

QB365 Question Bank Software Study Materials

Organic Nitrogen Compounds Important 2 Marks Questions With Answers (Book Back and Creative)

12th Standard

Chemistry

Total Marks : 40

2 Marks

20 x 2 = 40

- 1) Write down the possible isomers of the $C_4H_9NO_2$ give their IUPAC names.

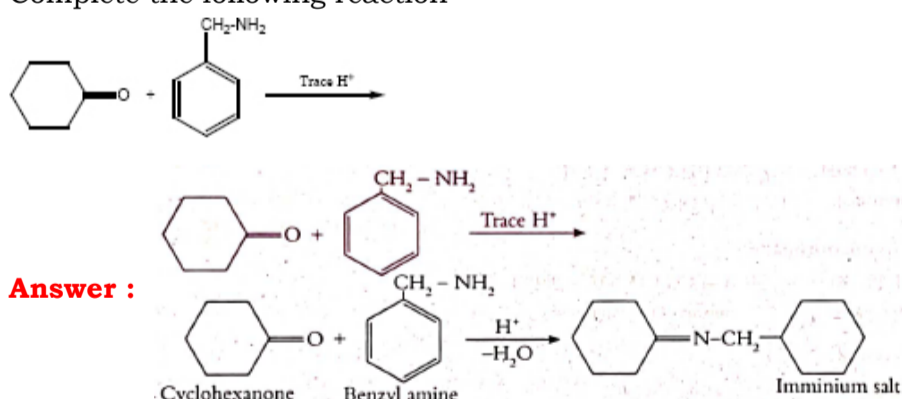
Answer :

Isomerism	Structural formula of isomers
Chain isomerism: They differ in the length of carbon chain.	$CH_3CH_2CH_2CH_2 - NO_2$ and $CH_3CH(CH_3)CH_2 - NO_2$ 1 - nitrobutane 2 - methyl - 1-nitropropane
Position isomerism: They differ in the position of nitro group.	$CH_3CH_2CH_2CH_2 - NO_2$ $CH_3CH(NO_2)CH_2CH_3$ and $CH_3CH_2CH(NO_2)CH_3$ 1 - nitrobutane 2 - nitrobutane 2 - methyl - 2-nitropropane
Functional isomerism: Nitroalkanes exhibit functional isomerism with alkylnitrites	$CH_3CH_2CH_2CH_2 - NO_2$ and $CH_3CH_2CH_2CH_2 - O - N = O$ 1 - nitrobutane butyl nitrite

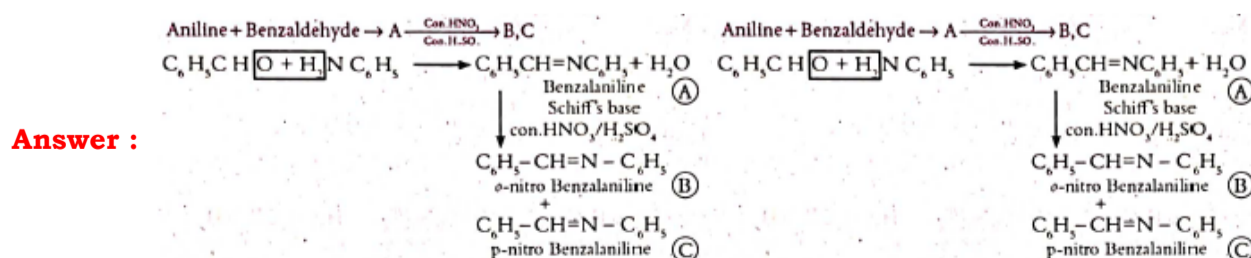
- 2) What is 'spirit of nitre'? Give its use.

Answer : 4% solution of ethylnitrite in alcohol is known as sweet spirit of nitre and is used as diuretic.

- 3) Complete the following reaction



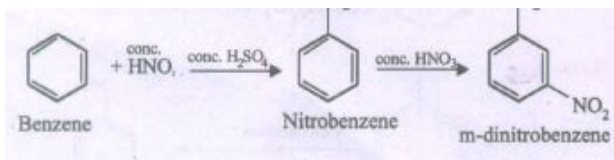
- 4) Identify A aniline + benzaldehyde \rightarrow A



- 5) How will you convert benzene to m-dinitro benzene?

Answer : Benzene on reaction with a mixture of cone. HNO_3 and cone. H_2SO_4 produces nitro benzene as product which on further nitration will result in the formation of m-dinitrobenzene.

NO₂NO₂

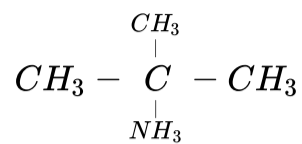


6) Give the structural formula of

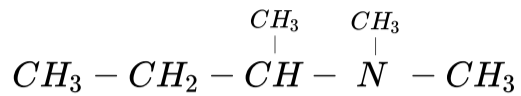
i) 2-amino-2-methyl propane

ii) 2-(N, N- dimethyl) amino butane

Answer : (i) 2-amino-2-methyl propane



(ii) 2-(N, N- dimethyl) amino butane



7) Write the name and structure of four isomeric amines having the molecular formula C₃H₉N

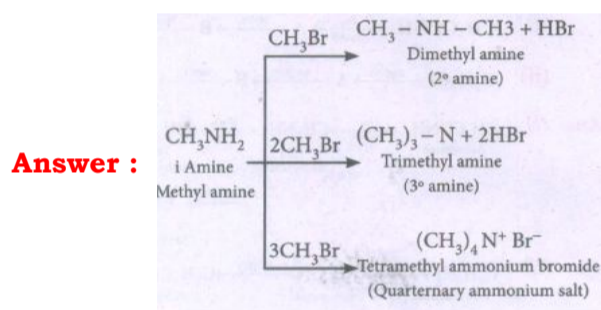
Answer : (i) CH₃ - CH₂ - CH₂NH₂ 1-amino propane

(ii) CH₃ - CH - CH₃ 2-amino propane

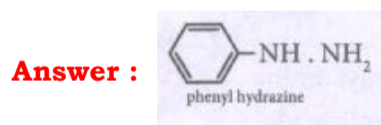
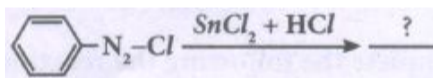
(iii) CH₃ - CH₂ - N - CH₃ N - Methyl amino ethane

(iv) CH₃ - N - CH₃ N,N-Dimethyl methanamine

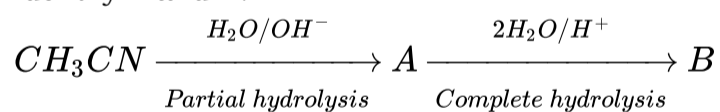
8) Convert methyl amine (1° primary amine) to 2°, 3° amine and Quarternary ammonium salt.



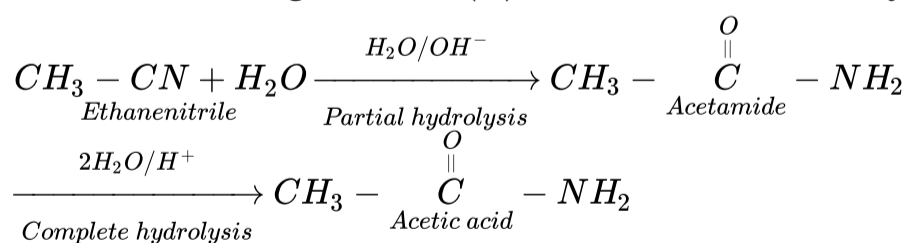
9) Complete the following reaction.



10) Identify A and B.



Answer : On boiling with alkali (or) a dilute mineral acid the cyanides are hydrolysed to give carboxylic acids.

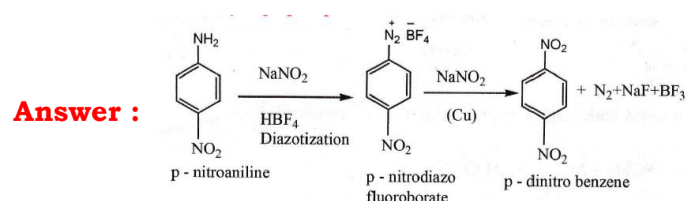


11) Give any two uses of nitrobenzene.

Answer : (i) Nitrobenzene is used to produce lubricating oils in motors and machinery.

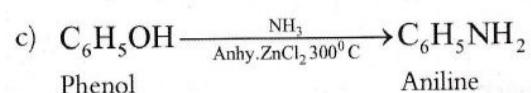
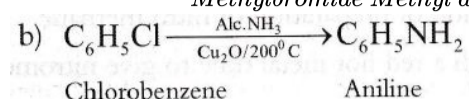
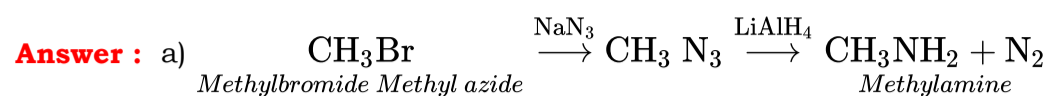
(ii) It is used in the manufacture of dyes, drugs, pesticides, synthetic rubber, aniline and explosives like TNT, TNB.

12) How will you prepare p - dinitrobenzene?

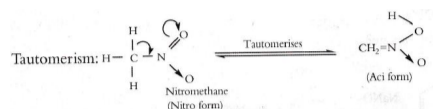


13) How are the following conversions effected?

- a) Methyl bromide → Methylamine
- b) Chloro benzene → Aniline
- c) Phenol → Aniline

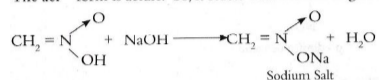


14) Nitrobenzene is soluble in NaOH. Why?



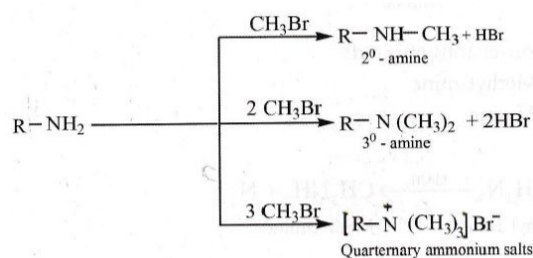
Answer :

The aci-form is acidic. So, it reacts with NaOH to give sodium salt of nitrolic acid



15) Write a note on alkylation of amines.

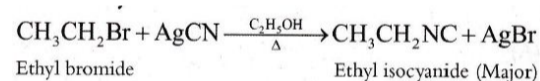
Answer : 1° amines reacts with alkyl halides to give successively 2° and 3° amines and quaternary ammonium salts



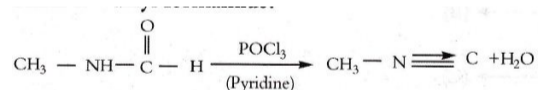
16) How will you prepare ethyl isocyanide from the following :

- a) Ethyl bromide
- b) N - ethyl formamide

Answer : a) From ethyl bromide:

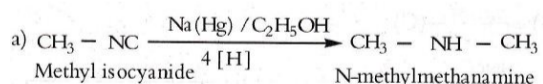


b) From N - alkyl formamide:

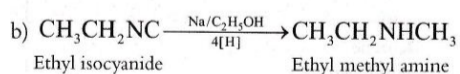


17) What happens when the following are reduced with Na/C₂H₅OH(or)Ni/H₂

- a) CH₃NC
- b) CH₃CH₂NC



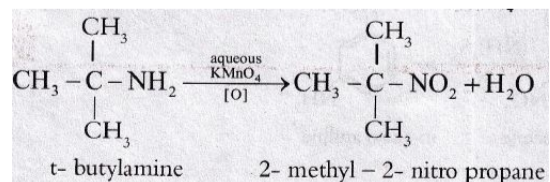
Answer :



18) What happens when

- iii. Oxidation of tert-butylamine with KMnO₄

Answer : iii) Oxidation of tert-butylamine with KMnO₄:

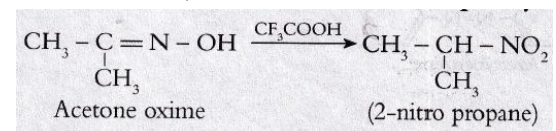


It gives 2-methyl-2-nitro propane is obtained.

19) What happens when

- iv. Oxidation of acetoneoxime with trifluoroperoxy acetic acid.

Answer : iv) Oxidation of acetoneoxime with trifluoroperoxy acetic acid.



It gives 2 - nitro propane.

- 20) How will you convert nitrobenzene into
vi. N - phenylhydroxylamine

Answer : Nitrobenzene into N - phenyl hydrazobenzene

