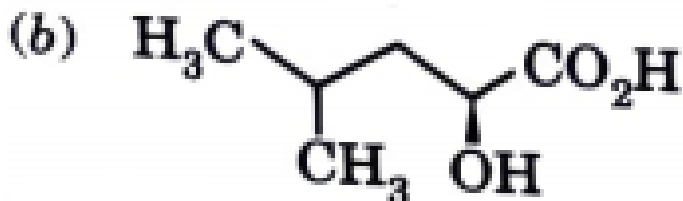
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406. The major product of the following reaction is

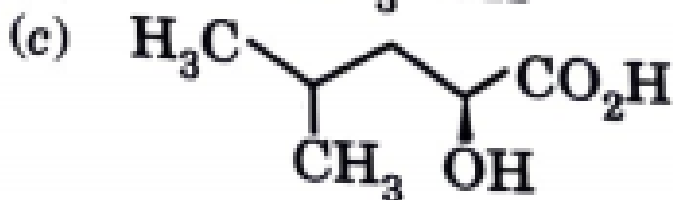




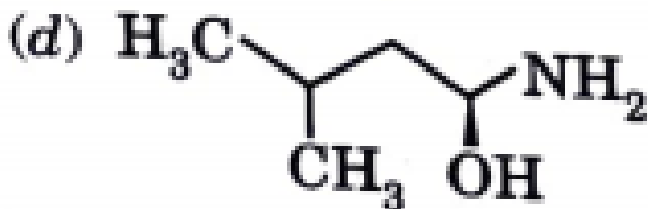
A.



B.



C.



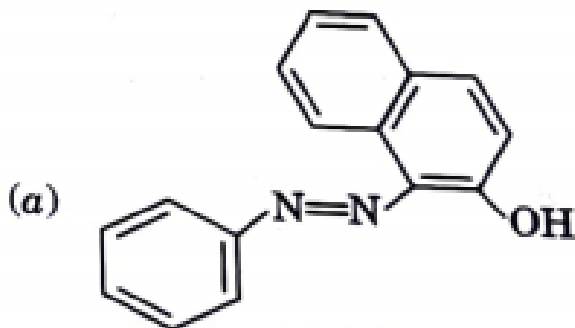
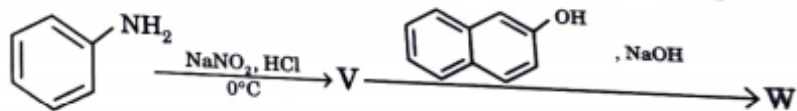
D.

Answer:

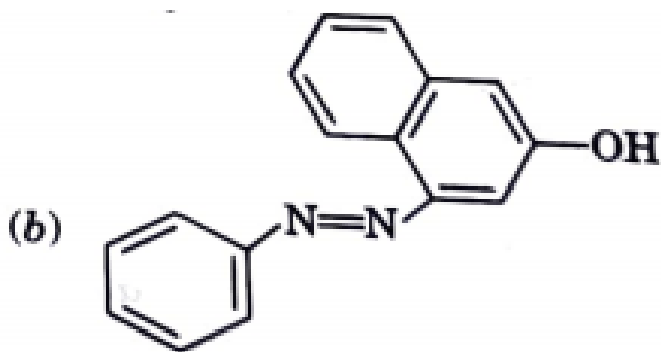


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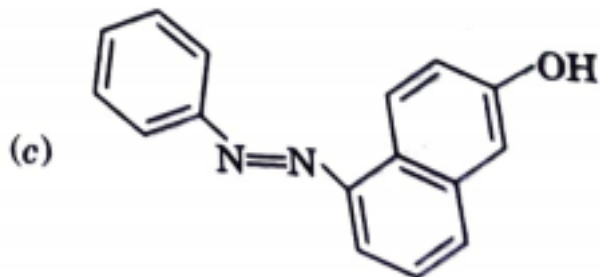
407. In the following reactions, the major product W is



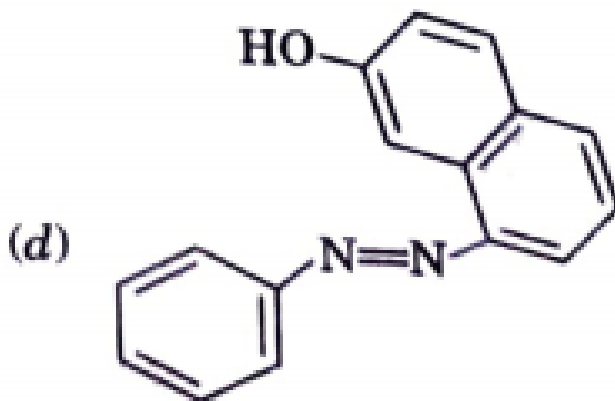
A.



B.



C.

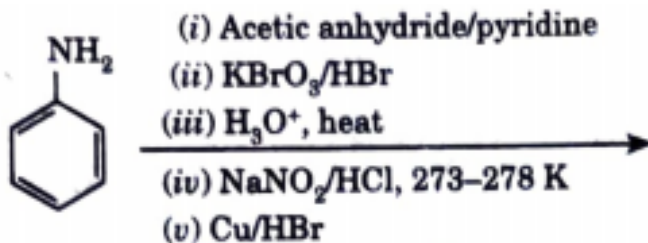


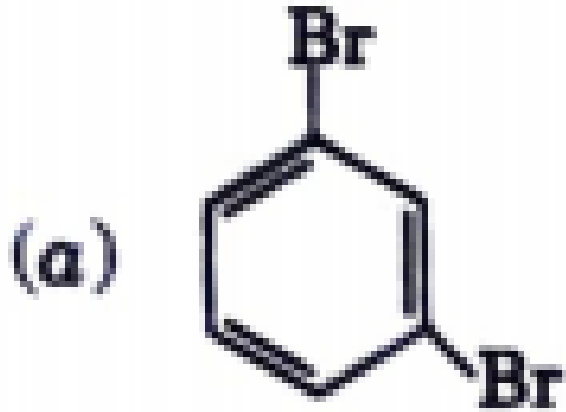
D.

Answer:

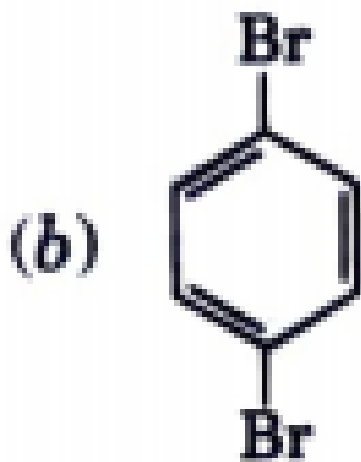
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408. The product(s) of the following reaction sequence is(are)





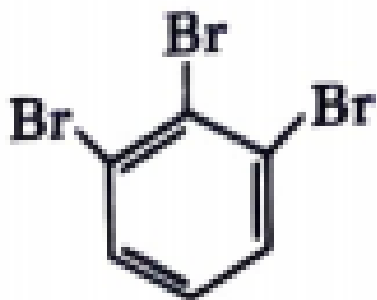
A.



B.



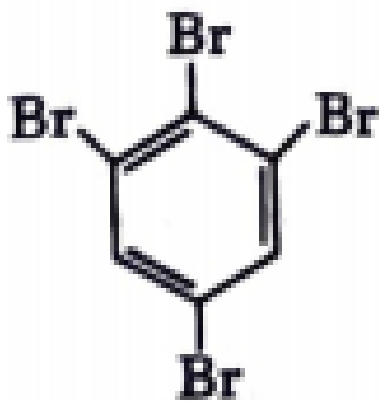
(c)



C.



(d)

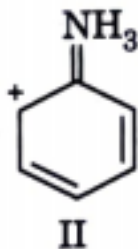
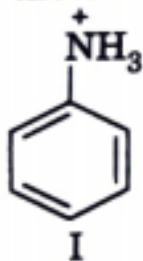


D.

Answer:

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409. Examine the following structures for anilinium ion and choose the correct statement from the following :



A. II is an acceptable canonical structure because carbonium ions are less stable than ammonium ions.

B. II is not an acceptable canonical structure because it is not aromatic.

C. II is not acceptable cononical structure because the nitrogen has ten valence electrons.

D. II is an acceptable cononical structure.

**Answer:**



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410. A positive carbylamine test is given by

- A. N, N- Dimethyl aniline
- B. 2, 4-Dimethyl aniline
- C. N-Methyl-o-methyl aniline
- D. p-Methyl benzylamine

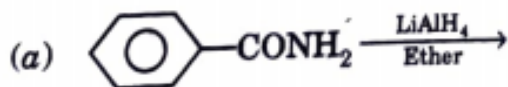
Answer:



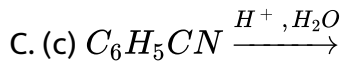
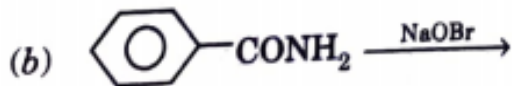
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411. Which of the following reactions form benzylamine ?

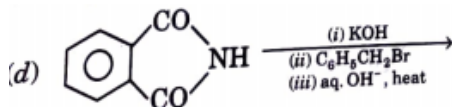
A.



B.



D.



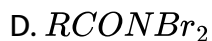
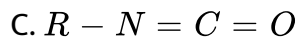
Answer:

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412. Reaction of  $RCONH_2$  with a mixture of  $Br_2$  and  $KOH$  gives  $RNH_2$  as the main product. The intermediates involved in the reaction are :

A.  $RCONHBr$

B.  $R - NHBr$



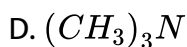
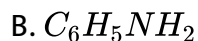
**Answer:**

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**413.** What is the common name of  $NaHCO_3$ ?

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**414.** Which of the following amines undergo acylation reaction ?



**Answer:**

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**415.** In which of the following amines, the first has lower  $pK_b$  value than the second ?

- A. Aniline, m-nitro aniline
- B. m-Toluidine, p-toluidine
- C. Aniline, p-chloroaniline
- D. Aniline, p-aminophenol

**Answer:**

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**416.** An azo compound is formed when benzene diazonium chloride reacts with

A. aniline

B. phenol

C. trimethyl butanol

D. mesitylene

**Answer:**

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**417.** Bromobenzene can be prepared when benzene diazonium chloride is treated with

A.  $Cu / HBr$

B.  $Br_2, HBr$

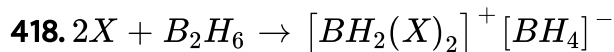
C.  $CuBr / HBr$

D.  $Br_2, CCl_4$

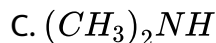
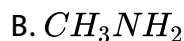
**Answer:**



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The amine(s) X is/are



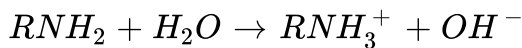
Answer:



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419. Amines are basic in nature due to the presence of lone pair of electrons on N atom of  $-NH_2$  group. The basic strength of amines can be expressed by their dissociation constant,  $K_b$  or  $pK_b$ .



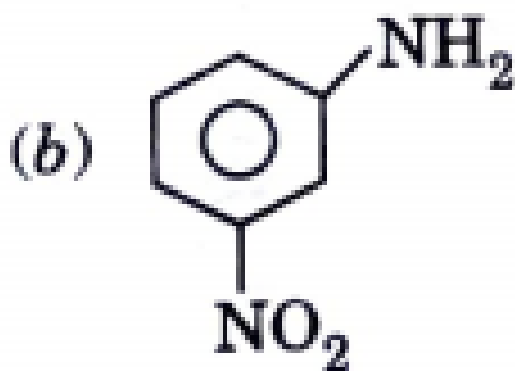


$$K_b = \frac{[RNH_3^+][OH^-]}{[RNH_2]} \text{ and } pK_b = -\log K_b$$

Greater the  $K_b$  value or smaller the  $pK_b$  value, more is the basic strength of amine. Aliphatic amines are stronger bases than ammonia due to the electron releasing effect of alkyl groups. The basic strength among amines decreases as :  $2^\circ > 1^\circ > 3^\circ$  Aryl amines such as aniline are less basic than aliphatic amines due to the involvement of lone pair of electrons on N atom with the resonance in benzene. In derivatives of aniline, the electron releasing groups increase the basic strength while electron withdrawing groups decrease the basic strength. The base weakening effect of electron withdrawing group and base strengthening effect of electron releasing group is more marked at p-position than at m-position. Every o- substituted aniline is less basic than aniline due to ortho effect. Answer the following 5 questions : Which of the following has lowest  $pK_b$  value ?



A.

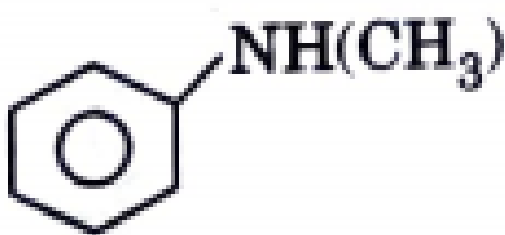


B.



C.

(d)



D.

**Answer:**

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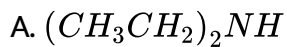
**420.** Which of the following statement is not correct ?

- A. Ethylamine is more basic than aniline
- B. o-methylaniline has lower  $pK_b$  value than aniline
- C. p-methylaniline is less basic than m- methylaniline
- D. Aniline has lower  $pK_b$  value than o-nitroaniline

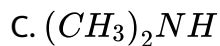
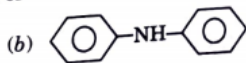
**Answer:**

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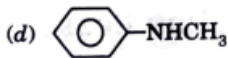
421. Maximum  $pK_b$  value is of



B.



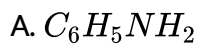
D.

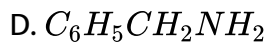
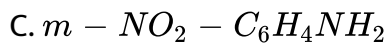
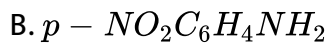


Answer:

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422. The strongest base among the following is

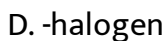
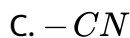
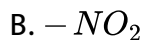
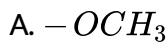




**Answer:**

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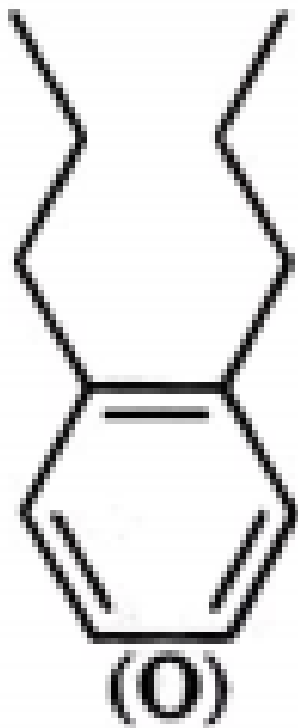
**423.** Which of the following group does not decrease the basic strength of aniline ?



**Answer:**

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424. Treatment of compound O with  $KMnO_4/H^+$  gave P, which on heating with ammonia gave Q. The compound Q on treatment with  $Br_2/NaOH$  produced R. On strong heating, Q gave S, which on further treatment with ethyl 2 bromopropanoate in the presence of KOH followed by acidification, gave a compound T.



compound R is

The

A.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>07<sub>016</sub> – O01##)

B.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>07<sub>016</sub> – O02##)

C.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>07<sub>016</sub> – O03##)

D.

(##MDN<sub>S</sub>PJ<sub>C</sub>HE<sub>X</sub>II<sub>P</sub>2<sub>C</sub>13<sub>E</sub>07<sub>016</sub> – O04##)

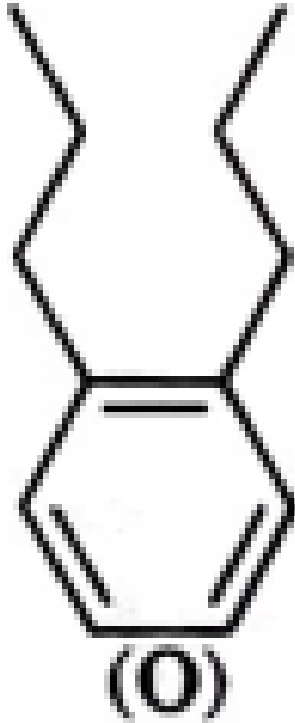
**Answer:**



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**425.** Treatment of compound O with  $KMnO_4/H^+$  gave P, which on heating with ammonia gave Q. The compound Q on treatment with  $Br_2/NaOH$  produced R. On strong heating, Q gave S, which on further treatment with ethyl 2 bromopropanoate in the presence of

KOH followed by acidification, gave a compound T.



The  
compound T is

- A. glycine
- B. alanine
- C. valine
- D. serine

The



**Answer:**

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**426.** The questions given below consist of an Assertion and a Reason. Use the following key to choose the appropriate answer. (a) If both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion. (b) If both assertion and reason are CORRECT, but reason is NOT THE CORRECT explanation of the assertion. (c) If assertion is CORRECT but reason is INCORRECT . (d) If assertion is INCORRECT but reason is CORRECT . (e) If both assertion and reason are INCORRECT. Assertion : n- Propylamine has higher boiling point than trimethylamine. Reason : Among n-propylamine molecules, there is hydrogen bonding but there is no hydrogen bonding in trimethylamine.

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**427.** Assertion: Aniline does not undergo Friedel Crafts reaction. Reason : Friedel Crafts reaction is an electrophilic substitution reaction.

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**428.** Aniline is less basic than ammonia

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**429.** Write short notes on the following : Carbylamine reaction.

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**430.**  $3^\circ$  amines do not undergo acylation why ?

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**431.** Assertion: Aniline hydrogen sulphate, on heating forms a mixture of ortho and para aminosulphonic acids.

Reason : The sulphonic acid group is electron withdrawing group.

- A. (a) Both assertion and reason are correct and reason is the correct explanation of the assertion.
- B. (b) Both assertion and reason are correct and reason is not the correct explanation of the assertion.
- C. (c) Assertion is correct but reason is incorrect.
- D. (d) Assertion is incorrect but reason is correct.

**Answer:**



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**432.** The reaction between alkyl halides and sodium metal is called :



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433. Sulphanilic acid is insoluble in water and organic solvents. Explain.

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434. In general, alkyl halides are more reactive than aryl halides.

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435. Assertion: p-nitroaniline is a stronger base than p-toluidine.

Reason : The electron withdrawing  $-NO_2$  group in p-nitroaniline makes it a stronger base.

- A. (a) Both assertion and reason are correct and reason is the correct explanation of the assertion.
- B. (b) Both assertion and reason are correct and reason is not the correct explanation of the assertion.
- C. (c) Assertion is correct but reason is incorrect.

D. (d) Both assertion and reason are incorrect.

**Answer:**

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**436.** Each question contains statements given in two columns, which have to be matched. Statements in Column I are labelled as A, B, C and D whereas statements in Column II are labelled as p,q, r and s. Match the entries of Column I with appropriate entries of Column II. Each entry in Column I may have one or more than one correct option from Column II. The answers to these questions have to be appropriately bubbled as illustrated in the following example.

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**437.** Fill in the blanks- \_\_\_\_\_ is the commercial name of  $\text{NaHCO}_3$ .

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438. Baking soda is used for-.

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439. Fill in the blanks- \_\_\_\_\_ is the chemical compound which is used in the deodrants and also a mouthwash.

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440. Fill in the blanks- \_\_\_\_\_ is the chemical compound which is used as teeth whitener, as a mouthwash and in baking purposes.

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441. The number of isomeric amines of molecular formula  $C_4H_{11}N$  which give carbylamine reaction is

0 1 2 3 4 5 6 7 8 9

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442. Total number of nitrogen atoms present in reduced product obtained by reducing nitrobenzene with  $LiAlH_4$  followed by aqueous work up is

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443. Which of the following is a  $3^\circ$  amine ?

A. 1-methylcyclohexylamine

B. triethylamine

C. tert-butylamine

D. N-methylaniline

**Answer:**

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**444.** The correct IUPAC name for  $CH_2 = CHCH_2NHCH_3$  is

- A. Allylmethylamine
- B. 2-amino-4-pentene
- C. 4-aminopent-1-ene
- D. N-methylprop-2-en-1-amine

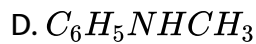
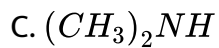
**Answer:**

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**445.** Amongst the following the strongest base in gaseous medium is:

- A.  $CH_3NH_2$



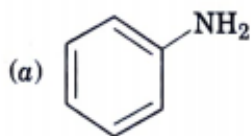


**Answer:**

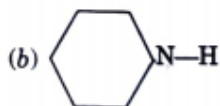
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**446.** Which of the following is the weakest Bronsted base?

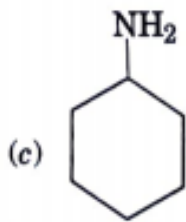
A.



B.



C.

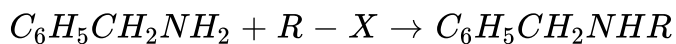


D.  $CH_3NH_2$

**Answer:**

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**447.** Benzylamine may be alkylated as shown in the following equation :



Which of the following alkyl halide is best suited for this reaction through  $S_N1$  mechanism ?

A.  $CH_3Br$

B.  $C_6H_5Br$

C.  $C_6H_5CH_2Br$

D.  $C_2H_5Br$

**Answer:**

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**448.** Which of the following reagent would not be a good choice for reducing an aryl nitro compound to an amine

A.  $H_2(\text{excess})/Pt$

B.  $LiAlH_4$  in ether

C. Fe and HCl

D. Sn and HCl

**Answer:**

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449. In order to prepare a  $1^\circ$  amine from an alkyl halide with simultaneous addition of one  $\text{CH}_2$  group in the carbon chain, the reagent used as source of nitrogen is \_\_\_\_\_.

A. Sodium amide,  $\text{NaNH}_2$

B. Sodium azide,  $\text{NaN}_3$

C. Potassium cyanide, KCN

D. Potassium phthalimide,  $\text{C}_6\text{H}_4(\text{CO})_2\text{N}^- \text{K}^+$ .

**Answer:**

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450. Give reason for the following statement- Manganese steel is an alloy.

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451. Fill in the blanks- \_\_\_\_\_ is the chemical compound which is used in baking cakes and bread and also to treat heart burn.

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452. The best reagent for converting 2-phenylpropanamide into 2-phenylpropanamine is

- A. excess  $H_2$
- B.  $Br_2$  in aqueous NaOH
- C. iodine in the presence of red phosphorus
- D.  $LiAlH_4$  in ether

**Answer:**

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453. The best reagent for converting, 2-phenylpropanamide into 1-phenylethanamine is

A. excess  $H_2 / Pt$

B.  $NaOH / Br_2$

C.  $NaBH_4$ /methanol

D.  $LiAlH_4$ /ether

**Answer:**



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454. Hoffmann bromamide degradation reaction is shown by .....

A.  $ArNH_2$

B.  $ArCONH_2$

C.  $ArNO_2$



Answer:

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455. The correct increasing order of basic strength for the following compounds is \_\_\_\_\_ .



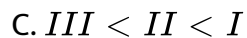
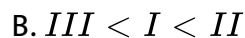
(I)



(II)



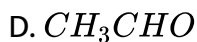
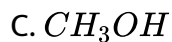
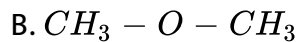
(III)



Answer:

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456. Methylamine reacts with  $HNO_2$  to form



Answer:

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457. The gas evolved when methylamine reacts with nitrous acid is





B.  $N_2$

C.  $H_2$

D.  $C_2H_6$

**Answer:**

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**458.** State whether the statement is true or false- The common name of Sodium bicarbonate is Common salt.

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**459.** Reduction of aromatic nitro compounds using Fe and HCl gives\_

A. aromatic oxime

B. aromatic hydrocarbon

C. aromatic primary amine

D. aromatic amide

**Answer:**

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**460.** Give reasons for the following statement- Chromium steel is an alloy.

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**461.** Acid anhydride on reaction with  $1^\circ$  amine gives

A. amide

B. imide

C. secondary amine

D. imine

**Answer:**

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**462.** The reaction  $ArN_2Cl \rightarrow ArCl + N_2 + CuCl$  is named as

- A. Sandmeyer reaction
- B. Gatterman reaction
- C. Claisen reaction
- D. Carbylamine reaction.

**Answer:**

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**463.** Best method for preparing primary amines from alkyl halides without changing the number of carbon atoms in the chain is

- A. Hoffmann Bromamide reaction
- B. Gabriel phthalimid synthesis
- C. Sandmeyer reaction
- D. Reaction with  $NH_3$

**Answer:**



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**464.** Which of the following compound will not undergo azo coupling reaction with benzene diazonium chloride .

- A. Aniline
- B. Phenol

C. Anisole

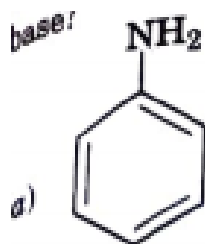
D. Nitrobenzene

Answer:

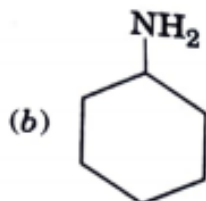
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465. Which of the following compounds is the weakest Bronsted base ?

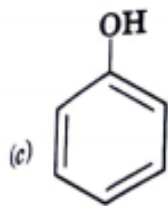
A.



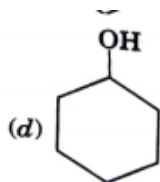
B.



C.



D.

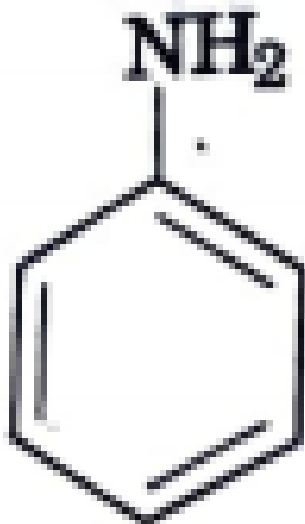


**Answer:**

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466. Among the following amines, the strongest Bronsted base is \_\_\_\_\_

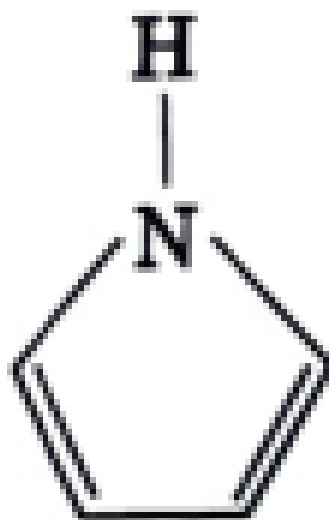
(a)



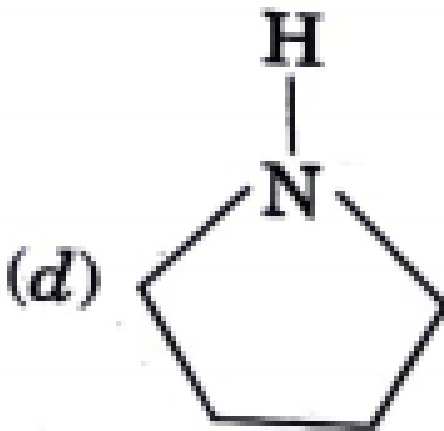
A.

B. 

(c)



C.



D.

**Answer:**

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**467.** Give reason for the following statement- Shaving blades are made of an alloy.

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468. Give reasons for the following statement- Safety Lockers are made up of an alloy



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469. Which of the following methods of preparation of amines will give same number of carbon atoms in the chain of amines as in the reactant?

- A. Reaction of nitrite with  $LiAlH_4$ .
- B. Reaction of amide with  $LiAlH_4$  followed by treatment with water.
- C. Heating alkylhalide with potassium salt of phthalimide followed by hydrolysis.
- D. Treatment of amide with bromine in aqueous solution of sodium hydroxide.

**Answer:**



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470. Which of the following cannot be prepared by Sandmeyer's reaction ?

- A. Chlorobenzene
- B. Bromobenzene
- C. Iodobenzene
- D. Fluorobenzene

**Answer:**



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471. Reduction of nitrobenzene by which of the following reagent gives aniline ?

- A. Sn/HCl

B.  $\text{Fe}/\text{HCl}$

C.  $\text{H}_2 - \text{Pd}$

D.  $\text{Sn}/\text{NH}_4\text{OH}$

**Answer:**

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472. Which of the following species are involved in the carbylamine test ?

A.  $\text{R} - \text{NC}$

B.  $\text{CHCl}_3$

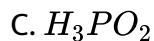
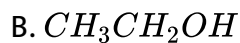
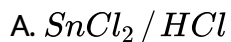
C.  $\text{COCl}_2$

D.  $\text{NaNO}_2 + \text{HCl}$

**Answer:**

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473. The reagents that can be used to convert benzenediazonium chloride to benzene are \_\_\_\_\_ .



**Answer:**



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474. Give reason for the following statement- Fish plates are made up of an alloy.



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475. Give reason for the following statement- Alanko is an alloy.

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476. Which of the following amines can be prepared by Gabriel synthesis.

- A. Isobutyl amine
- B. 2-Phenylethylamine
- C. N-methylbenzylamine
- D. Aniline

**Answer:**

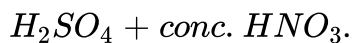
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477. Give reason for the following statement- Solder is an alloy.

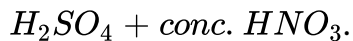
**478.** Discuss the following reactions :

Nitration of aniline

A. Acetyl chloride/pyridine followed by reaction with conc.



B. Acetic anhydride/pyridine followed by conc.



C. Dil. HCl followed by reaction with conc.  $H_2SO_4 + \text{conc. } HNO_3$ .

D. Reaction with conc.  $HNO_3 + \text{conc. } H_2SO_4$

**Answer:**

479. Give reason for the following statement- For welding of metallic bodies and filling cracks in the metals, an alloy is used.

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480. Match the reactions given in Column I with the statements given in Column II.

Column I	Column II
(a) Ammonolysis number of carbon atoms.	(i) Amine with lesser
(b) Gabriel phthalimide synthesis	(ii) Detection test for primary amines.
(c) Hoffmann Bromamide reaction	(iii) Reaction of phthalimide with KOH and R—X.
(d) Carbylamine reaction with $\text{NH}_3$ .	(iv) Reaction of alkylhalides

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481. Match the compounds given in Column I with the items given in Column II.

Column I	Column II
(a) Benzene sulphonyl chloride	(i) Zwitter ion
(b) Sulphanilic acid	(ii) Hinsberg reagent
(c) Alkyl diazonium salts	(iii) Dyes
(d) Aryl diazonium salts	(iv) Conversion to alcohols

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**482.** Give reasons for the following statement- Good quality electric wires and electric heaters are made up of an alloy.

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**483.** Assertion :Hoffmann bromamide reaction is given by primary amides. Reason : Primary amines are more basic than secondary amines.

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**484.** Give reason for the following statement- An alloy is not a metal.

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**485.** Assertion : N, N-Diethylbenzene sulphonamide is insoluble in alkali.

Reason : Sulphonyl group attached to nitrogen atom is strong electron withdrawing group.

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**486.** Explain the following statement- Magnesium is an alloy.

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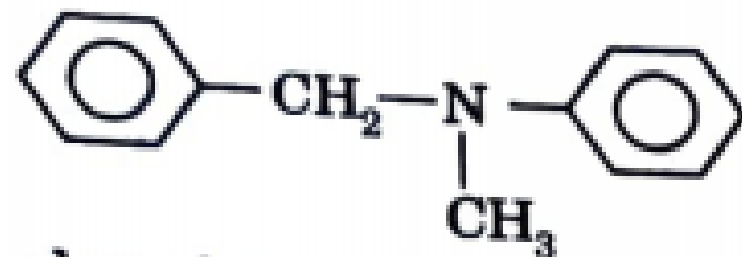
**487.** Describe the following statement- A mixture of Aluminium and magnesium makes an alloy which is used in the making of aircrafts and aeroplanes.

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488. Give reasons for the following statement- Brass is an alloy.

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489. Write the IUPAC name of :



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490. Explain the following : Arrange the following in increasing order of basic strength: Aniline, p-nitroaniline and p-methyl aniline.

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**491.** How will you convert.

Aniline into chlorobenzene.

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**492.** Why do amines act as nucleophiles ?

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**493.** Aniline dissolve in aqueous HCl. Why?

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**494.** Why does the reactivity of  $NH_2$  get reduced in acetanilide ?

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**495.** Why methyl amine has lower boiling point than methanol.

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**496.** Convert : 3-Methylaniline into 3-nitrotoluence

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**497.** Convert : Aniline into 1,3,5-tribromobenzene

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**498.** What is Gabriel's Phthalimide synthesis ?

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**499.** How do aromatic and aliphatic primary amines react with nitrous acid ?

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**500.** Why are aliphatic amines more basic than aromatic amines?

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**501.** Accomplish the following conversions.

Benzyl chloride to 2-phenylethanamine .

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**502.** Give reasons for the following statement- Wires, parts of the machines and utensils are made up of an alloy.

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**503.** How will you convert benzoic acid to aniline?

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**504.** Give reason for the following statement- Mixture of 70% of copper and 30% of zinc makes an alloy.

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**505.** Explain the following reaction reaction :

Sandmeyer's reaction.

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**506.** Give one example of Balz-schiemann reaction.

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507. Ethylamine is soluble in water whereas the aniline is not. Why?

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508. Give reason for the following statement- Bronze is an alloy.

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509. Aniline does not undergo Friedel-Crafts reaction. Explain.

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510. How will you convert 4-nitrotoluene to 2-bromobenzoic acid ?

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**511.** Give reasons for the following statement- 90% of Cu and 10% of Sn is used to make an alloy.

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**512.** Convert the following : acetaldehyde to ethylamine.

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**513.** Starting with aniline and using suitable reagents, outline the synthesis of m-bromochlorobenzene.

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**514.** Starting with aniline and using suitable reagents, outline the synthesis of p-nitrobenzene.

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**515.** Starting with aniline and using suitable reagents, outline the synthesis of 1, 2, 3-tribromobenzene .

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**516.** How does benzene diazonium chloride react with :

Phenol

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**517.** Give reason for the following statement- Utensils and religious idols are made up of an alloy.

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**518.** Describe the method for the identification of primary, secondary and tertiary amines. Also write chemical equations for the reactions involved.



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