

CHEMISTRY

BOOKS - R SHARMA CHEMISTRY (HINGLISH)

AMINES

Follow Up Test 1

1. The general formula of the open chain saturated monoamines

is .

A.
$$C_nH_{2n+2}N$$

B.
$$C_nH_{2n+3}N$$

C.
$$C_nH_{2n+1}N$$

D. $C_n H_{2n} N$

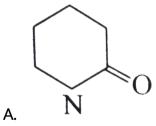
Answer: B

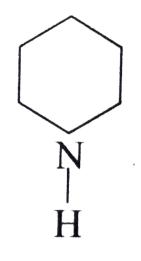


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Follow Up Test

1. Which of the following compounds is an amine?





Answer: D

D.



2. A secondary amine is a compound which possesses .

A. one - NH_2 group bonded to the second carbon of the main carbon chain

B. one $-NH_2$ group boned to a secondary carbon atom

C. one-NH-group bonded to two alky1 or ary1 groups

D. two NH_2 groups

Answer: C



3. Among the following compounds which one is a heterocyclic tertiary amine ? .

- A. Pyridine
- B. Piperidine
- C. Pyrrole
- D. N,N-Dimethylaniline

Answer: A



4. Which of the following compounds is a tertiary amine?.

A.
$$CH_3$$
 $C \atop \mid C_{6H_5} HNH_2$

$$\mathsf{B.}\,CH_2=CHCH_2NHCH_3$$

$$D$$
.

Answer: C



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5. Which of the following compounds is a quaternary.

A.
$$(CH_3)_3 \overset{+}{N} HBr^-$$

- B. $C_2H_5\overset{+}{N}H_2CH_3Br^-$
- C. $C_2H_5\overset{+}{N}(CH_3)_3Br^-$
- D. $CH_3\overset{+}{N}H_3Br^-$

Answer: C



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6. Which of the following compounds possesses a chiral nitrogen atom ?

A.
$$CH_3CH_2\stackrel{|}{N}CH_2CH_3$$

 CH_3

 $\mathsf{B.}\ CH_3CH_2NHCH_2CH_3$

C.
$$CH_3CH_2CH_2\ \stackrel{|}{N}\ CH_2CH_3$$

 NH_2

D.
$$CH_3CH_2\stackrel{|}{C}HCH_3$$



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7. Which of the following compounds exists a nonresolvable racemic mixture .

$$A.$$
 N

$$B.$$
 NH₂

 NH_2

Answer: D



8. Which of the following compounds is resolvable?.

A.
$$CH_3CH_2CH_2CH(CH_3)NH_2$$

B.
$$\begin{bmatrix} CH_2 = CHCH_2N(CH_3)(CH_2H_5) \end{bmatrix}^+ I^ (CH_3)_2C$$
 \ddot{N}
 C
 H_2

D. All of these

Answer: D



9. The hybridization states of the nitrogen atom in pyridine piperidine and pyrrole are respectively

- A. sp^2 , sp^3 and sp^2
- $B. sp^2, sp^2 \text{ and } sp^2$
- $\mathsf{C.}\,sp^3,sp^3 \; \mathrm{and} \; sp^3$
- $D. sp^2, sp^3 \text{ and } sp^3$

Answer: A



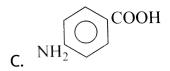
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10. Which of the following is called anthranilic acid?.





B. NH_2



D. None of these

Answer: A



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11. The IUPA name of t-butylamine is

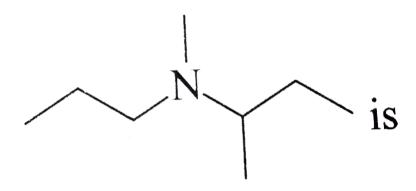
- A. 1,1-dimethyethanamine
- B. 2-methylpropan-1amine
- C. N,1-dimethy-1-N-propylpropanamine
- D. s-butylmethy1-n-propylamine

Answer: D



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12. The IUPAname of the copound



- A. N-Mehty1-N-propylbutan-2-amine
- B. N,3-dimethy1-N propylpropan -3-amine
- C. N,1-dimehty1-N-propylpropanamine
- D. s-butylmethy1-n-propylamine

Answer: A



A. t-Butylamine		
B. Isobutylamine		
C. t-Butylamine		
D. All of these		
Answer: D		
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14. The total number of constitutional isomers having the		
molecular formula C_3H_9N is .		
A. Five		
B. four		

13. Which of the following is a primary amine .?

C.	two
D.	three

Answer: B



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15. Isobutylamine and t-butylamine are

- A. chain isomers
- B. position isomers
- C. both (1) and (2)
- D. functional isomers

Answer: C



16. How many primary amines including stereoisomers are possible for the molecular formula $C_4H_{11}N$.

- A. Five
- B. four
- C. three
- D. two

Answer: A



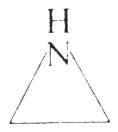
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17. Which of the following names are incorrect.

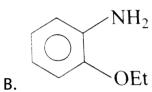
Methylaniline

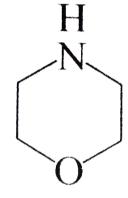
Propanediamine

N-Penthy-2-Propylamine	
m-Xylidine .	
A. (i),(ii)	
B. (i),(ii),(iii)	
C. (i),(ii),(iii),(iv)	
D. (i),(iii),(iv)	
Answer: C	
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18. Which of the following compounds is known is o-phenetidine	
?.	



A.





Answer: B

C.



19. During the reduction of nitro compound to an amine the oxidation number of nitrogen changes by

- A. six units
- B. five units
- C. four units
- D. three units

Answer: A



20. Reduction of nitrobenzene with zinc dust and aqueous ammonium chloride yields

A. N-phenylhydroxylamine

- B. aniline
- C. p-aminophenol
- D. azobenzene

Answer: A



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21. When reduction of nitrobenzene is carride out in alkaline medium it forms different products depending upon the nature of the reducing agent Azoxybenzene is obtained when nitrobenzene is reduced with

- A. $LiAIH_4$ in ether
- B. $Na_3AsO_3 \, / \, NaOH$
- C. $Zn/NaOH, CH_3OH$

D. Zn/NaOH

Answer: B

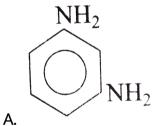


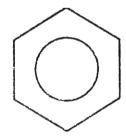
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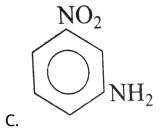
22. The product of the following reaction .

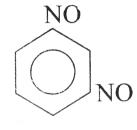


В.









Answer: C

D.



23. Consider the following sequence of reactions

$$C_6H_5CH_2I\stackrel{\mathit{KCH}}{\longrightarrow} A\stackrel{\mathit{H}_2/\mathit{Ni}}{\longrightarrow} B$$

the final product (B) is .

A.
$$C_6H_5CH_2CH_2NH_2$$

B. $C_6H_5CH_2NH_2$

 $C. C_6H_5NH_2$

D. $C_6H_5NHCH_3$

Answer: A



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24. Acetone oxime on catalytic hydrogenation gives

A. ethylamine

B. ethylmethylamine

C. isopropylamine

D. n-propylamine

Answer: A

25. The final product formed in the reaction

$$C_6H_5C\equiv CH \stackrel{H_2SO_4}{\longrightarrow} A \stackrel{NH_2OH}{\longrightarrow} B \stackrel{1\:.\:LiAIH_4}{\longrightarrow} C$$
 is .

A. 📄

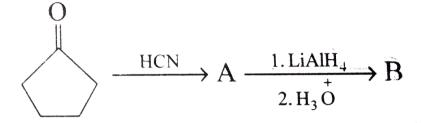
B. $C_6H_5CH_2NHCH_3$

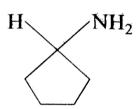
 $\mathsf{C.}\, C_6H_5CH_2CH_2NH_2$

Answer: B

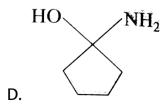


26. The end product (B) of the reaction





В.





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27. The end product (B) of the reaction sequence

$$\begin{array}{c}
OH \\
\xrightarrow{1. PCC} \\
2. NH_2OH
\end{array}
\xrightarrow{1. Na, C_2H_5OH} B$$
is.

$$CH_2NH_2$$

$$NH_2$$

$$N - OH$$

$$D. \frac{N - OC_2 H_5}{N}$$

Answer: B



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28. Consider the following sequence of reactions

$$CH_2 = CHCH = CH_2 \xrightarrow{Br_2(\,1mole\,)} A \xrightarrow{1KCN\,(\,excess\,)} B \,.$$

A.
$$CH_2 = CH - \stackrel{||}{C}H - CH_2NH_2$$

 NH_2

B.
$$NCCH_2CH = CHCH_2CH$$

$$\mathsf{C.}\,H_2N(CH_2)_6NH_2$$

D.
$$CH_2=CH-\displaystyle\mathop{C}_{|CH_2NH_2}H_2-CH_2NH_2$$

Answer: C

29.
$$CH_3CH_2OH \xrightarrow{K_2Cr_2C_2} A \xrightarrow{SOCI_2} B \xrightarrow{NH_3} C \xrightarrow{1LiAIH} D$$

The product D in the above sequence of reactions is

A.
$$CH_3NH_2$$

B. $CH_3CH_2NH_2$

C. $CH_3CH_2CH_2NH_2$

D. $(CH_3)_2CHNH_2$

Answer: B



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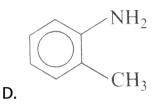
30. $C_6H_5CH_2I \stackrel{NaN_3}{\longrightarrow} A \stackrel{1.LAH}{\stackrel{2H_2O}{\longrightarrow}} B$

The product \boldsymbol{B} in the above sequence of reactions is

A. $C_6H_5NH_2$

B. C_6H_6

C. $C_6H_5CH_2NH_2$



Answer: C



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31. $H_2C=CHCH_2Br+N_3^ightarrow A \xrightarrow[1LiAIH_4]{2.H_2O} B$

Identify compound ${\cal B}$.

A. $CH_3CH_2CH_2NH_2$

B. $CH_3CH(NH_2)CH_3$

$$\mathsf{C.}\,CH_2 = CHCH_2NH_2$$

D.
$$H_2NCH_2CH_2CH_2NH_2$$

Answer: C



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32.
$$CH=CH \xrightarrow{1\% HgSO_4} A \xrightarrow{NH\,,H_2\,,Ni} B \xrightarrow{A \#_2SO_4} A \xrightarrow{\Lambda}_{press} B$$

The Prodcut B in the above sequence of reaction is

A.
$$CH_3NH_2$$

B.
$$CH_3CH_2NH_2$$

C.
$$CH_3CH = NH$$

D.
$$CH_3CH(OH)NH_2$$

Answer: B

33.
$$CH_3CN \xrightarrow{1.SnCI_2/HCI} A \xrightarrow{NH_3} B$$

The product B in the above sequence of reactions is

A.
$$CH_3CH = NH$$

B.
$$(CH_3)_2CHNH_2$$

C.
$$CH_3CH_2NH_2$$

D.
$$CH_3NH_2$$

Answer: C



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34. Which of the following reactions leads to the formation of a primary amine ? .

A.
$$Et_2C=O+rac{H}{(DMF)}COMe_2\stackrel{\Delta}{\longrightarrow}$$

B.
$$PhCOCH_3 + \overset{+}{N}H_4HCO_2^- \overset{\Delta}{\longrightarrow}$$

C. Cyclohexanone
$$+DMF \stackrel{\Delta}{\longrightarrow}$$

D. All of these

Answer: B



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35. Gabried synthesis is not a viable method for preparing

- (i) t-butylamine
- (ii) neopentylamine
- (iii) diethylamine
- (iv) p-toluidine.

A. (i),(iv)

- B. (i),(ii),(iv)
- C. (i),(ii),(iii),(iv)
- D. (i),(iii),(iv)

Answer: C



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36. Acetamide is treated separaately with the following reagents

Which one of these would give methylamine?.

- A. Hot conc H_2SO_4
- B. $NaOH + Br_2$
- C. Sodalime
- D. PCI_5

Answer: B



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37. Among the following compounds the one which will produce

1-phenylethanamine in Hofmann hypobromite reaction is

- A. N-phenylethanamide
 - B. 3-phenylethanamide
 - C. 2-phenylethanamide
 - D. 2-phenylethanamide

Answer: D



38. The reaction of (S)-2 methybutanamide with Br_2 and Oh^- produces on optically active amine The product is .

- A. Rsec-butylamine
- B. (S)-sec-butylamine
- C. (\pm) sec-butylamine
- D. (R)-iso butylamine

Answer: B



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39. Consider the following sequence of reactions

 $CH_3COOH \stackrel{SOCI_2}{\longrightarrow} A \stackrel{NH_2OH}{\longrightarrow} B \stackrel{HCI}{\longrightarrow} C$ The end product 'C' is .

A. CH_3NH_2

B. $CH_3CH_2NH_2$

 $\mathsf{C}.\left(CH_{3}\right)_{2}CHNH_{2}$

D. A mixture of all the

Answer: A



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40. In the following sequence of reactions

$$(CH_3)_2CO \xrightarrow{HN_3} A \xrightarrow{H_2O} B$$

The end product 'B' is .

A. $CH_3CH_2NH_2$

 $\mathsf{B.}\, CH_3NH_2$

C. $CH_3CONHCH_3$

D. $(CH_3)_2CHNH_2$

Answer: B



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41. Ritter reaction is a good method for preparing primary amines containing a .

A. primary alky1 group

B. secondary alky1 group

C. tertiary alky1 group

D. quaternary alky1 group

Answer: C



42. The end prouct (B) formed in the reaction

 $RNC \stackrel{HgO}{\longrightarrow} A \stackrel{KOH}{\stackrel{\Delta}{\longrightarrow}} B$ is .

- A. RNH_2
- B. RCH_2NH_2
- C. $RNHCH_3$
- D. RNHR

Answer: A



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43. Which of the following reacts with Grignard reagent to yield a primary amine ?

A. CH_3ONH_2

- B. $CINH_2$
- C. Both of these
- D. None of these

Answer: C



- **44.** The reaction $CH_3I+NH_3(excess) \xrightarrow{1.heat} CH_3NH_2+HI$ is an example of a
 - A. unimolecular nucleophilic substitution reaction
 - B. bimolecular nucleophilic substitution reaction .
 - C. unimolecular eletrphilic substitution reaction
 - D. bimolecular electrophilic substitution reaction .

Answer: B



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45. Predict the product of the following reaction $C_6H_5CH_2I \xrightarrow[2.H_2,Ni]{1.CH_3NH_2,heat}.$

A.
$$C_6H_5NH_2$$

B.
$$(C_6H_5)NH$$

C.
$$(CH_3)_2NH$$

D.
$$C_6H_5NHCH_3$$

Answer: D



46. Consider the following sequence of reactions

$$\xrightarrow{base} A \xrightarrow{1.LiAIH_4,ether} E$$

The end product B is .

- A. $CH_3CH_2NHCH_3$
- B. $CH_3CH_2NHCH_2CH_3$
- C. $CH_3CH_2NHCOCH_3$
- D. CH_3CH_2NHCHO

Answer: B



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47. The end product C in the following sequence of reactions

$$CaNCN \stackrel{NaOH}{\longrightarrow} A \stackrel{CH_3I\,(\,2moles\,)}{\longrightarrow} B \stackrel{H^+}{\longrightarrow} C$$
 is .

A.
$$(CH_3)_2CHNH_2$$

B. $(CH_3CH_2)_2NH$

 $\mathsf{C}.\left(CH_{3}\right)_{2}NH$

D. $H_2NCH_2CH_2NH_2$

Answer: C



48. Predict the end product of the following sequence of reactions

$$C_6 h_5 N H_2 \xrightarrow[\Delta]{CH_3I\,(\,2mo1\,)} A \xrightarrow[\Delta]{HNO_2} B \xrightarrow[\Delta]{NaOH} C \,.$$

- A. $(C_6H_5)_2NH$
- B. $C_6H_5NHCH_3$
- $\mathsf{C.}\left(CH_{3}\right)_{2}NH_{2}$

D. $(CH_3)_2NH$

Answer: D



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49. The end product of the following sequence of reactions

 $CH_3NH_2 \stackrel{NaOCI}{\longrightarrow} A \stackrel{C_6H_5MgI}{\longrightarrow} B$ is .

A. $CH_3NHC_6H_5$

B. $(CH_3)_2NH$

C. $CH_3CH_2NHCH_3$

D. A mixture of all the

Answer: A



50. The major product (X) of the reaction

 $CH_3CH_2NH_2 + HCHO + HCOOH \stackrel{\Delta}{\longrightarrow} X$ is .

- A. $(CH_3CH_2)_2NH$
- B. $(CH_3)_2NH$
- C. CH_3CH
- D. A mixture of all the

Answer: C



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51. Which of the following compounds gives a tertiary amine on reduction ? .

A. Nitriles

B. Amides
C. Oximes
D. Nitroalkanes
Answer: B
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52. When tetramethylammonium hydroxide is heated in aqueous solution under pressure the product is .

- A. CH_3NH_2
- B. $(CH_3)_2NH$
- $\mathsf{C}.\,(CH_3)_3N$
- D. A mixture of all the three amines

Answer: C



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53. The major product (X) of the reaction

$$(CH_3)_3CNH_2 + {\mathop{HCHO}\limits_{excess}} + {\mathop{HCOO}\limits_{excess}} H \stackrel{100^{\circ}C}{\longrightarrow} X$$
 is .



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54. The end product of the following of reactions is

$$C_6H_5 \xrightarrow[Fe]{Br2} A \xrightarrow[Et_2O]{Mg} B \xrightarrow{(\mathit{CH}_3)_2\mathit{NCI}} C \ .$$

$$H_3C$$
 NH_2

B.
$$(C_6H_5)_3N$$

C.
$$(CH_6H_5)NCH_3$$

D.
$$C_6H_5N(CH_3)_2$$

Answer: D



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55. An amine (X) on being heated with an excess of methy1 bromide produces diethyldimethy lammonium bromide The amine (X) is .

- A. $C_2H_5N(CH_3)_2$
- $\mathsf{B.}\, C_2H_5NHCH_3$
- $\mathsf{C.}\left(C_{2}H_{5}
 ight)_{2}NH$
- D. $C_2H_5NH_2$

Answer: C



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56. Which of the following reagents is used for the Hinsberg method to separate amines?.

A.
$$CH_3SO_2CI$$

B. C_6H_5COCI

C. CH_3COCI

D. $C_6H_5SO_2CI$

Answer: D



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57. A mixture of ethano1 vapour and ammonia is heated under pressure in the presence of alumina as a catalyst The product

formed is .

A. $CH_3CH_2NH_2$

 $\mathsf{B.}\,(CH_3CH_2)_2NH$

C. $(CH_3CH_2)_3N$

D. A mixture of all three amines

Answer: D



58. A compound (X) having the molecular formula C_3H_9N is insoluble in alkalis The compound (X) is .

A. $CH_3CH_2NHCH_3$

 $\mathsf{B.}\,(CH_3)_3N$

C. $(CH_3)_2CHNH_2$

D. $CH_3CH_2CH_2NH_2$

Answer: A



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59. Which of the following reagents is employed in the Hofmann s method to separate the three types of amines?.

- A. Ethy1 acetate
- B. Diethy1 oxalate
- C. Dimethy1 oxalate
- D. Methy1 acetate

Answer: B



60. In Which of the following compound are intermolecular hydrogen bonds not formed among its molecules .

A.
$$CH_3CH_2NH_2$$

B.
$$(CH_3CH_2)_2NH$$

C.
$$(CH_3CH_2)_3N$$

D. Both (2) and (3)

Answer: C



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61. Among the following isomeric amines which one is expected to have the lowest boiling point?.

A.
$$CH_3CH_2N(CH_3)_2$$

B. $(CH_2)_2CHNHCH_3$

C. $(CH_3CH_2)_2NH$

D. $CH_3(CH_2)_3NH_2$

Answer: A



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62. Which of the following are soluble in water?.

A. $(C_2H_5)_3N$

B. $(C_2H_5)_2NH$

C. $C_2H_5NH_2$

D. Allof these

Answer: D



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- 63. Which of the following is incorrect about amines
 - A. Aromatic amines are generally very toxic
 - B. Aromatic amines are very easily oxidized by air
 - C. Amines have higher boiling points than alcohols or carboxylic acids .
 - D. Majority of amines have unpleasant odour .

Answer: C



64. If pK_b for the reaction of $MeNH_2$ in water is 3.4 the pK_a for the conjugate acid $Me\overset{+}{N}H_3$ will the .

- A. 14/3.4
- B.14 + 3.4
- C.(14)(3.4)
- D. 14 3.4

Answer: D



65. Which of the following statements is incorrect.

A. An aqueous solution of Me_3N is more basic than the

same concentration of tetramethy1ammonium hydroxide

$$(Me_4NOH)$$
.

- B. Amine salts are typical ionic compounds
- C. Amines salts are non-volatile solids
- D. When heated amine salts generally decompose before the high temperature required for melting is reached .

Answer: D



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66. Which of the following is water soluble .

A.
$$\stackrel{+}{RN}H_3X^-$$

B.
$$R_2\overset{+}{N}H_2NO_3^-$$

C.
$$R_3 \overset{+}{N} HHSO_4$$

D. All of these

Answer: B



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67. Considering the basic strength in the gas phase which one has the smallest pK_a ? .

A.
$$(CH_3)_3N$$

B. NH_3

 $\mathsf{C.}\left(CH_{3}\right)_{2}NH$

D. Ch_3NH_2

Answer: B



68. Which of the following is the corrent order of basicity in aqueous solution?.

A.

$$(C_2H_5)_3N > (C_2H_5)_2 > (C_2H_5)_2NH > C_2H_5NH_2 > NH_3$$

 $\mathsf{B.}\,(C_2H_5)_2NH > C_2H_5NH_2 > (C_2H_5)_3N > NH_3$

 $\mathsf{C.}\,(C_2H_5)_2NH>(C_2H_5)_3N>C_2H_5NH_2>NH_3$

D. $(C_2H_5)_3N > C_2H_5NH_2 > (C_2H_5)_2NH > NH_3$

Answer: C



69. Amines are more basic than

A. alcohols

B. ethers

C. esters

D. All of these

Answer: D



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70. Among the following the most basic is

A. $C_6H_5NH_2$

B. $(C_6H_5)_2NH$

 $\mathsf{C.}\, C_6 H_{11} N H_2$

D. NH_3

Answer: C

71. Which of the following has the highest PK_a ?



A.

 $_{\rm R}$ $H_3C \left(\bigcirc\right) NH_2$

 $C = O_2N \bigcirc NH_2$

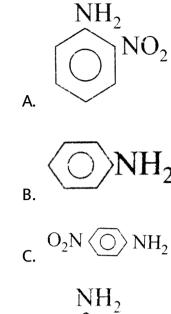
 $_{\rm D}$ Cl $\langle \bigcirc \rangle$ NH₂

Answer: B



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72. Which of the following has the highest pK_b ?.





Answer: A

D.



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73. Which of the following is least basic .?

A. o-Anisidine

B. p-Anisidine

C. m-Anisidine

D. Aniline

Answer: C



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74. Which of the following has the highest value of K_b ?

A. o-Toluidine

B. p-Toluidine

C. m-Toluidine

D. Aniline

Answer: B

75. Which of the following is most basic?.

- A. NH_3
- B. $C_6H_5NH_2$
- C. Ch_3NH_2
- D. $C_6H_5CH_2NH_2$

Answer: C



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76. The correct order of the basicities of the following comounds

is .

$$CH_3 - C$$
 $\ddot{N}H_2$
 A

$$\operatorname{A.}A>B>C>D$$

$$\operatorname{B.}C > A > B > D$$

$$\mathsf{C}.\,B>A>C>D$$

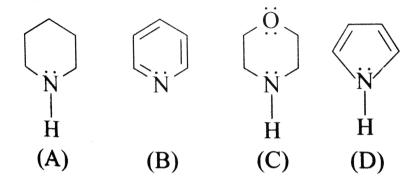
$$\mathsf{D}.\,A>C>B>D$$

Answer: D



77. Among the following compounds the correct order of basicity

is



A.
$$A>C>B>D$$

$$\mathsf{B}.\,B>A>C>D$$

C.
$$C > A > D > B$$

$$\mathsf{D}.\,D>A>C>B$$

Answer: A



78. Which of the following is least basic .

- A. Resonance
- **B.** Induction
- C. Solvation
- D. All of these

Answer: D



79. Which of the following is least basic .

- A. $CH_3CH_2CH_2NH_2$
- B. $HC \equiv CCH_2NH_2$
- $\mathsf{C.}\,H_2C=CHCH_2NH_2$

D. $CH_3CH_2CH_2NHCH_3$

Answer: B



- **80.** Which of the following iscorrect?
- (a) the conjugate acid of $HO(CH_2)_3NH_2$ is $H_2\overset{+}{O}(CH_2)_3NH_2$
- is
- (b) The conjugate base of $HO(CH_2)_3NH_2$ is $\overline{O}(CH_2)_3\overset{+}{N}H_2$
- (C) The conjugate acid of $HO(CH_2)_3NH_2$ is $HO(CH_2)_3NH_2$
- (d) The conjugate base of $HO(CH_2)_3NH$.
 - A. (b),(C)
 - B. (a),(b)
 - C. (c),(d)

D. (a),(d)

Answer: A



81. When treaded with excess of methy1 iodide mehtylamine leads to a nucleophilic substitution to yield .

- A. dimethylamine
- B. trimethylamine
- C. tetramethylammonium iodide
- D. a mixture of all of these

Answer: D



82. The structure of C in the following sequence of reactions

$$CH_3CH_2CH_2NH_2 \stackrel{CH_3I}{\underset{excess}{\longrightarrow}} A \stackrel{AgOH}{\longrightarrow} B \stackrel{heat}{\longrightarrow} C$$
 is .

A.
$$CH_3CH = CH_2$$

B.
$$CH_3CH(OH)CH_3$$

$$C. CH_3CH = O$$

D.
$$CH_3COCH_3$$

Answer: A



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The product obtained is .

A.
$$cis-CH_3CH_2CH=CHCH_3$$

B.
$$trans - CH_3CH_2CH = CHCH_3$$

$$\mathsf{C.}\,CH_3CH_2CH_2CH=CH_2$$

D. a mixture of all of these

Answer: D



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84. Which of the following quaternary ammonium hydroxides undergoes Saytzeff s elimination ?

B. C,D

C. B,C

D. A,D

Answer: B



85. The thermal decomposition of the hydroxide salt of $Ph\overset{+}{N}Me_3$ gives .

A. CH_3OH

B. C_6H_5OH

 $\mathsf{C}.\,C_6H_5CH_2OH$

D. CH_3CH_2OH

Answer: A



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 $CH_3CH_2NH_2 \xrightarrow[heat]{(CH_3CO)_2O}$

86. The products (A) and (B) of the reaction

A. $CH_3CH_2NHCOCH_3$ and CH_3COOH

B. $CH_3CONHCH_2CH_3$ and $CH_3CO\overline{O}NH_3^+CH_2CH_3$

C. $CH_3CONHCH_2CH_3$ and $(CH_3CO)_2NCH_2CH_3$

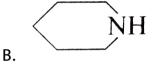
D. $(CH_3CO)_2NCH_2CH_3$ and CH_3COOH

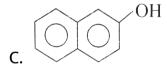


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87. Which of the following does not react with benzy1 chloride?









Answer: D

D.

88. Benozylation of primary and secondary amines with benzoyl chloride in the presence of dilute NaOH to form amides is known as .

- A. Schmidt reaction
- B. Schotten-Baumann reaction
- C. Reimer-Tiemann reaction
- D. Stephen reaction

Answer: B



89. Which of the following compound on treatment with benzenesulphony1 chloride forms an alkali insolube precipitate?

A.
$$(C_2H_5)_2NH$$

$$\operatorname{B.} C_6H_5CH_2NH_2$$

$$\mathsf{C}.\,(CH_3)_3N$$

D.
$$CH_3CONH_2$$

Answer: A



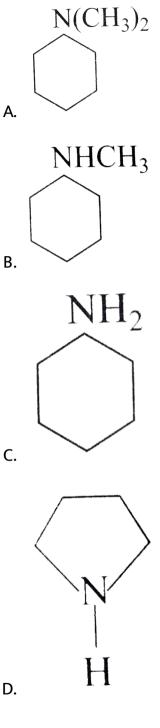
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90. The reaction of p- aminophenol with one equivalent of acety1 chloride in the presence of pyridine gives .

Answer: C



91. Which of the following compounds does not react with 1°
and 2° amines to form amides ? .
A. Acid chlorids
B. Acid anhydrides
C. Esters
D. Carboxylic acids
Answer: D
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92. Among the following compounds which one will produce a
Schiff base on reaction with cyclohexanone ? .



Answer: C



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93. Te end product (B) formed in the reaction sequence ph

$$CHO \xrightarrow[heat]{CH_3CH_2NH_2} A \xrightarrow[CH_3OH]{NaBH_3CN} B$$
 will be .

CN

A. $PhCHNHCH_2CH_3$

- B. $PhCH_2NHCH_2CH_3$
- $\mathsf{C.}\,PhCH = NHCH_2CH_3$
- D. $PhCONHCH_2CH_3$

Answer: B



94. Which of the following does not form enamines with a secondary amine ?

A. C_6H_5CHO

B.HCHO

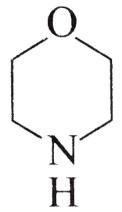
C. both(1)and(2)

D. CH_3CHO

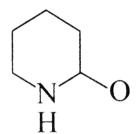
Answer: C



95. Which of the following compound will react with cyclohexanone to form an enamine ?



A.



В.



D. N

Answer: A



96. Predict the end product of the following sequence of reactions

$$(CH_3)_2CO \xrightarrow[acid]{(CH_3)_2NH} A \xrightarrow{H_2/Ni} .$$

- A. $(CH_3)_2$
- $\mathsf{B.}\left(CH_{3}\right)_{2}CHN(CH_{3})_{2}$

C.
$$H_2C= \stackrel{CH_3}{C} - N(CH_3)_2$$

D.
$$(CH_3)COHN(CH_3)_2$$

Answer: B



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97. Which of the following amines fail to give positive isocyanide test ?

- A. $C_6H_5NHCH_3$
 - B. $C_6H_5N(CH_3)_2$
 - C. Both (1) and (2)
 - D. $C_6H_5NH_2$

Answer: C



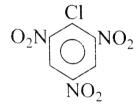
- 98. Which of the following intermediates is formed during the carbylamine reaction?
 - A. Nitrene
 - B. Carbocation
 - C. Carbanion
 - D. Dichloromethylene

Answer: D



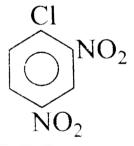
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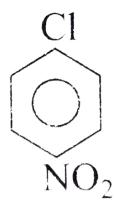
99. Which of the following ary1 halides is most reactive toward reaction with a primary amine ? .

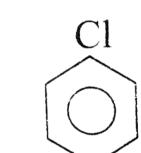


A.

В.







Answer: A

D.



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100. Which of the following compounds is most readily nitrated with HNO_3 .?

A. Nitrobenzene
B. aniline
C. Pheno1
D. Benzene
Answer: B
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101. Aniline dose not undergo
A. Friedel Carafts alkylation Friedel Crafts alkylation
B. Friedel Carafts acylation
C. Both of these
D. None of these

Answer: A



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102. Aniline reacts with bromine in CS_2 [carbon disulphide] at room temperature to yield .

- A. 2,4,6-tribromoaniline
- B. o-bromoaniline
- C. p-bromoaniline
- D. A mixture of (2) and (3)

Answer: B



103. Which of the following is important as a drug in the control of cocci infections ?

- A. Aspirin
- B. Sulphanilamide
- C. Paracetamo1
- D. Phenacetin

Answer: D



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104. Consider the following sequence of reactions

$$C_{6}H_{5}NH_{2} \xrightarrow{Ac_{2}O} A \xrightarrow{\operatorname{conc.}HNO_{3}} B \underset{\operatorname{major}}{B} \xrightarrow{aq.H_{2}SO_{4}} \operatorname{heat} \xrightarrow{(\operatorname{major})(C)} 0 - a5^{\circ}C$$

- A. o-nitroaniline
- B. 2,4,6-trinitroaniline
- C. p-nitroacetanilide
- D. p-nitroaniline

Answer: D



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105. Acetanilide is treated with bromine in acetic acid at room temperature and the product so formed is hydrolyzed by aqueous NaOH The major end product is .

- A. p-bromoaniline
- B. o-bromoaniline
- C. 2,4,6-tribromoaniline

D. p-bromoacetanilide

Answer: A



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106. Which of the following compounds does not exist as a zwitter ion ?

A.
$$H_2N$$
 SO₃H

B. H_2NCH_2COOH

C. 📄

D. $CH_3CH(NH_2)COOH$

Answer: C



107. Which of the following is not the characteristic of sulphanilic acid . (A) High melting point (B) Soluble in aqueous HCI (C) Insoluble in H_2O and organic solvents (D) Insoluble in aqueous NaOH .

- A. A,D
- B. B,D
- C. C,D
- D. B,C

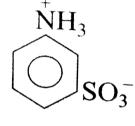
Answer: B



108. Identify the end product of the following sequence of reactions

$$C_6H_5NH_2 \xrightarrow{180^{\circ}C} A \xrightarrow{180^{\circ}C} B \xrightarrow{180^{\circ}C} C$$
 .





$$H_3N$$
 SO_3

D. A mix of all of these

Answer: C

В.



109. Which of the following amines is employed to synthesize pheny1 isocyante?

- A. $C_6H_5)_3N$
- B. $(C_6H_5)NH$
- C. $C_6H_5NH_2$
- D. Any of these

Answer: C



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110. Which of the following amines are methylated by heating with formaldehyde and an excess of formic acid at $100^{\circ}\,C$?

A. Primary amines

C. Both(1)and(2) D. Tertiary amine **Answer: C Watch Video Solution** 111. Which of the following amines form n-halogenoamines with halogen in weakly alkaline solution?. A. Primary amine B. Secondary amine C. Tertiary amine

B. Secondary amine

D. Both (1) and (2)

Answer: D



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112. Ethylamine is heated with CS_2 in the presence of $HgCI_2$

- A. ethy1 isothiocyanate
- B. ethy1thiocyanate

The product formed is .

- C. diethy1sulphide
- D. ethanethio1

Answer: A



113. The end product (B) of the following sequence of reactions $(CH_3CH_2)NH+CS_2 o A extstyle {HgCI_2\over \Delta}B$ is .

- A. Isothiocyanate
- B. Dithiocarbamic acid
- C. Thiol
- D. None of these

Answer: D



114. When refluxed with ethanolic carbon disulphide and solid potassium hydroxide aniline forms

A. N-phenyldithiocarbamic acid

B. N,N-diphenylthiourea

C. pheny1 isothiocyanate

D. pheny1 thiocyanate

Answer: B



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115. When diethylamine is oxidized by $KMnO_4$ the product is .

A. $(CH_3CH_2)_2NOH$

B. $(C_2H_5)_2N - N(C_2H_5)_2$

 $\mathsf{C.}\left(CH_{3}CH_{2}\right)_{2}CO$

D. $(CH_3CH_2)CHNO$

Answer: B



116. Which of the following does not oxidise a tertiary amine to the amine oxide ?

- A. Caro's acid
- B. Ozone
- C. Hydrogen peroxide
- D. Potassium permagnate

Answer: D



117. Tertiary amine oxides undergo the elimination of a dialkyihydroxylamine when they are heated This reaction is

called the .
A. Cope elimination
B. Hofmann elimination
C. Saytzeff elimination
D. Markovnikov' s elimination
Answer: A

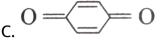


118. Aniline is oxidized by peroxytrifluoro acetic acid in methylene dichloride to yield mainly.





В.



ONHOH

Answer: B



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119. Predict the product of the following reaction

$$C_6H_5MgBr+CH_3NH_2
ightarrow \ .$$

A. C_6H_6

B. CH_4

C. $C_6H_5NHCH_3$

D. A mixture of all these

Answer: A



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120. Butan-1 amine reacts with nitrous acid at $0.\,^{\circ}$ C to form .

A.
$$CH_3CH = CHCH_3$$

B.
$$CH_3CH_2CH(OH)CH_3$$

$$\mathsf{C.}\ CH_3CH_2CH_2CH_2OH$$

D. All of these

Answer: D



121. Which one of the following compounds will produce a water insoluble yellow oily liquid of nitrosoamine on reaction with $NaBNO_2$ and dilute HNO_3 at $0.\,^\circ$ C .

- A. Triethylamine
- B. Diethylamine
- C. Ethylamine
- D. Methylamine

Answer: B



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122. Which of the following amines undergo Liebermann s nitroso reaction?

A. $C_6H_5NH_2$

- B. $C_2H_5NH_2$
- C. $CH_3NHC_2H_5$
- D. $(CH_3)_3N$

Answer: C



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123. The presence of a primary amine can be confirmed by its reaction with .

- A. $CHCI_3$ and KOH
- B. HNO_2
- C. CS_2 and $HgCI_2$
- D. Both (1) and (3)

Answer: D



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124. Which of the following is known as Hinsberg reagent?

- A. $C_6H_5SO_2CI$
- B. $C_6H_5SO_3H$
- $\mathsf{C.}\ C_6H_5COCI$
- D. $C_6H_5NH_2$

Answer: A



125. Consider the following sequence of reactions NO_2

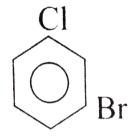


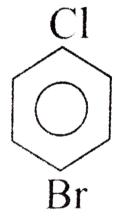
The end

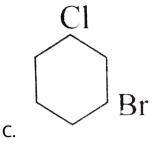
product (D) is .

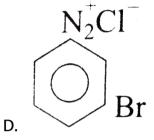
A.

В.









Answer: A



126. Consider the reaction The name of the reactions and the intermediate via which it is known to proceed are respectively

$$Me - NH_2 \xrightarrow{1. \text{ NaNO}_2, \text{ HCl}} Me - C$$

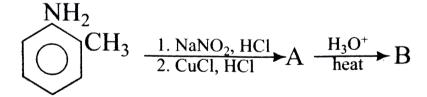
- A. Hunsdiecker and benzyne
- B. Sandmeyer and carbanion
- C. Gattermann and carbocation
- D. Sandmeyer and free radical

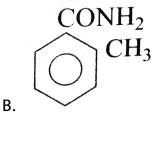
Answer: D

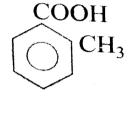


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127. Consider the following sequence of reactions





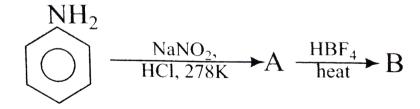


Answer: D



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128. In the chemical reactions



compounds (A) and (B) are .

the

- A. benzenediazonium chloride and fluorobenzene
- B. nitrobenzene and chlorobenzne
- C. phenol and benzene
- D. nitrobenzene and fluorobenezne

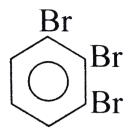
Answer: A



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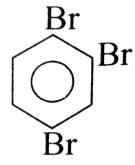
129. Predict the final product of the following sequence of reactions

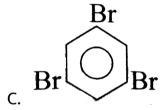
$$\begin{array}{c|c}
NO_2 \\
\hline
1. Sn/HCl \\
\hline
2. NaOH} A \xrightarrow{Br_2} B \xrightarrow{NaNO_2} C \xrightarrow{H_3PO_2} D
\end{array}$$

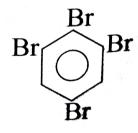


A.

В.







Answer: C

D.



A. 2-Naphthol
B. toluene
C. N,N-dimethylaniline
D. Both (1) and (3)
Answer: B
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131. Which of the following conditions is most satisfactory for
diazo coupling with amines ?
A. Strong acidic
B. Mildly basic

130. Benzenediazonium chloride does not react with .

- C. Strongly basic
- D. Mildly acidic



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132. Methy1 orange an acid-base indicator is prepared by diazo coupling reaction of $N,\,N$ dimethylaniline with

- A. sulphanilic acid
- B. orthanilic acid
- C. metanilic acid
- D. picric acid

Answer: A

133. Among the diazonium ions the order of reactivity towards diazocoupling with phenol in the presence of dilute NaOH is .

A.
$$III < I < IV < II$$

$$\mathsf{B.}\,I < IV < II < III$$

$$\mathsf{C}.\: I < III < IV < II$$

D.
$$III < I < II < IV$$

Answer: C



Follow Up Test 2

- 1. The shape of amines is
 - A. tetrahedral
 - B. trigonal pyramidal
 - C. trigonal bipyramidal
 - D. square pyramidal

Answer: B



- **1.** The common of $CH_2=CHCH_2NHCH_3$ is
 - A. vinylmeth lamine
 - B. allymethylamine
 - C. benzylmethy lamine
 - D. pheny lemethylamine

Answer: B



Follow Up Test 4

- **1.** Which of the following reducing agents cannot be used to convert Ar NO_2 to $ArNH_2$? .
 - A. Sn in dil HCI

- B. $SnCI_2$ in HCl
- $\mathsf{C}.\,H_2\,/Pd-C$
- D. $LiAIH_4$



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Follow Up Test 5

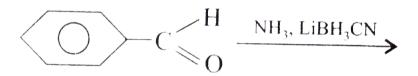
- 1. Alky1 cyanides are reduced to primary amines by
- A. hydrogen and a catalyst
 - B. lithium aluminium hydride
 - C. sodiunm and ethanol
 - D. all of these

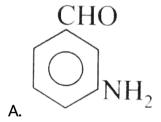


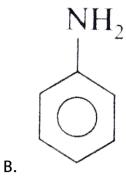
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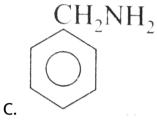
Follow Up Test 6

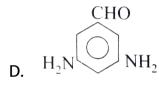
1. The product of the following reaction











Answer: C



1. The Curtius rearrangement is rearrangement that occurs with .

A. acy1halides

B. acy1 azides

C. acid anhydrides

D. acid amides

Answer: B



Follow Up Test 8

1. Consider the following sequence of reactions

$$CH_3CH_2Br \stackrel{AgCN}{\longrightarrow} A \stackrel{H_2Ni}{\longrightarrow} B$$

The final product (B) is .

- A. $(CH_3CH_2)_2NH$
 - B. $CH_3CH_2NHCH_3$
 - C. $CH_3CH_2CH_2NH_2$
 - D. CH_3NHCH_3

Answer: B



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Follow Up Test 9

- 1. The IUPAC name of the tertiary amine formed by the reaction of dimethylamine with ethyl bromide is .
 - A. N,N-diethylaminomethane
 - B. N,N-diethylmethanamine

- C. N,N-dimethy1ethanamine
- D. N-ethy1 -N-methylethanamine

Answer: C



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Follow Up Test 10

- **1.** How many molecules of methy1 bromide should react with ethylamine successively to convert the latter into a quaternary ammonium salt?
 - A. Four
 - B. There
 - C. two

D. One
Answer: B
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ollow Up Test 11
1. To prepare quaternary ammonium compounds we heat
with a large excess of alky1 halide .
A. ammonia
B. primary amine
C. secondary amine

D. any of these



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2. Which of the following is a gas at room temperature?

 $CH_{3}NH_{2}$ (ii) $CH_{3}CH_{2}NH_{2}$ (iii) $\left(CH_{3}
ight)_{2}$ (iv) $\left(CH_{3}
ight)_{3}N$

A. (i)

B. (i),(ii)

C. (i),(ii),(iii)

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

Answer: D



1. Which of the following chemical equations characterizes the amine as Bronsted base ? .

A.
$$MeNH_2 + H_2O
ightarrow MeNH_3 + OH^-$$

B.
$$MeNH_2 + HCI(g)
ightarrow Me \overset{+}{N} H_3 Cl^{ extstyle -}(s)$$

C.
$$MeNH_2 + Bme_3 - MeH_2\overset{+}{N} - Bme_3$$

D. Both (1)and (2)

Answer: D



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Follow Up Test 13

1. Among the following the least basic compound is

A. $(CH_3)_3N$

B. CH_3NH_2

C. NH_3

D. $C_6H_5NH_2$

Answer: D



Follow Up Test 14

1. Which of the following statements is correct (i) N,N-dimethylaniline is only slightly more basic than aniline (ii) 2,6-Dimethyl-N,N-dimethylaniline is much more basic than 2,6-

dimethylaniline (iii) 4-cyanonaniline (iv) 3,4,5-Trinitroaniline is more basic than 4-cyano-3,5 dinitroaniline .

- A. (i),(iii)
- B. (i),(ii),(iii),(iv)
- C. (i),(ii),(iii)
- D. (ii),(iv)

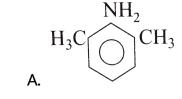
Answer: B

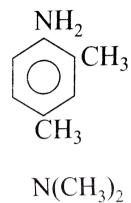


Follow Up Test 15

1. Predict the end product of the following sequence of reactions

$$C_6H_5NH_2\stackrel{CH_3CI}{\longrightarrow} A\stackrel{CH_3CI}{\longrightarrow} B$$
 .







D. A mixture of all there

Answer: C

В.

C.



1. Which of the following amines undergo nucleophilic acylation reactions on treatment with acid chlorides or acid acylation reactions on treatment with acid chlorides or acid anhydrides to form substituted amides ? .

- A. Primary amines only
- B. Secondary amines only
- C. Primary and secondary amines
- D. Primary secondary and tertiary amines .

Answer: C



Follow Up Test 17

1. Which of the following compounds are formed when aldehydes or ketones react with primary amines?.

A. Imines

B. Schiff bases

C. Azomethines

D. All of these

Answer: A



Follow Up Test 18

1. Which of the following compounds on being heated with a primary amine and alcoholic KOH will form a carbylamine ? .

- A. CCI_4
- $\mathsf{B.}\,\mathit{CHCI}_3$
- C. CH_2CI_2
- D. CH_3CI

Answer: B



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Follow Up Test 19

1. Which of the following compounds reacts with primary amine

 (RNH_2) to from a symmetrical disubstituted urea ?

A. $COCI_2$

 $\operatorname{B.}R'N=C=O$

$$\mathsf{C.}\,R'N=C=S$$

D. None of these

Answer: A



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Follow Up Test 20

1. Which of the following primary amines yields tertiary nitrogen compounds on oxidation with potassium permanganate?

A. RCN_2NH_2

 $\operatorname{B.}R_2CHNH_2$

C. R_3CNH_2

D. Both (2) and (3)

Answer: C



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Follow Up Test 21

1. Which of the following compounds does not liberate nitrogen gas on treatment with nitrous acid ?

A. CH_3NHCH_3

 $\mathsf{B.}\left(CH_{3}\right)_{2}CHNH_{2}$

 $\mathsf{C.}\left(CH_{3}\right)_{2}NC_{6}H_{5}$

D. Both (1) and (3)

Answer: D



Follow Up Test 22

- **1.** Which of the following reacts with $NaNO_2$ and dilute HCI at
- $0-5^{\circ}$ to form a diazonium salt ?
 - A. An aromatic primary amide
 - B. An aromatic primary amine
 - C. An aromatic nitro compound
 - D. An aromatic secondary amine

Answer: B



1. The NH_2 group of aniline acts as a / an _____ in electropilic aromatic substitution .

A. deactivator and meta director

B. activator and ortho para director

C. activator and meta director

D. deactivator and ortho para director

Answer: B



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2. The raction

A. Gattermann reaction

B. Bart reaction
C. diazotisation
D. Sandmeyer reaction .
Answer: D
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3. Amides can be converted into amines by a reactions named after .
A. Perkin
B. Claisen
C. Hofmann
D. Kekule

Answer: C



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4. Indicate which nitrogen compund amongst the following would undergo Hofimann reaction?.

A. $RCONHCH_3$

B. $RCOONH_4$

C. $RCONH_2$

D. RCONHOH

Answer: C



- 5. Mark the correct statement
 - A. Mehty1 amines is slightly acidic
 - B. Merthy1 amines is a stronger base than ammonia
 - C. Methy1 amine is less basic than ammonia
 - D. Methy1 amine forms salts with alkalies

Answer: B



- 6. The electrophile involved in the nitration of benzene is
 - A. NO_2
 - $\mathsf{B.}\,NO_2^{\,+}$
 - C. NO

D. NO_2^-

Answer: B



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7. Which of the following is known as Hinsberg reagent?

A. $C_6H_5SO_3H$

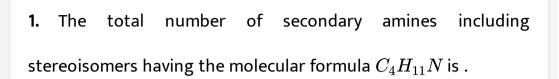
B. C_2H_5NO

C. $C_6H_5SO_2CI$

D. $C_6H_5N_2CI$

Answer: C





- A. Five
- B. Four
- C. two
- D. Three



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2. Aliphatic nitroalkanes are reduced to primary amines by .

- A. catalytic hydrogenation
- B. lithium aluminium hydride
- C. metal in acid solution
- D. all of these



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3. The course of the reduction of nitro compounds takes place throught the following stages .

$$C_6H_5NO_2
ightarrow C_6H_5NO
ightarrow C_6H_5NHOH
ightarrow C_6H_5NH_2$$

The nature of the final product depends mainly on the pH of the solution in which the reduction is carried out Aniline is the product when reduction is carried out in .

- A. alkaline solution
- B. neutral solution
- C. acidic solution
- D. strongly acid solution

Answer: C



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4. The major end product \boldsymbol{B} in the reaction

$$C_6H_5CH_2Br \stackrel{AgNO_2}{\longrightarrow} A \stackrel{1\:.\:LiAIH_4}{\stackrel{2\:.\:H_3O^+}{\longrightarrow}} B$$
 is .

- A. $(C_6H_5CH_2)_2NH$
- B. $C_6H_5CH_2NH_2$
- $\mathsf{C.}\ C_6H_5CH_2NHOH$
- D. $C_6H_5CH=NOH$

Answer: B



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5. Amphetamine a CNS (central nervous system) stimulant has the structural formula $C_6H_5CH_2CH(NH_2)CH_3$ Which of the following sets of reactants should be hydrogenated in the presence of nickel catalyst to prepare amphetamine?

A.
$$C_6H_5CH = CHCH_3 + NH$$

B.
$$C_6H_5CH_2NH_2$$
 and CH_3CHO

C.
$$C_6H_5CH_2COCH_3$$
 and NH_3

D.
$$C_6H_5CH_2CHO$$
 and CH_3NH_2

Answer: C



A. Primary aromatic amines
B. Primary alphatic amines
C. Both of these
D. none of these
Answer: B
Watch Video Solution
7. Ethy1 bromide is heated with a large excess of concentrated
ammonia The major product obtained is .
A. tetraethylammonium bromide

6. The Gabriel synthesis is used the prepartation of .

- B. triethylamine
- C. diethylamine
- D. ehtylamine



- **8.** Which of the following compound does not react with acety1 chloride?
 - A. CH_3NH_2
 - $\mathsf{B.}\left(CH_{23}\right)_2N$
 - $\mathsf{C}.\,(CH_3)_2NH$
 - D. both (2) and (3)



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9. Among the following compounds which one will react with acetone to give a product containing a carbon-nitrogen double bond?

A. $(CH_3)_3N$

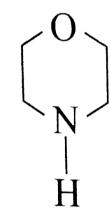


C. $C_6H_5NHC_6H_5$

D. $C_6H_5NH_2$

Answer: D

10. Which of the following compounds will not form a Schiff base on reaction with p-nitrobenzaldehyde .



A.



В.

$$NH_2$$

$$NH_2$$

Answer: A



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11. Aniline reacts with benzoy1 chloride in the presence of dilute

Na OH to give .

A. benzalaniline

B. o-aminobenzophenone

C. p-benzophenone

D. benzanide

Answer: D

12. Which of the following will not liberate nitrogen gas on treatment with HNO_2 at $0.\,^\circ$ C ?

A. Benzylamine

B. Urea

C. Aniline

D. Benzamide

Answer: C



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13. Pheny1 isocyanide is prepared from

- A. Wurtz reaction
- B. Reimer-Tiemann reaction
- C. Carbylamine reaction
- D. Rosenmund s reaction

Answer: C



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14. In the reaction

$$CH_3CN+2H \stackrel{SnCI_2}{\longrightarrow} X \stackrel{ ext{Boiling}}{\longrightarrow} Y$$
 the term Y is .

- A. acetones
- B. acetaldehyde
- C. ethanamine
- D. dimethylamine

Answer: B



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15. Consider the following sequence of reactions

Compounds $[A] \xrightarrow{\mathrm{reducation}} [B] \xrightarrow{HNO_2} CH_3CH_2OH$ The compound [A] is .

- A. CH_3CH_2CN
- B. CH_3NO_2
- C. CH_3NC
- D. CH_3CN

Answer: D



16. Aniline is an activated system for electrophilic substitution

The compounds formed on heating aniline with acetic anhydride is .

Answer: B



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17. Which of the following is formed when acetonitrile is hydrolysed partially with cold conc HCI?

- A. Acetic anhydride
- B. Acetic acid
- C. Mehty1 cyanide
- D. Acetamide

Answer: D



18. Acetamide any and ethy1 amine can distinguished by reacting with .

A. aqueous HCI and heat

B. aqueous Na OH and heat

C. acidified $KMnO_4$.

D. bromine water

Answer: B



19. The gas leaked from a stronge tank of the Union Carbide plant in Bhopal gas tragedy was

A. Methylamine

- B. Ammonia
- C. Phosgene
- D. Mehtylisocyanate

Answer: D

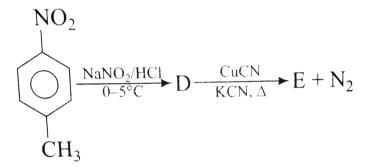


- **20.** An orgainc compound A upon reacting with NH_3 gives B On heating B give C. C in presence KOH reacts with Br_2 to yield $CH_3CH_2NH_2A$ is .
 - A. CH_3CH_2COOH
 - B. CH_3COOH
 - C. $CH_3CH_2CH_2COOH$
 - D. $CH_3CHCOOH$ CH_3



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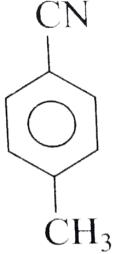
21. In the reation



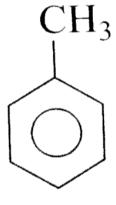
the product

 $E\,\mathsf{is}$.

$$\mathbf{A}. \quad \mathbf{H}_{3}\mathbf{C} - \bigcirc - \mathbf{C}\mathbf{H}_{3}$$

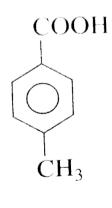


В.



C.

D.



Answer: B



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22. Arrange the following in increasing order of their basic

strength $CH_3NH_2(I), (CH_2NH(II), (CH_3)_3N(III), C_6H_5CH_2NH_2(IV)$

A. IV < III < II < I

B. IV < III < I < II

C. I < II < III < IV

D. IV < III < I < II

Answer: B



23. m- bromoaniline can be prepared by .

A.
$$C_6H_6 \xrightarrow[H_2SO_4]{HNO_3} \xrightarrow[2NaOH\,,H_2O]{Br_2} \xrightarrow[H_2O]{Br_2}$$

$$extsf{B.} \ set(Br_2)
ightarrow egin{array}{c} rac{HNO_3}{H_2SO_4} & \stackrel{H_2}{\longrightarrow} \ rac{H_2}{Pt} \end{array}$$

$$\mathsf{C.}\,m - BrC_6H_5COOH \stackrel{SOCI_2}{\longrightarrow} \stackrel{NH_3}{\longrightarrow} \stackrel{Br_2,NaOH}{\longrightarrow} \ .$$

D.
$$H_5NH_2 \xrightarrow{1NaNO_2/HCI} \xrightarrow{NaNH_2} \overset{NaNH_2}{\longrightarrow}$$

Answer: C



24. Which of the following compounds will exhibit optical isomerism?

A. ttert-butylamine

C. Isobutylamine D. n-butylamine **Answer: B Watch Video Solution** 25. When nitrobenzene is reduced with zinc and methanolic NaOH the product obtained is . A. Aniline B. Phenylhydroxylamine C. p-aminophenol D. Azobenzene

B. sec-butylamine

Answer: D



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26. Which of the following exists as a zwitter ion?

- A. p-Aminiopheno1
- B. Salicylic acid
- C. Sulphanilic acid
- D. Ethanolamine

Answer: C



27. The product of the reaction

$$HO +$$
 N_2C1 base

$$A. \qquad N=N-N-OH$$

Answer: D



28. The formation of m-dinitrobenzene by heating nitrobenzene with conc H_2SO_4 is a/an .

A. conjugate acid-base reaction

B. sulphonation process

C. nucleophilic substitution

D. electrophilic substitution

Answer: C



29. Nitration of aniline is achieved by

A. direct nitration with nitrating mixture under reflux

B. using fuming HNO_3

C. acetylation followed by nitration and subsequent

hydrolysis

D. KNO_3 and conc HNO_3

Answer: D



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30. Among the following compounds $C_3H_7NH_2NH_3CH_3NH_2C_2H_5NH_2$ and $C_6H_5NH_2$ the least basic compounds is .

- A. $C_3H_7NH_2$
- B. NH_3
- C. CH_3NH_2
- D. $C_6H_2NH_2$

Answer: D Watch Video Solution 31. Intermolecular hydrogen bonding is strongest in A. Methylamine B. Pheno1 C. Formaldehyde D. Methano1





- A. $C_6H_5NH_2$
- B. $(C_6H_5)_2NH$
- C. CH_3NH_2
- D. $(CH_3)_2NH$

Answer: D



33. Which of the following reagents can be used to convert benzenediazonium chloride into benzene?

- A. CH_3OH
- B. H_3PO_2
- C. $Br_2/H(2)O$
- D. $LiAiH_4$

Answer: B Watch Video Solution 34. Which is more basic A. Benzylamine B. Aniline

C. Acetamide

D. Benzamide

Watch Video Solution

Answer: A

- A. C_2H_5OH
- B. $C_2H_5NO_2$
- C. CH_3CHO
- D. CH_3COOH



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36. Reaction of aniline with acety1 chloride in the presence of NaOH gives .

- A. acetanilide
- B. p-chloroaniline
- C. a red dye
- D. aniline hydrochloride



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37. C_3H_9N cannot represent

- A. 1°
- B. 2° amine
- C. 3° amine
- D. quaternary salt

Answer: D



- 1. Which of the follwing are used as urfactants?.A. Quaternary ammonium saltsB. Diazonium salts
 - C. Aminium salts
 - D. Ammonium salts



- 2. Which of the following compounds is chiral? .
 - A. $CH_3CH_2\overset{\cdot \cdot \cdot}{N}HCH_3$

B.
$$CH_3CH_2CH_2 \stackrel{CH_3}{N} CH_2CH_2CH_3$$

$$CH_2C_6H_5 \ | \ C.\ CH_3CH_2CH_2\ N^+ \ Br^- \ | \ CH_2CH_3$$

D. all of these

Answer: D



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3. Consider the following sequence of reactions

$$CH_3CH_2$$
 $C=O \xrightarrow{KCN} A \xrightarrow{LiAlH_4} B$

The final product (B) is .

A.
$$CH_3CH_2CH(OH)CH_2NH_2$$

$$\mathsf{B.}\,CH_3CH_2CH_2CH_2NH_2$$

$$C. CH_3CH_2CH(OH)CN$$

D. $CH_3CH_2CH(OH)CO_2H$

Answer: A



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4. The end product (B) formed in the reaction

$$CH_3CH_2Br \xrightarrow{AgCN} A \xrightarrow{1. ext{NaOH Prolonged heat}} \mathsf{i}$$

A. $CH_3CH_2NHCH_3$

B. $CH_3CH_2CH_2NH_2$

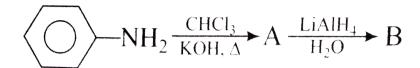
C. $CH_3CH_2NH_2$

D. $(CH_3CH_2)_3N$

Answer: C



5. The end product (B) of the reaction sequence





A.

Β.

$$C.$$
 \bigcirc NH $C-$ H

$$CH_2NH_2$$

Answer: B



6. The major product formed in the reaction is

$$\begin{array}{c}
O \\
\parallel \\
NH_2 + CH_3 - C - CH_3 + H_2 \xrightarrow{Ni}
\end{array}$$

$$CH_3$$

B.
$$N(CH_3)_2$$

$$N(CH_3)_2$$

$$CH_3$$

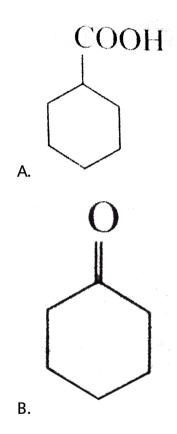
Answer: A

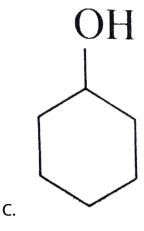


7. Consider the following reaction

$$X + (CH_3)_2NH + H_2 \xrightarrow{Ni} \sqrt{} N(CH_3)_2$$

The starting compound (X) is





D. 📝

Answer: B



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8. Aniline is reacted with bromine water and the resulting product is treated with an aqueous solution of sodium nitrite in presence of hydrochloric acid The compound so formed is converted into a tetrafluoroborate which is subsequently heated The final product is .

A. $1, 3, 5$ -tribromobenzene
B. p-bromofluorobenzene

C. p-bromofluorobenzene

D. 2,4,6-tribromofluorobenzene

Answer: D



9. When aniline reacts with oil of bitter almonds (C_6H_5CHO) condensation takes place and benzal derivative is formed This in knkown as .

A. Millon s base

B. Schiff s reagent

C. Schiff s base

D. Benedict s reagent

Answer: C



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10. What is the decreasing order of basicity of $1^{\circ}2^{\circ}$ and 3° ethyl amines and ammonia ?

A.
$$(C_2H_5)_2NH > C_2H_5NH_2 > (C_2H_5)_3N > NH_3$$

B.
$$(C_2H_3)N > (C_2H_5)_2NH > C_2H_5NH_2 > NH_3$$

$$\mathsf{C.}\ (C_2H_2)_2NH > (C_2H_5)_3N > C_2H_5NH_2 > NH_3$$

D.
$$NH_3 > C_2H_5NH_2 > (C_2H_5)_2NH > (C_2H_5)_3N$$

Answer: C



11. A compound with molecular mass 180 is acylated with CH_3COCI to get a compound with molecule of the fomer compound is .

- A. 5
- B. 4
- C. 6
- D. 2

Answer: A



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12. Considering the basic strength of amines in aqueous sloution which one has the smallest pk_b value .

A.
$$(CH_3)_3N$$

B. $C_6H_5NH_2$

C. $(CH_3)_2N$

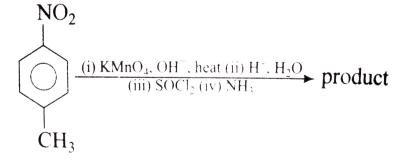
D. Ch_3NH_2

Answer: C

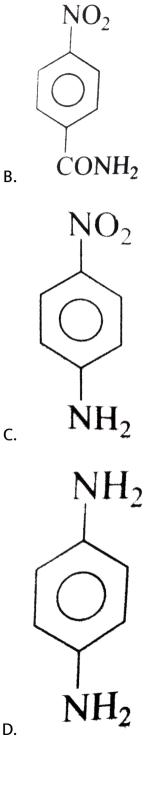


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13. In the above reaction the product is







Answer: B



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14. For the identification of beta-naphtho1 using dye test it is necessary to _____ of beta-naphtho1.

A. dichloromethane solution

B. acidic solution

C. neutral solution

D. alkaline solution

Answer: D



15. In the following reactions the major product \boldsymbol{W} is

$$\begin{array}{c|c}
 & \text{NH}_2 \\
 & \text{NaNO}_2, \text{HCI} \\
\hline
 & 0^{\circ}\text{C}
\end{array}
 V
\begin{array}{c}
 & \text{OH} \\
 & \text{NaOH}
\end{array}$$

$$A. \bigcirc N = N$$

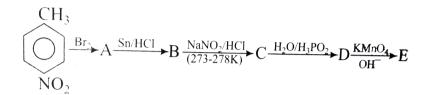
$$N=N$$
 OH
 $B.$

$$N=N$$

Answer: D



16. Identify the product (E) in the following sequence of reactions









В.

D.
$$O_2N$$
 O_2N O_2N

Answer: B



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17. Which of the followinmg is soluble in sodium hydroxide?

A.
$$H_3C$$
—SO₂NHCH₃

B.
$$H_3C \longrightarrow SO_2NHCH_3$$

D.
$$H_3C - \bigcirc -SO_2NHCH_3$$

Answer: A



18. Which of the following statemnets is true?

A. Triehtylamine forms a soluble compound with Hinsberg reagent and KOH .

B. Dimethyamine reacts with KOH and pheno1 to form an azodye .

C. Methylamine reacts with nitrous acid and liberates N_2 from aqueous solution .

D. None of these

Answer: C



19. Which of the following will give N_2 gas no treatment with nitrous acid $(NaNO_2 + HCI)$?

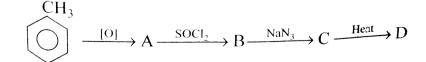
- A. $C_2H_5NH_2$
- B. CH_3NH_2
- $C.(CH_3)_2CH-NH_2$
- D. All give N_2

Answer: D



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20. in the following sequence of reactions what is D



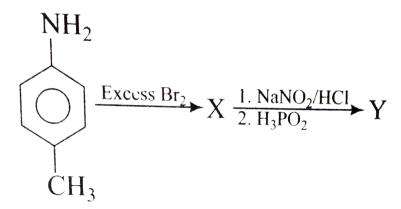
- A. Primary amine
- B. Amide
- C. Pheny1isocyanate
- D. Chain lengthened hydrocarbon

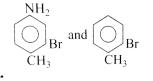
Answer: C



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21. In the following reaction sequence predict the compounds X and Y





$$\begin{array}{c} \text{Br} \overset{NH_2}{\overbrace{CH_3}} \text{Br} \overset{Br}{\underset{CH_3}{\underbrace{Br}}} \text{Br} \\ \textbf{B.} \end{array}$$

$$\begin{array}{c} \text{Br} & \overset{\text{NH}_2}{\underset{\text{Br}}{\bigvee}} \text{Br} & \overset{\text{Br}}{\underset{\text{Br}}{\bigcup}} \text{Br} \\ \textbf{C.} & & \end{array}$$

Answer: B



22. Which among the following amines can be directly oxidized to the corresponding nitro compound by potassium permanganate?

A.
$$CH_3NH_2$$

$$\mathsf{B.}\left(CH_{3}\right)_{2}\!CH-NH_{2}$$

C.
$$(CH_3)_2NH$$

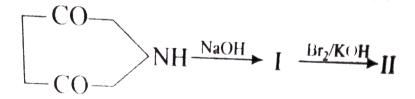
D.
$$C_6H_5NH_2$$

Answer:



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23. In the above sequence II is



A. beta-alanine

B. alpha-alanine

- C. Ethylenediamine
- D. gamma-aminobutyric acid

Answer: A



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24. The following sequence of reactions on A gives

В.

C.

Answer: C

D.



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25. $C_6H_5CONHCH_3$ can be converted into $C_6H_5CH_2NHCH_3$ by .

A.
$$NaBH_4$$

B.
$$H_2 - Pd/C$$

C.
$$LiAIH_4$$

D.
$$Zn-Hg/HCI$$

Answer: C



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26. Which of the following does not reduce Tollens reagent .

A.
$$CH_3CHO$$

B.
$$C_6H_5NHOH$$

$$\mathsf{C}.\,HCOOH$$

D.
$$C_6H_5NO_2$$

Answer: D



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27. Aromatic nitriles (ArCN) are not prepared by reaction .

A.
$$ArX + KCN$$

B.
$$ArN_2CI + CuCN$$

C.
$$ArCONH_2 + P_2O_5$$

D.
$$ArCONH_2 + SOCI_2$$

Answer: A



28. A nitrogen containing organic compound gave an oily liguid on heating with bromine and potassium hydroxide solution On shaking the product with acetic anhydride an antipyretic drug was obtained The reactions indicate that the starting compound is .

- A. aniline
- B. benzamide
- C. acetamide
- D. nitrobenzene

Answer: B



29. $C_6H_5NH_2 \xrightarrow{(CH_3CO)_2O} X \xrightarrow[CCL_4]{Br_2} Y \xrightarrow[H^+]{HOH} Z$

The compound Z is .

- A. p-bromoaniline
- B. bromoacetophenone
- C. p-bromoacetanilide
- D. o-bromoacetopenone

Answer: A



- **30.** Among the following the weakest base is .
 - A. $C_6H_5CH_2NH_2$
 - B. $C_6H_5CH_2NHCH_3$

C. $O_2NCH_2NH_2$

D. CH_3NHCHO

Answer: D



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31. Nitrobenzene gives N-phenylhydroxylamine by

A. Sn/HCI

B. $H_2/Pd-C$

C. Zn/NaOH

D. Zn/NH_4CI

Answer: D



32. Which is formed when $(CH_3)NOH$ is heated?

A. CH_3NH_2

B. $CH_3CH_2NH_2$

 $\mathsf{C}.\,(CH_3)_3N$

D. $(CH_3)_2NH$

Answer: C



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33. An organic compound (A) on reduction gives compound (B) which on treatment with $CHCI_3$ and alcoholic KOH gives compound (C) which on hydrolysis gives aniline but on

compound (C) which on hydrolysis gives aniline but on catalytic reduction gives n-methylaniline The compound (A) is .

A. methylamine

B. nitromethane

C. nitrosobenzene

D. nitrobenzene

Answer: D



34. Which of the following compounds possesses two configurationally stable enantiomers ?

A. $CH_3CH_2NHCH_3$

B.
$$CH_3CH_2CH_2NC_2H_5$$

 CH_3

C. PhCH₂
$$\stackrel{+}{N}$$
 $\stackrel{CH_3}{\sim}$ Br $\stackrel{-}{\sim}$

$$\mathbf{D.} \overset{PhCH_2}{\overset{+}{\text{Ph}}} \overset{CH_3}{\overset{CH_2CH_3}{\overset{}{\text{Br}^-}}} \mathbf{Br}^-$$

Answer: D



35. When stannous chloride and hydrochloric acid are used as the reducing agents nitrocompound are converted into .

- A. primary amines
- B. N-alky1 hydroxylamine
- C. oxime
- D. A mixture of (2) and (3)

Answer: D



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36. The reation of $RCONH_2$ with a mixture of Br_2 and aqueous KOH gives RNH_2 as the main product The intermediate (s) involved in this reation is (are) .

A.
$$RCONHBr$$

B.
$$RCON\overline{N}BrK^+$$

$$\mathsf{C.}\,R-N=C=O$$

D. all of these

Answer: D



37. Consider the following sequence of reactions

The product

 $\operatorname{t}(C)$ contains nitrogen but (D) does not the compound (C) is .

- A. CH_3NH_2
- B. $C_6H_5NH_2$
- $\mathsf{C}.\,C_6H_5CH_2NH_2$
- D. $C_6H_5NHCH_3$

Answer: D



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38. Consider the following sequence of reactions The final product (B) is

$$C \equiv CH \xrightarrow{1.B_2H_6} A \xrightarrow{CH_3NH_2} B$$

$$R_2, Ni, heat$$

Answer: B



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39. Consider the following sequence of reactions

$$(CH_3)_2CHCOOH \xrightarrow{1PCI_5} A \xrightarrow{1.LiAIH_4} A \xrightarrow{2.H_3O^+}$$

The final product \boldsymbol{B} is .

A.
$$(CH_3)_2CHCH_2N(CH_3)_2$$

$$\operatorname{B.}(CH_3)CHN(CH_3)_2$$

C.
$$(CH_3)_2CHCN(CH_3)_2$$
 (2)

D.
$$(CH_3)_2CH \mathop{C}\limits_{OH} N(CH_3)_2$$
 (2)

Answer: C



40. Which of the following is least reactive toward complex formation with BM_3 ?

A. NH_3

B. Me_3N

C. $MeNH_2$

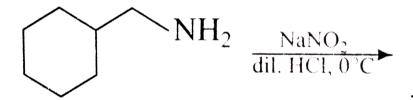
 $\operatorname{D.}Me_2NH$

Answer: B



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41. The product formed in the reaction



D. all of these

Answer: D



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42. Diazonium salts form phenylhydrazines when reduced with zinc and hydrochloric acid

(ii) stannous chloride and hydrochloric acid

(iii) sodium sulphite.

A. (i),(ii),(iii)

B. (ii),(iii)

C. (i),(ii)

D. (i),(ii)

Answer: B



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



$$NH_2$$
 CH_3 O NH_2 $+$ CH_3CO_2H O

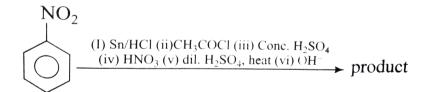
A.

Answer: A

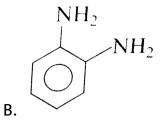


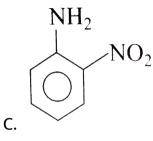
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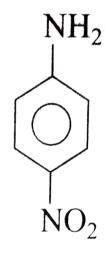
44. In the above reaction the product is



$$NO_2$$
 NO_2





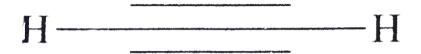


Answer: C

D.

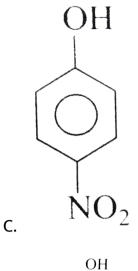


45. (i) red hot iron 873K(ii) fuming HNO_3 H_2SO_4 heat (iii) $H_2S.$ NH_3 (iv) $NaNO_2(v)$ hydrolysis Product In the above reactions product is .



$$\mathsf{A}. \overset{\mathrm{OH}}{ }_{\mathrm{NO}_2}$$

В.



D.
$$O_2N$$
 NO_2

Answer: B



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46. In the following reactions the product S is

$$H_3C$$
 CO_2H
 $O^{\circ}C$
 CH_3 NH_2

$$H_3C$$
 CH_3
 OH

B.

$$H_3C$$
 CH_3
 OH

D.
$$CO_2H$$

Answer: D



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47. In the following reactions the product \boldsymbol{S} is

$$H_3C$$

$$\xrightarrow{(i) O_2} R \xrightarrow{NH_3} S$$

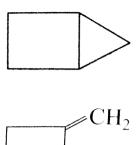
Answer: A

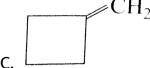
A.

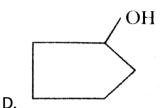
В.



48. Treatment of cyclobutylmethyamine with nitrous acid does not give .







Answer: B

В.



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 $\textbf{49.} \ \textbf{Pyridine} \ \textbf{is} \ \textbf{less} \ \textbf{basic} \ \textbf{than} \ \textbf{triethylamine} \ \textbf{because} \ .$

A. pyridine has aromatic character

B. nitrogen in pyridine is $\mathit{sp}^2\text{-hybridized}$

- C. pyridine is a cyclic system
- D. in pyridine the lone pair of nitrogen is delocalized .

Answer: B



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50. Which of the following chemicals are used to manufacture methy1 isocyanate that caused Bhopal Tragedy?

Methylamine

- (ii) Phosgene
- (iii) Phosphine (iv) Dimethylamine.
 - A. (1)and(iii)
 - B. (iii)and(iv)
 - C. (i)and(ii)

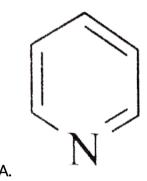
D. (ii)and(iv)

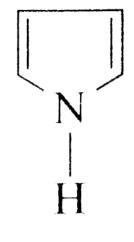
Answer: C



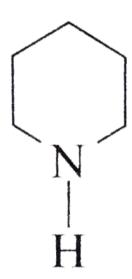
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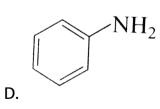
51. The strongest base among the following .





В.





Answer: C

C.



ward veda a calcular

52. Among the following dissocitation constant is highest for .

A.
$$C_6H_5OH$$

B.
$$C_6H_5CH_2OH$$

C.
$$CH_3C = CH$$

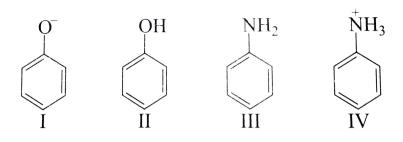
D.
$$CH_3\overset{+}{N}_3Cl^-$$

Answer: D



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53. Coupling of diazonium salts of following takes place in the order

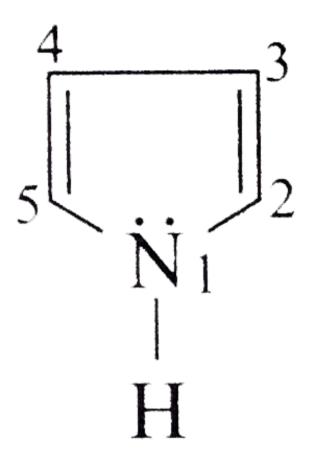




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Archives

1. In pyrole the electron density is maximum on



 $\mathsf{A.}\,2$ and 3

B. 3 and 4

C. 2 and 4

Answer: D



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2. Which one of the following -compounds does not react with nitrous acid ? .

A.
$$H_3C$$
 CH_2 NO_2

$$H_3C$$
 CH_2 NO_2 B. H_3C

$$H_3C$$
 H_3C
 C
 H_3C

$$H_3C$$
 CH
 NO_2
 O

Answer: C

3. A given nitrogen-containing compound A reacts with Sn/HCI followed by HNO_2 to give an unstable compund $B.\ B$ on treatment with pheno1 forms a beautiful coloured compound C with the molecular formula $C_{12}H_{10}N_2O$ The structure of compound A is .

$$NH_2$$

$$NO_2$$

В.



4. The product formed by the reaction of an aldehyde with a primary amine is:

A. Aromatic acid

B. Schiff bases

C. Ketone

D. Carboxylic acid

Answer: B



- 5. The correct statement regarding the basicity of arylamines is .
 - A. Arylamines are generally more basic than alkylamines because the nitrogen aton in arylamines is sp hydridized .
 - B. Arylamines are generally less basic than alkylamines because the nitrogen lone-pair electrons are delocalized by interaction with the aromatic ring pi electron system .
 - C. Arylamines are generally less basic than alkylamines because the nitrogen lon pair electrons are delocalized by interaction with the aromatic ring pi electron system .
 - D. Arylamines are generally more basic than alkylamines because of ary1 group .



6. Consider the nitratio of benzene using mixed conc. H_2SO_4 and HNO_3 . If a large amount of $KHSO_4$ is added to the mixture, the rate of nitration will be :

- A. doubled
- B. faster
- C. slower
- D. unchanged

Answer: C



7. The number of structure isomers possible from the molecular formula C_3H_9N is:

- A. 2
- B. 3
- C. 4
- D. 5

Answer: C



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8. The following reaction is known by the name

$$NH_2 + CI$$
 $NaOH$
 $NaOH$
 $NaOH$

C. Friedel-Craft's reaction D. Perkin's reaction Answer: B **Watch Video Solution** 9. Method by which Aniline can t be prepared is . A. reduction of nitrobenzene with H_2Pd in ethano1 B. potassium salt of phthalimide treated with chlorobenzene followed by hydrolysis with aqueous NaOH solution C. hydrolysis of phenyisocyanide with acidic solution

A. Acetylation

B. Schotten-Baumann reaction

D. degradtion of benzamide with bromine in alkaline solution

Answer: B

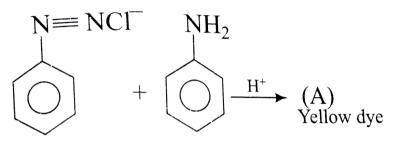


10. The electrolytic reduction of nitrobenzene in strongly acidic medium produces.

- A. Aniline
- B. p-Aminophenol
- C. Azoxybenzene
- D. Azobenzene

Answer: B

11. In the following reaction the product (A) is



$$NH_2$$

Answer: D



12. Which of the following will be most stable diazonium salt $RN_2^+X^-$? .

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

B.
$$C_6 H_2 H_2^{\,=} X^-$$

C.
$$CH_3N_2^{\,+}\,X^-$$

D.
$$C_6H_5CH_2N_2^{\,+}\,X^-$$

Answer: B



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13. Nitrobenzene on reaction with conc $HNO_3 \, / \, H_2SO_4$ at

 $80-100^{\circ} \mathit{C}$ forms which one of the following products .

A. 1,3-dinitrobenzene

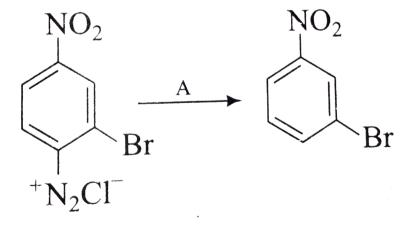
- B. 1,4-Dinitrobenzene
- C. 1,2,4-Trinitrobenzene
- D. 1,2-Dinitrobenzene

Answer: A



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14. In the reaction A is



A. Cu_2Cl_2 s

B. H_3PO_2 and H_2O .

C. H^+/H_2O

D. $hgSO_4 \, / \, H_2SO_4$.

Answer: B



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15. An organic compound $A(C_3H_9N)$ when treated with ntrous acid gave an alcohol and N_2 gas was evolved (A) on warming with $CHCI_3$ and caustic potash gave (C) which on reduction gave is isoproymethylamine Predict the structure of (A).

A.
$$H_2N-CH_2 \\ CH_2-NH_2 \\ H_3C \\ CH-NH_2 \\ B.$$

$$\begin{array}{c} H_2N-CH_2 \\ C. & NH-NH_2 \end{array}$$

$$\begin{array}{c} H_3C \\ H_3C \end{array} N - CH_3$$



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16. Which of the follwing compounds is most basic?.

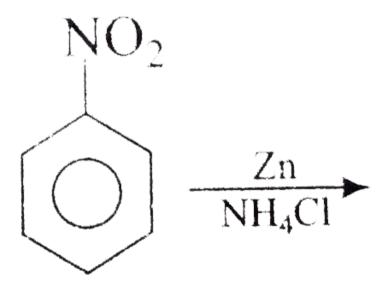
A.
$$O_2N$$
— $\ddot{N}H_2$

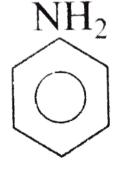
$$\mathsf{R} = \mathsf{CH}_2 \mathsf{NH}_2$$



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17. What is the product obtained in the following reaction





A.



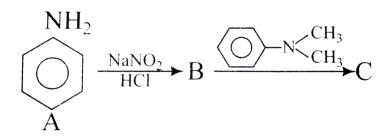
В.

Answer: B



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18. In a reactione a coloured product ${\cal C}$ was obtained The structure of ${\cal C}$ would be



$$A. \xrightarrow{\text{CH}_3} \text{N=N-} \xrightarrow{\text{CH}} \text{NH}$$

$$D \xrightarrow{H_3C} N=N-O-NH_2$$



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19. Which of the following statements about primary amines is false ? .

- A. Alky1 amines are stronger bases than ammonia.
- B. Alky1 amines are stronger bases than ary1 amines.
- C. Alky1 amines react with nitrous aci to produce alcohols.
- D. Ary1 amines react with nitrous acid to produce phenols .

Answer: D



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20. Predict the product

$$\bigcirc$$
 NHCH₃ + NaNO₂ + HCl \longrightarrow Product

$$\begin{array}{c}
\text{CH}_3\\ \\
\text{N-NO}_2
\end{array}$$

$$\begin{array}{c}
OH \\
-N-CH_3
\end{array}$$

D.
$$\begin{array}{c} CH_3 \\ N-N=0 \end{array}$$

Answer: D



21. Nitrobenzenen can be prepared from benzene by using a mixture of conc HNO_3 and conc. H_2SO_4 in the nitrating mixture. Nitric acid acts as a

A. acid

B. base

C. catalyst

D. reducing agent



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22. In a reactione a coloured product C was obtained The structure of C would be

$$\begin{array}{c|c}
 & NH_2 \\
\hline
 & NaNO_2 \\
\hline
 & A
\end{array}$$

$$\begin{array}{c|c}
 & NaNO_2 \\
\hline
 & HCI
\end{array}$$

$$\begin{array}{c|c}
 & CH_3 \\
\hline
 & CH_3
\end{array}$$

$$\mathbf{A}. \stackrel{\text{\tiny CH}}{\bigcirc} -N = N - \stackrel{\text{\tiny CH}}{\bigcirc} -N \stackrel{\text{\tiny CH}}{\bigcirc} -N$$

$$\mathbf{B.} \stackrel{\text{N=N-CH}_2-N}{\underset{\text{CH}_3}{\longleftarrow}}$$

$$\begin{array}{c} CH_3 & CH_2 \\ \hline \\ C. & \end{array}$$

Answer: A



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

- A. Methy1 cyanide
- B. Nitroethane
- C. Methy1 isocyanide
- D. Acetamide

Answer: C



24.	Which	of the	follov	ving	is more	basic than	aniline?.
	VVIIICII	OI CIIC	IOIIOV	v 11116	13 11101 C	basic triair	uninine

- A. Benzylamine
- B. Diphenylamine
- C. Teriphenylamine
- D. p-nitroaniline

Answer: A



25. In a set of reactions propionic acid yielded a compound D $CH_3CH_2COOH \xrightarrow{SOCI_2} B \xrightarrow{NH_3} C \xrightarrow{KOH} D \text{ The structure of } D$ would be .

A. $CH_3CH_2NH_2$

B. $CH_3CH_2NH_2$

C. $CH_3CH_2NH_2$

D. $CH_3CH_2NH_2$

Answer: A



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

$$C_6H_5NH_2 \stackrel{NaNO_2}{\longrightarrow} A \stackrel{CuCN}{\longrightarrow} B \stackrel{H_2}{\longrightarrow} C \stackrel{HNO_2}{\longrightarrow} D$$

The structure of the product D would be .

A. $C_6H_5CH_2OH$

B. $C_6H_5CH_2NH_2$

C. C_6H_5NHOH

D. $C_6H_5NHCH_2CH_3$

Answer: A



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27. Electrolytic reduction of nitrobenzene in weakly acidic medium gives .

A. aniline

B. nitrosobenzene

C. N-phenylhydroxylamine

D. p-hydroxylamine

Answer: A



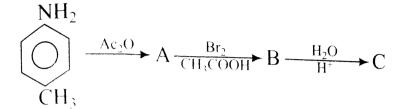
28. Aniline when diazotiesd in cold and then treated with dimethy1 aniline gives a coloured product Its structure would be

- $A. ^{CH_3NH-O} N=N-O-NHCH_3$
- $B. \quad CH_3 \longrightarrow N=N \longrightarrow NH_2$
- C. $(CH_3)_2N$ —N=N—N=N
- $\textbf{D.} \stackrel{(CH_3)_2N}{\longrightarrow} N=N \stackrel{\frown}{\longrightarrow} CH_3$

Answer: C



29. Compound C would be



В.

$$NH_2$$
 Br
 CH_3

Answer: A

D.



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30. $CH_3CH_2Ci \xrightarrow{NaCN} X \xrightarrow{Ni/H_2} Y \xrightarrow{Acetic} Z$

 \boldsymbol{Z} in the above reaction 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: A



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31. The product 'P' in the above reactions is

$$C \equiv N$$

$$+ CH_3MgBr \longrightarrow Q \xrightarrow{H_3O^+} P$$

$$OCH_3$$

В.



32. Intermediate formed during reaction of $RCONH_2$ with Br_2 and KOH are .

- A. RCONHBr and RNCO
- B. RNHCObr and RNCO
- C. RNHBr and RCONHbr
- D. $RCONBr_2$

Answer: A



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33. Match the compounds given in List I with their characteristic reactions given in List II Select the correct option

2	List I (Compounds)		List II (Reactions)
(a)	CH ₃ CH ₂ CH ₂ CH ₂ NH ₂	(i)	Alkaline hydrolysis
(b)-	CH ₃ C ≡ CH	(ii)	With KOH (alcohol) and CHCl ₃ produces bad smell
(c)	CH ₃ CH ₂ COOCH ₃	(iii)	Gives white ppt. with ammoniacal AgNO ₃
(d)	CH ₃ CH(OH)CH ₃	(iv)	With Leaves reagent cloudiness appears offer 5 minutes

- A. (ii) (i) (iv) (iii)
- B. (iii) (ii) (i) (iv)
- C. (ii) (iii) (i) (iv)
- D. (iv) (ii) (iii) (i)

Answer: C



34. An organic compound (A) on reduction gives compound (B) which on treatment with $CHCI_3$ and alcoholic KOH gives compound (C) which on hydrolysis gives aniline but on compound (C) which on hydrolysis gives aniline but on catalytic reduction gives n-methylaniline The compound (A) is .

A. nitrobenzene

B. nitromethane

C. Methylamine reacts with nitrous acid and liberates N_2 from aqueous solution .

D. aniline

Answer: A



35. Acetamide is treated separaately with the following reagents

Which one of these would give methylamine?.

- A. $NaOH, Br_2$
- B. Sodalime
- C. $Hotconc.\ H_2SO_4$
- D. PCI_5

Answer: A



36. In a set of reaction m-bromobenzoic acid gives a product D.

Identify the product D

COOH
$$SOCl_2 \longrightarrow B \xrightarrow{NH_3} C \xrightarrow{NaOH} D$$

$$Br$$

