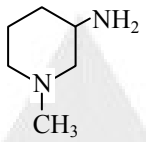
NEET CHEMISTRY

Topic: Nitrogen containing organic compound

Q.1 Compound is a



(1) 1º and 3º amine

(2) Only primary amine

(2) 2º and 3º amine

(4) Only secondary amine

Q.2 The third member of homologous series of dimethyl amine -

(1) $CH_3–CH_2–NH–CH_2–CH_3$

(2) $CH_3–NH–CH_2–CH_2–CH_3$

(3) $CH_3–NH–CH(CH_3)_2$

(4) (2) and (3) are correct

Q.3 Tertiary butyl amine is a-

(1) 1º Amine (2) 2º Amine

(3) 3º Amine (4) Quaternary salt

Q.4 Aliphatic amines are ..... basic than NH_3, but aromatic amines are ..... basic than NH_3 -

(1) More, less (2) Less, more

(3) Both (1) and (2) (4) None of these

Q.5 Suitable explanation for the order of basic character $(CH_3)_3N < (CH_3)_2NH$ is -

(1) Steric hindrance by bulky methyl group

(2) Higher volatility of 3ºamine

(3) Decreased capacity for H-bond formation with H_2O

(4) Decreased electron- density at N atom

Q.6 The basic character of amines can be explained -

(1) In terms of Lewis and Arrhenius concept

(2) In terms of Lowry and Bronsted concept

(3) In terms of Lewis and Lowry Bronsted concept

(4) Only by Lewis concept

Q.7 The number of π bonds present in CN–CH=CH–CN -

(1) 5 (2) 4

(3) 3 (4) 2

Q.8 Hinsberg's reagent is -

(1) Diethyl oxalate

(2) Benzyl chloride

(3) Benzene sulphonyl chloride

(4) None of these

Q.9 Hydrolysis of alkyl isocyanide yields -

(1) Primary amine (2) Tert. amine

(3) Alcohol (4) Aldehyde

Q.10 How many isomeric amines can have the formula $C_4H_{11}N$ -

(1) Five (2) Six

(3) Seven (4) Eight

Q.11 $C_2H_5NH_2$ cannot be prepared by the reduction of -

(1) $C_2H_5NO_2$ (2) $CH_3CH = NOH$

(3) C_2H_5NC (4) CH_3CN

Q.12 A mixture of 1º, 2º and 3º amine is formed in the reaction -

(1) 1º Amide + caustic potash + bromine

(2) Methyl halide and ammonia

(3) Cyclic imide + $H_3O^{\oplus}$

(4) Alkyl isocyanide + H_2

Q.13 The presence of primary amines can be confirmed by -

(1) Reaction with HNO_2

(2) Reaction with $CHCl_3$ and alc. KOH

(3) Reaction with Grignard reagent

(4) Reaction with acetyl chloride

Q.14 Ethylamine can be prepared by the all except -

(1) Curtius reaction

(2) Hofmann reaction

(3) Mendius reaction

(4) Reduction of formaldoxime

Q.15 Ammonolysis of alcohol, i.e. -

$xCH_3OH + yNH_3$ Products

(1) CH_3NH_2

(2) $(CH_3)_2NH_2$

(3) $(CH_3)_3N$

(4) A mixture of amines

Q.16 The compound obtained by the reaction between primary amine and aldehyde is -

(1) An amide (2) Imine

(3) Nitrite (4) Nitro

Q.17 Which one of the following behaves both as nucleophile and as an electrophile ?

(1) $CH_3C{\equiv}N$ (2) CH_3–OH

(3) $H_2C{=}CH{-}CH_3$ (4) CH_3–NH_3

Q.18 A primary nitroalkane is treated with nitrous acid, which of the following will be the main product :

(1) pseudonitrol (2) nitrolic acid

(3) a primary amine (4) a primary alcohol

Q.19 Acetonitrile has the structure :

(1) C_2H_5NC (2) C_2H_5CN

(3) CH_3NC (4) CH_3CN

Q.20 Which of the following method is generally not employed for the separation of primary, secondary and tertiary amines ?

(1) fractional distillation

(2) Hinsberg's method

(3) Hofmann's method

(4) Filteration

Q.21 How many primary amines are possible for the formula $C_4H_{11}N$?

(1) 1 (2) 2

(3) 3 (4) 4

Q.22 $CH_3NH_2 + CHCl_3 + 3KOH \rightarrow X + Y + 3H_2O$; compounds X and Y are -

(1) $CH_3CN + 3KCl$

(2) $CH_3NC + 3KCl$

(3) $CH_3CONH_2 + 3KCl$

(4) $CH_3NC + K_2CO_3$

Q.23 $HCONHR \xrightarrow[\Delta]{P_2O_5}$ (product) + H_2O :

(product) in the above reaction is -

(1) RCH=NOH (2) R–N=C=O

(3) R–C≡N (4) $R-\overset{\oplus}{N}\equiv\overset{\ominus}{C}$

Q.24 $-CONH_2 \xrightarrow{\text{Reduction}} -CH_2NH_2$

In above reaction hybridisation state of carbon changes from ..... → .....

(1) $sp \longrightarrow sp^2$ (2) $sp \longrightarrow sp^3$

(3) $sp^2 \longrightarrow sp^3$ (4) $sp^2 \longrightarrow sp$

Q.25 Mendius reaction involves the reduction of -

(1) Cyanoalkanes (2) Alkyl isocyanides

(3) Oximes (4) Nitroalkanes

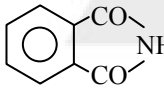
Q.26 A reaction used in descending a homologous series would be -

(1) $RCONH_2 + Br_2 + KOH$

(2) $RCH_2Cl + KCN$

(3) $RNH_2 + CHCl_3 + KOH$

(4) None of the above

Q.27  $\xrightarrow{KOH}$ A $\xrightarrow{C_2H_5Br}$ B $\xrightarrow{H_2O}$ C + D, C and D in the sequence are -

(1) Benzoic acid + aniline

(2) Phthalic acid + ethylamine

(3) Phthalic acid + aniline

(4) Benzoic acid + ethylamine

Q.28 $CH_3CONH_2 \xrightarrow{PCl_5} (A) \xrightarrow[\text{(partial) reduction}]{H_2O} (B), (C)$

The functional groups of (B) and (C) respectively are-

(1) $-\overset{\overset{O}{\|}}{C}-NH_2$, $-NH_2$ (2) $-\overset{\overset{O}{\|}}{C}-NH_2$, $-COOH$

(3) $-CN$, $-NH-$ (4) $-\overset{\overset{O}{\|}}{C}-OH$, $-\overset{|}{N}-$

Q.29 On reduction of Schiff's base we get -

(1) Primary amine (2) Secondary amine

(3) Anils (4) Anilide

Q.30 Alkyl halide reacts with AgCN to form -

(1) Alcohol (2) Cyanide

(3) Isocyanide (4) Both (2) and (3)

ANSWER KEY

Que.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ans.	1	4	1	1	1	3	1	3	1	4
Que.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Ans.	3	2	2	4	4	2	1	2	4	4
Que.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Ans.	4	2	4	3	1	1	2	1	2	4