



CHEMISTRY

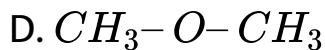
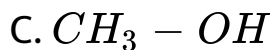
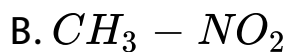
BOOKS - USHA CHEMISTRY (ODIA ENGLISH)

ORGANIC COMPOUNDS CONTAINING NITROGEN

Exercise

1. When methyl amine is treated with $NaNO_2$ and HCl, the product obtained is—

A. CH_4

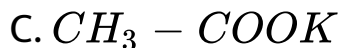
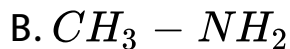
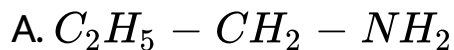


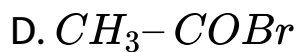
Answer:



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2. Reaction of $CH_3 - CONH_2$ with Br_2 and KOH gives — as the major product.





Answer:



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3. The number of isomeric amines represented by C_3H_9N is—

A. 3

B. 4

C. 5

D. 6

Answer:



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4. The reaction, $R - CN \xrightarrow[\text{(H)}]{LiAlH_4} R - CH_2 - NH_2$ is

called as—

A. Hofmann's bromamide reaction

B. Mendius reaction

C. Stephen's reduction reaction

D. Rosenmund's reaction

Answer:





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5. When ethyl iodide is treated with an alcoholic solution of silver nitrite the product is—

- A. Ethyl amine
- B. Nitroethane
- C. Silver iodide
- D. All of these

Answer:



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6. Nitroethane on heating with Sn and HCl produce—

- A. Ethyl amine
- B. ethyl hydroxyl amine
- C. ethyl cyanide
- D. Ethyl chloride

Answer:

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7. 1° , 2° and 3° -amines can be distinguished from each other by—

A. Action with nitrous acid

B. Carbyl amine reaction

C. Medius reaction

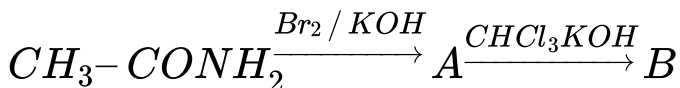
D. all of these

Answer:

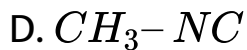
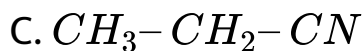
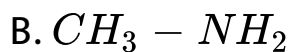


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8. Identify the end product (B) of reaction –



A. $CH_3 - CH_2 - NH_2$

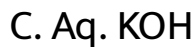
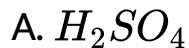


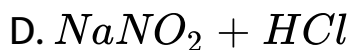
Answer:



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9. Acetamide is converted to methylamine when it is heated with—

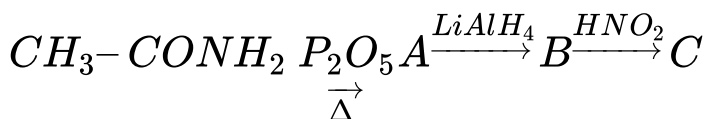




Answer:

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10. The end product (C) in the reaction is :



- A. Ethyl amine
- B. Ethyl cyanide
- C. Ethyl alcohol
- D. ethyl nitrite

Answer:

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11. How many primary amines are possible with formula $C_4H_{11}N$?

A. 1

B. 2

C. 3

D. 4

Answer:

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12. The 'N' atom of $CH_3 - NH_2$ is in which hybridisation state?

A. SP

B. SP^2

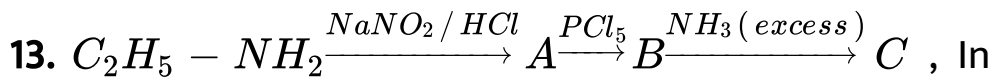
C. SP^3

D. None of these

Answer:



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the above sequence, 'C' is-

- A. Ethyl cyanide
- B. nitro-ethane
- C. Ethyl chloride
- D. ethyl amine

Answer:



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14. Which of the following will not give primary amine ?

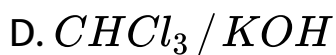
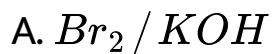
- A. Reduction of amides
- B. reduction of nitroalkanes
- C. reduction of alkyl cyanides
- D. reduction of isonitriles

Answer:



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15. Primary and secondary amines are distinguished by—

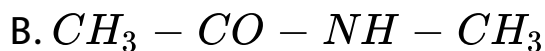
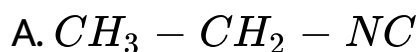


Answer:



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16. Which of the following gives primary amine on reduction?



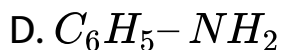
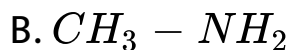
D. None of these

Answer:



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17. The most basic among the following is—



Answer:



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18. Lower amines are soluble in water due to—

A. Low molecular mass

B. Vander waal's force of attraction

C. dipole-dipole interaction

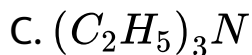
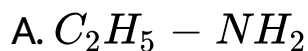
D. Hydrogen bonding

Answer:



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19. Which amine gives an alcohol with nitrous acid ?



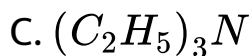
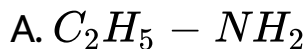
D. all of these

Answer:



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20. Which one can respond carbyl amine test ?



D. all of these

Answer:



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21. Aniline reacts with nitrous acid at 0 to 5° C giving the product—

A. Phenol

B. nitro benzene

C. Benzene diazonium chloride

D. Chlorobenzene

Answer:



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22. Among the following the most basic is—

A. Benzyl amine

B. aniline

C. P-nitroaniline

D. diethyl amine

Answer:



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23. Nitrobenzene on heating with tin and conc. HCl yields—

A. Benzene

B. aniline

C. Phenyl hydrazine

D. Chlorobenzene

Answer:

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24. Aniline reacts with acetyl chloride in presence of pyridine giving—

A. Acetanilide

B. benzamide

C. P-aminoactophenon

D. none of this

Answer:



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25. Benzene diazonium chloride on hydrolysis gives—

A. Chlorobenzene

B. Phenol

C. Aniline

D. benzene

Answer:



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26. When BDC is treated with Cu_2Cl_2 in HCl, chlorobenzene is formed. This reaction is called as—

- A. Etard reaction
- B. Perkin reaction
- C. Sand meyer reaction
- D. Fitting reaction

Answer:



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27. Complete the equation and name the products



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28. Complete the following equation :



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29. Write the IUPAC name of trimethyl amine.



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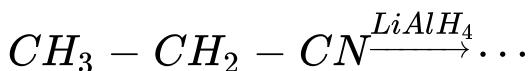
30. Arrange the different type amines in increasing order of their basic strength.

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31. Name the reagent used to distinguish between ethyl amine and diethyl amine.

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32. Complete the equation-



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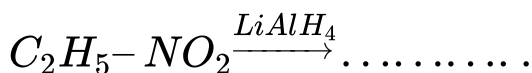
33. Out of ethyl amine and ethyl alcohol which is more soluble in water?

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34. Between ethyl alcohol and ethyl amine which has higher boiling point?

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35. Complete the equation.





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36. Out of ethyl amine and ethyl alcohol which is more soluble in water?



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37. Between methyl amine and dimethyl amine which is more basic ?



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38. Complete the equation. $C_2H_5-NO_2 \xrightarrow{Sn / HCl}$ ____



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39. $CH_3-CN \xrightarrow{Na / Alcohol} \text{_____}$ Complete the above equation and name the reaction.



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40. Fill in the blanks : $CH_3NH_2 + \text{___} + 3KOH \rightarrow$
 $\text{___} + 3KCl + 3H_2O$



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41. Between ethyl amine and dimethyl amine which has higher boiling point ?

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42. Write the isomers of the compound with MF: C_2H_7N .

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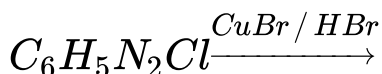
43. Identify A and B. $CH_3-Br \xrightarrow{AgNO_2} A \xrightarrow{Sn/HCl} B$

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44. $CH_3-CN \xrightarrow{Na / Alcohol} A \xrightarrow{C_2H_5Br (excess)} B$ Identify A and B.

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45. Complete the equation and name the reaction :



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46. Aniline reacts with mixture of $NaNO_2$ and HCl at $5^\circ C$ to give

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47. Arrange the following in increasing order of their basic strength : NH_3 , CH_3-NH_2 , $C_6H_5-NH_2$

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48. Lieberman nitroso reaction is used to detect _____.

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49. Alkyl isocyanide on reduction with $Na / alcohol$ yields.

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50. Arrange the following in increasing order of basic strength. Aniline, p-nitroaniline, p-toluidine.

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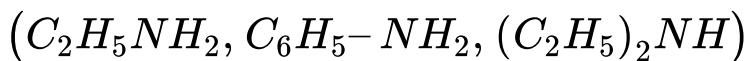
51. Write the IUPAC name of $(CH_3)_3C-NH_2$.

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52. Why is ethylamine more soluble in water than aniline ?

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53. Arrange the following in increasing order of solubility in water as well as basic strength :



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54. Name a test by which you can distinguish between aniline and benzyl amine.

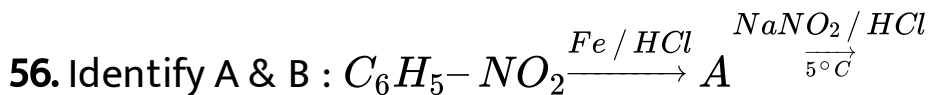


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55. Do the conversion : $CH_3-COOH \rightarrow CH_3-NH_2$



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57. Complete the equation :



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58. Complete the equation & name the reaction





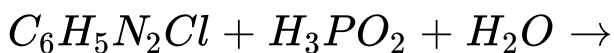
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59. Do the conversion : benzene to aniline.



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60. Complete the equation :



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61. Write the chemical reaction of aniline with acetyl chloride.



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62. Which amide will give ethylamine by Hoffman bromamide reaction ?



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63. Gabriel phthalimide process is used for synthesis of which type of amines.



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64. Identify A, B : $CH_3-Cl \xrightarrow{KCN} A \xrightarrow{LiAlH_4} B$



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65. Between $(C_2H_5)_2NH$ and $C_2H_5N(CH_3)_2$ which has higher boiling point ?



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66. BDC can be converted to idobenzene by reacting with_____



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67. The reaction of aniline with nitrous acid at 273-278

K is called as ___



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68. How will you prepare ethyl amine from methyl iodide ?



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69. Do the conversion ethyl amine \rightarrow methyl amine.



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70. Do the conversion – Methyl amine \rightarrow Ethyl amine.

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71. How does dimethyl amine react with acetyl chloride ?

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72. What happens when ethyl cyanide is reduced with $LiAlH_4$.

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73. How can you distinguish between ethyl amine and methyl amine ?

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74. Why methyl amine is more basic than aniline ?

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75. Arrange the different type amines in increasing order of their basic strength.

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76. How can you get ethyl amine from acetamide ?

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77. How can you get methyl amine from acetamide in a single step ?

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78. Give a method preparation of primary amine.

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79. Name the reagent used to distinguish between ethyl amine and diethyl amine.

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80. What happens when nitroethane is heated with Sn and hydrochloric acid ?

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81. What happens when ethanamide is heated with lithium aluminium hydride.

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82. How will you convert a primary amine to secondary amine ?

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83. Why is ethyl amine more basic than ammonia ?

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84. Write short notes on Hofmann's bromamide reaction.

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85. Why acetamide is less basic than ethyl amine ?

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86. How can you show that amines are basic ?

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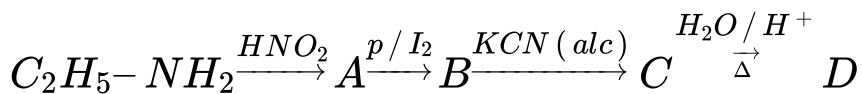
87. The number of isomeric amines represented by C_3H_9N is—

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88. What happens when ethyl amine is treated with $NaNO_2$ and HCl ?

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89. Identify A, B, C, D in the sequence of reaction.



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90. What is carbyl amine reaction ?

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91. How does ethyl amine react with ethyl bromide ?

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92. How does ethyl amine react with acetyl chloride ?

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93. What happens when methyl amine is treated with nitrous acid ?

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94. What is amine ? Name different types of amines.



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95. What is Mendius reaction ?



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96. What happens when ethyl bromide is treated with silver nitrite ?



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97. How is methyl amine converted to ethylamine ?

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98. What happens when propionamide is heated with alkaline solution of bromine ?

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99. Presence of $-NH_2$ group in benzene ring activates the ring for further substitution reaction, explain why ?

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100. Explain why p-Nitroaniline is less basic than aniline.

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101. How can you prepare fluorene using benzene diazonium chloride.

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102. Why does aniline not undergo Friedel-Crafts reaction?



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103. Do the conversion : Nitrobenzene \rightarrow benzoic acid.



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104. Arrange the following in decreasing order of basic strength. ethylamine, dimethyl amine, aniline, N - Methyl aniline.



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105. Complete the equation & name the reaction



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106. Do the conversion : benzene to aniline.

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107. Identify A and B : $C_6H_5-NH_2 \xrightarrow[0-5^\circ C]{HNO_2 + HCl} A \xrightarrow[CuCN]{KCN} B$

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

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109. Why does aniline not undergo Friedel Crafts reaction?

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110. Give a chemical test to distinguish between aniline and ethyl amine.

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111. Although– NH_2 group is o-and p-directing aniline on nitration gives a substantial amount of m-nitroaniline. Explain why ?

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112. Arrange the following in increasing order of basic strength. Aniline, p-nitroaniline, p-toluidine.

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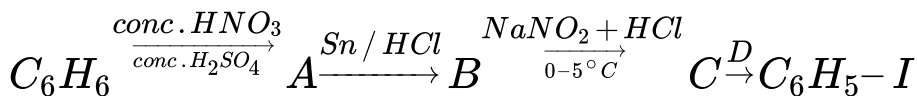
113. Do the conversion : aniline \rightarrow benzoic acid.

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114. Why is aniline less basic than ammonia ?

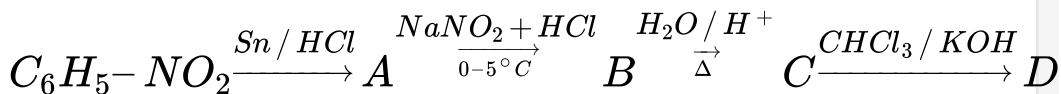
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115. Identify A, B, C, D :



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116. Identify A, B, C, D :



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117. Explain why aromatic primary amines can't be prepared by Gabriel phthalimide process.

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118. How does aniline react with acetic anhydride ?

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119. How does aniline react with aqueous solution of bromine ?



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120. Do the conversion : 3 - Methylaniline to - 3-Nitrotoluene .

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121. What are different types of amines ? Give two methods for preparation of primary amine.

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122. How does ethyl amine react with acetyl chloride ?



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123. How does ethyl amine react with–Methyl bromide ?

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124. How are primary amines prepared from – (i) Acid amides containing same number of carbon atom ?

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125. How are primary amines prepared from –Acid amides containing less number of carbon atom ?

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126. Give a method to distinguish between $1^\circ C$, $2^\circ C$ and $3^\circ C$ - amines.

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127. The number of isomeric amines represented by C_3H_9N is—

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128. Between methyl amine and dimethyl amine which is more basic ?

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129. Write one use of methyl amine.

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130. What is Sandmeyer's reaction ?

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131. How can you prepare aniline from benzene ?

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132. How does aniline react with $NaNO_2 / HCl$?

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133. Give one methods of preparation of benzene diazonium chloride. Write its synthetic applications for preparation of (a) chlorobenzene (b) phenol (c) benzene (d) iodobenzene.

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134. Do the conversion - Benzene \rightarrow phenol.

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135. How does benzoic acid react with ethyl alcohol ?

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136. How can you prepare aniline from benzene ?

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137. How does benzaldehyde react with phenylhydrazine ?



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