



CHEMISTRY

NCERT - NCERT CHEMISTRY(TELUGU)

AMINES

Example

1. Write chemical equations for the following reactions :

Reaction of ethanoic NH_3 with C_2H_5Cl .

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2. Write chemical equations for the following conversions :

 $CH_3-CH_2-Cl~~{
m into}~~CH_3-CH_2-CH_2-NH_2$





3. Write structures and IUPAC names of

the amide which gives propanamine by Hoffmann bromamide recation.

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4. Arrange the following in decreasing order of their basic strength :

 $C_{6}H_{5}NH_{2}, C_{2}H_{5}NH_{2}, (C_{2}H_{5})_{2}NH, NH_{3}$

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



1. Classify the following amines as primary, secondary or tertiary.



iii) $\left(C_2H_5\right)_2 CHNH_2$

iv) $\left(C_{2}H_{5}
ight) _{2}NH$

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2. i) Write the structures of different isomeric amines corresponding

to the molecular formula, $C_4H_{11}N$.

ii) Write IUPAC names of all the isomers.

iii) What type of isomerism is exhibited by different pairs of amines ?





benzene into aniline ?

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4. Arrange the following in increasing order of their basic strength.

 $C_2H_5NH_2, C_6H_5NH_2, NH_3, C_6H_5CH_2NH_2 \text{ and } (C_2H_5)_2NH$

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

i) $CH_{3}CH_{2}CH_{2}NH_{2}+HCl
ightarrow$

ii) $\left(C_{2}H_{5}
ight) _{3}N+HCl
ightarrow$

6. 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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7. Write the chemical reaction of aniline with benzoyl chloride and write the name of the product obtained.

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8. Write the 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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9. Convert :
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3-methyl aniline into 3-nitrotoluene.



2. Account for the following :

 pK_b of aniline is more then of methylamine.

3. Account for the following :

 pK_b of aniline is more then of methylamine.

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4. Arrange the following bases in decreasing order of pK_b values. $C_2H_5NH_2, C_6H_5NHCH_3, (C_2H_5)_2NH$ and $C_6H_5NH_2$.
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5. Describe a method for the identification of primary, secondary and

tertiary amines. Also write chemical equations of the reactions involved

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

 $\begin{array}{l} \text{(i)} CH_{3}CH_{2}l \xrightarrow{NaCN} A \xrightarrow{OH^{-}}_{\text{Partial hydrolysis}} B \xrightarrow{NaOH + Br_{2}} C \\ \text{(ii)}C_{6}H_{5}N_{2}Cl \xrightarrow{CuCN} A \xrightarrow{H_{2}O|H^{+}} B \xrightarrow{NH_{3}}_{\Delta} C \\ \text{(iii)} CH_{3}CH_{2}Br \xrightarrow{KCN} A \xrightarrow{LiAH_{4}} B \xrightarrow{HNO_{2}}_{0^{\circ}C} C \\ \text{(iv)} C_{6}H_{5}NO_{2} \xrightarrow{Fe/HCl} A \xrightarrow{NaNO_{2} + HCl} B \xrightarrow{H_{2}\emptyset H^{+}}_{\Delta} C \\ \text{(v)} CH_{3}COOH - \xrightarrow{NH_{3}}_{\Delta} A \xrightarrow{NaOBr} B \xrightarrow{NaNO_{2}/HCl} C \end{array}$

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7. An aromatic compound 'A' on treatment with aqueous ammonia and heating forms compound B which on heating with Br_2 and KOH forms compound 'C' of molecular formula C_6H_7N . Write the structures and IUPAC names of compounds A, B and C.

 $\begin{array}{l} \textbf{8. Complete the following reactions:} \\ \textbf{(i)} \ C_6H_5NH_2 + CHCl_3 + alc. \ KOH \rightarrow \\ \textbf{(ii)} \ C_6H_5N_2Cl + H_3PO_2 + H_2O \rightarrow \\ \textbf{(iii)} \ C_6H_5NH_2 + H_2SO_4(\text{conc}) \rightarrow \\ \textbf{(iv)} \ C_6H_5N_2Cl + C_2H_5OH \rightarrow \\ \textbf{(v)} \ C_6H_5NH_2 + Br_2(aq) \rightarrow \\ \textbf{(vi)} \ C_6H_5. \ NH_2 + (CH_3CO)_2O \rightarrow \\ \textbf{(vii)} \ C_6H_5N_2Cl \ \frac{(i) \ HBF_4}{(ii) \ NaNO_2/Cu. \ \Delta} \end{array}$

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

10. Write the reactions of aromatic amines with nitrous acid

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11. Explain why amines are less acidic than alcohols of comaparable

molecular masses.