



## CHEMISTRY

### BOOKS - MTG GUIDE

# ORGANIC COMPOUNDS CONTAINING NITROGEN

#### Illustration

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



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2. How will you convert the following:

Nitrobenzene into aniline



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3. How will you convert the following:

Ethanoic acid into methanamine



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4. Propanamine and N,N-dimethylmethanamine contain the same number of carbon atoms, even though propanamine has higher boiling point than N,N-dimethylmethanamine. Why?

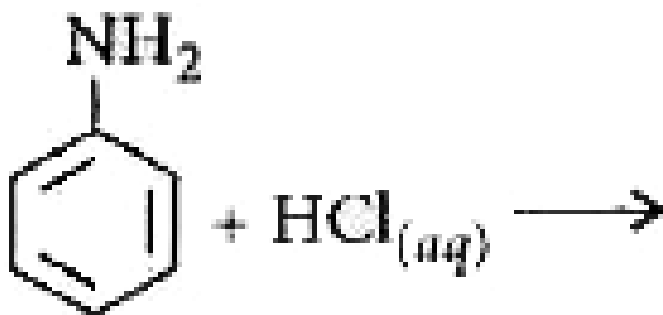
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5. Complete the following reactions :



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6. Complete the following reactions :



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7. Give the chemical tests to distinguish between the following pairs of compounds :

Methylamine and dimethylamine



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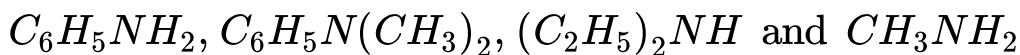
8. Give the chemical tests to distinguish between the following pairs of compounds :

Aniline and N-methylaniline



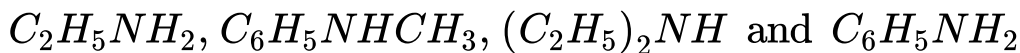
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9. Arrange the following compounds in an increasing order of basic strength :



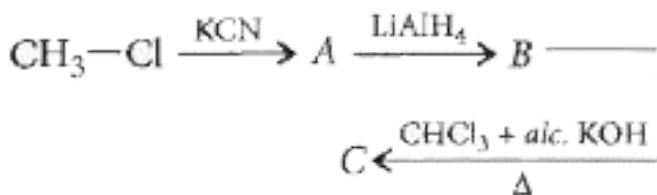
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10. Arrange the following compounds in a decreasing order of pK<sub>b</sub> values :



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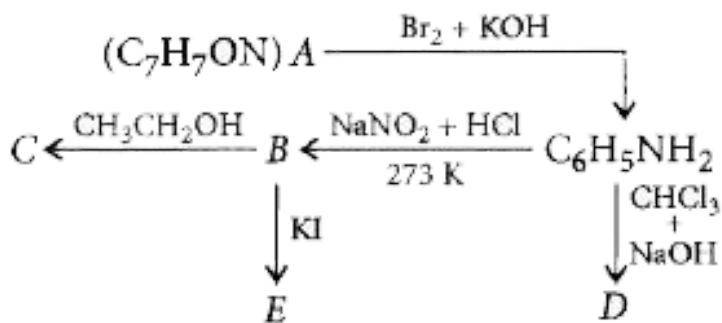
11. Write the structures of A, B and C in the following :



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12. An aromatic compound 'A' of molecular formula  $C_7H_7ON$  undergoes a series of reactions as shown below. Write the structures of A, B, C, D and E in the

following reactions :



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13. Write the reaction involved in : Diazotisation

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14. Aromatic diazonium salts are more stable than aliphatic diazonium salts. Why ?

Such a charge delocalisation is not possible in aliphatic

diazonium salts and hence they are less stable than aromatic diazonium salts.

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**15.** How will you bring about the following conversion :  
Nitrobenzene to phenol

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**16.** How will you bring about the following conversion :  
Nitrobenzene to benzoic acid.

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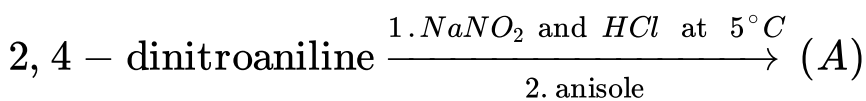


17. How will you bring about the following conversion :

Aniline to benzyl alcohol.

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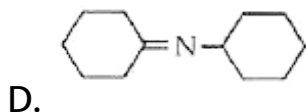
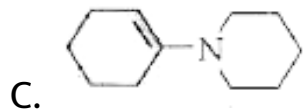
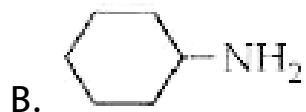
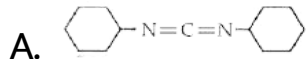
18. Complete the following with appropriate structure :



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## Neet Cafe Topicwise Practice Questions

1. Which of the following compounds is an enamine?



**Answer: C**



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2.  $C_3H_9N$  represents

A. primary amine

B. secondary amine

C. tertiary amine

D. all of these

**Answer: D**



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**3. Which of the following is not an explosive?**

A. Nitroglycerine

B. o-Aminotoluene

C. Dynamite

D. Trinitrotoluene

**Answer: B**



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4. The number of resonating structures of aniline is

A. 2

B. 3

C. 4

D. 5

**Answer: D**



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5. The IUPAC name for  $(CH_3)_2NC(CH_3)_3$  is

A. N, N-dimethyl-2-methyl-1-propanamine

B. N, N-dimethyl-2-methyl-2-propanamine

C. dimethyl t-butyl amine

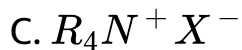
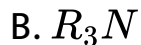
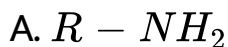
D. N, N-dimethyl-2-butanamine.

**Answer: B**



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6. The general formula of quaternary ammonium compound is



**Answer: C**



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7. Ethyl methyl propylamine forms non superimposable mirror images but it does not show optical activity because

A. of rapid flipping

B. amines are basic in nature

C. nitrogen has a lone pair of electrons

D. of absence of asymmetric nitrogen.

**Answer: A**



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**8.** The valency of nitrogen in tertiary amine is

A. 0

B. 3

C. 2

D. 4

**Answer: B**

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9. Treatment of ammonia with excess of ethyl iodide will yield

A. diethyl amine

B. ethyl amine

C. triethyl amine

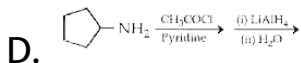
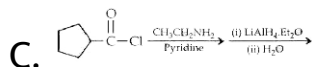
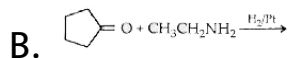
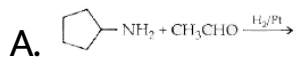
D. tetraethylammonium iodide.

**Answer: D**

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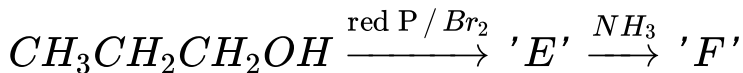
10. Which of the following does not give N-ethylcyclopentylamine as major product?



Answer: C

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11. Identify the compound 'F' in the following series of reactions



- A. n-Propylamine
- B. n-Ethylamine
- C. Methylamine
- D. 2-Aminopropane

**Answer: A**



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12. Alkanamide, which on Hofmann's reaction gives 1-phenyl ethylamine, is

A. 2-phenylpropanamide

B. 3-phenylpropanamide

C. 2-phenylethanamide

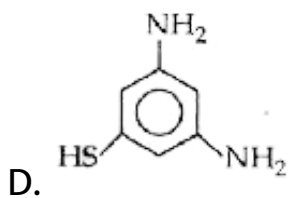
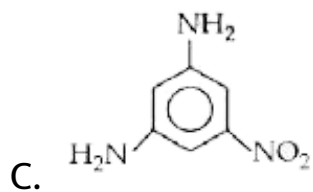
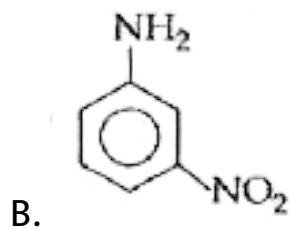
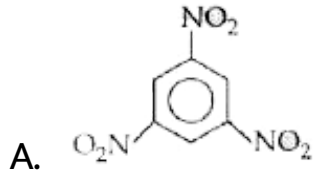
D. N-phenylethanamide.

**Answer: A**



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13. The major product (70% to 80%) of the reaction between m-dinitrobenzene with  $(NH_4)_2S$  is



**Answer: B**



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



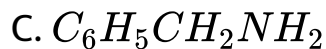
Answer: C



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15. When phenylacetic acid is heated in presence of hydrazoic acid and conc.  $H_2SO_4$  at  $50^\circ C$  to  $55^\circ C$ ,

it gives



D. none of these

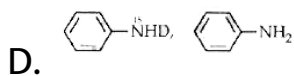
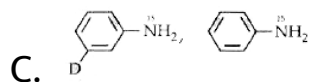
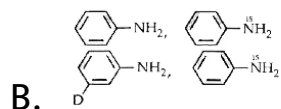
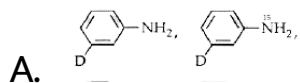
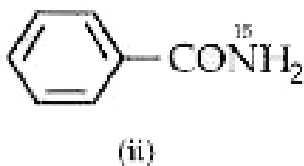
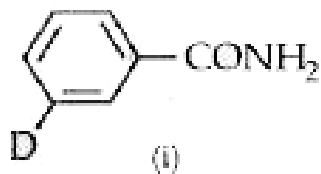
**Answer: C**



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**16.** What are constituent amines formed when the mixture of (i) and (ii) undergo Hoffmann bromamide

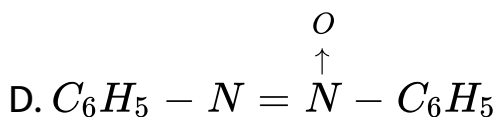
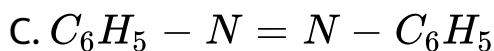
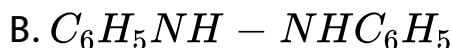
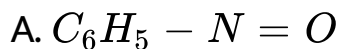
degradation?



**Answer: B**

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17. In the reduction of nitrobenzene, which of the following is the intermediate?



**Answer: A**



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18. The reagent that reacts with nitromethane to form methylhydroxyl amine is

A. Zn/HCl

B.  $Zn / NH_4Cl$

C. Zn/NaOH

D. Sn/HCl

**Answer: B**



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19. Which reaction sequence would be best to prepare 3-chloroaniline from benzene?

A. Chlorination, nitration, reduction

B. Nitration, chlorination, reduction

C. Nitration, reduction, chlorination

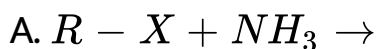
D. Nitration, reduction, acetylation, chlorination,  
hydrolysis.

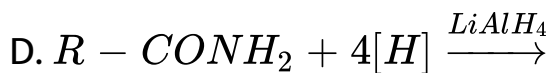
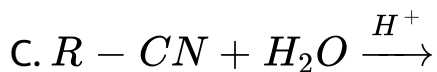
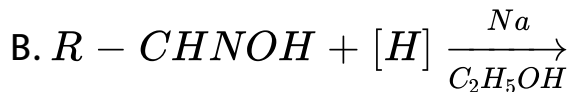
**Answer: B**



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20. Which of the following reactions does not yield an amine?

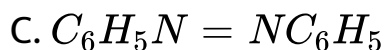
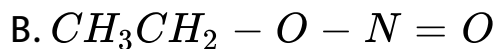


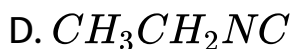


**Answer: C**

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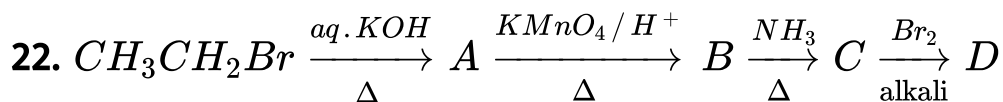
21. Which of the following gives primary amine on reduction?



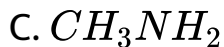
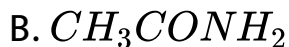


Answer: A

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, "D" is



Answer: C



23. Which of the following statements is not correct?

A. Replacement of halogen by  $-NH_2$  in alkyl halide is a nucleophilic substitution reaction.

B. Aryl halides show more reactivity as compared to alkyl halides in the replacements of halogen by the  $-NH_2$  group.

C. During the replacement of halogen by  $-NH_2$  group, ammonia is taken in large excess so as to avoid the formation of  $2^\circ$  and  $3^\circ$  amines.

D. Tertiary alkyl halide generally produces alkene instead of the replacement of halogen by  $-NH_2$  group.

**Answer: B**

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24. An organic compound (A) on reduction gives compound (B). (B) on treatment with  $CHCl_3$  and alcoholic KOH gives (C). (C) on catalytic reduction gives N-methylaniline. The compound (A) is

A. methylamine

B. nitromethane

C. aniline

D. nitrobenzene

**Answer: D**



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**25.** The reaction by which a primary amine is formed from a primary amide is called

A. Hofmann bromamide reaction

B. Gabriel phthalimide reaction

C. Carbylamine reaction

D. Liebermann nitrosoamine reaction

**Answer: A**



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26. Gabriel phthalimide reaction is used for preparation of

A. primary aromatic amines

B. secondary amines

C. primary aliphatic amines

D. tertiary amines

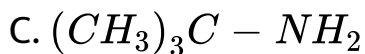
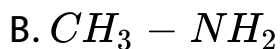
**Answer: C**





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27. The reduction of acetaldoxime gives



**Answer: A**



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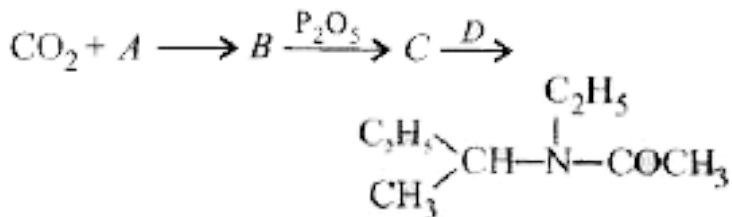
28. Hofmann rearrangement during the conversion of an amide to amine is

- A. intermolecular
- B. intramolecular
- C. both (a) and (b)
- D. none of these.

**Answer: B**



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29.

Which of the following are A and D in the above series of reactions?

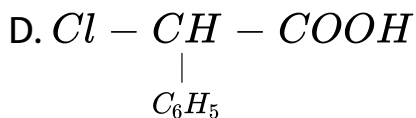
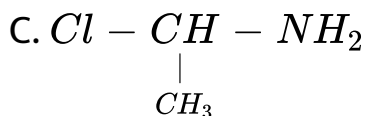
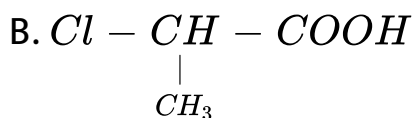
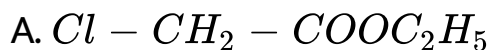
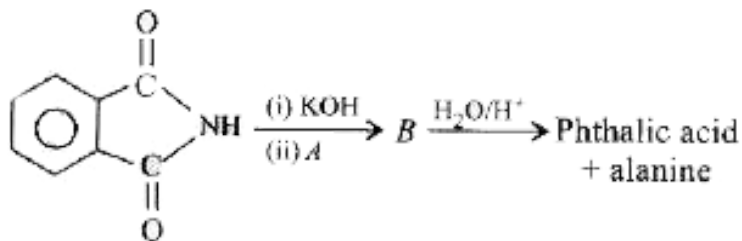
- A.  $\text{C}_2\text{H}_5\text{MgX}$  and  $(\text{C}_2\text{H}_5)_2\text{NCH}_3$
- B.  $\text{C}_2\text{H}_5\text{MgX}$  and  $(\text{CH}_3)_2\text{NC}_2\text{H}_5$
- C.  $\text{C}_2\text{H}_5\text{MgX}$  and N-methyl-2-butanamine
- D.  $\text{CH}_3\text{MgX}$  and N-ethyl-2-butanamine

**Answer: D**



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30. Identify A in the following reaction :



Answer: B

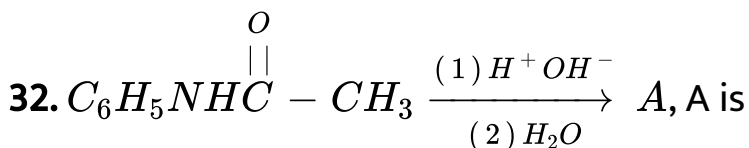
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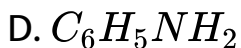
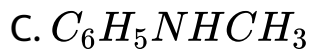
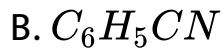
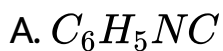
31. Thermal decomposition of hydroxamic acid in inert solvent gives isocyanate, which is hydrolysed to give primary amine. This reaction is

- A. Lossen rearrangement
- B. Curtius reaction
- C. Hofmann bromamide reaction
- D. Schotten-Baumann reaction.

Answer: A

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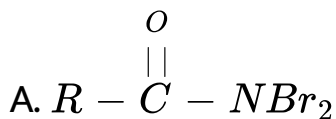


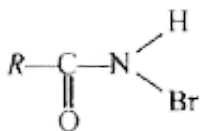
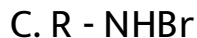
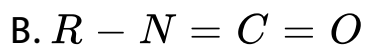


**Answer: D**

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33. The reaction of  $R - \overset{O}{\parallel}C - NH_2$  with a mixture of  $Br_2$  and KOH gives  $R - NH_2$  as a product. The intermediate involved in this reaction are



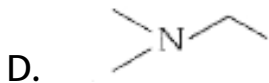
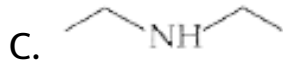


**Answer: B**

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34. Among the following isomeric  $C_4H_{11}N$  amines, one having the lowest boiling point is





**Answer: D**

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**35.** Which one of the following is the strongest base in aqueous solution?

- A. Methyl amine
- B. Trimethyl amine
- C. Aniline
- D. Dimethyl amine



**Answer: D**

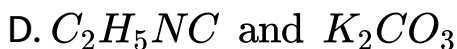


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**36.** In the chemical reaction,



, the compounds (A) and (B) are respectively



**Answer: A**



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37. During ammonolysis,  $1^\circ$  amines act as

A. nucleophiles

B. bases

C. acids

D. electrophiles

**Answer: A**



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38. Amines are reactive because of

A. difference in electronegativity between nitrogen and hydrogen atoms

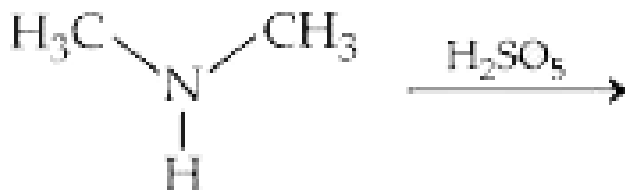
B. presence of unshared pair of electrons

C. both (a) and (b)

D. none of the above

**Answer: C**

 [View Text Solution](#)



39.

gives

A. tetramethylhydrazine

B. no reaction

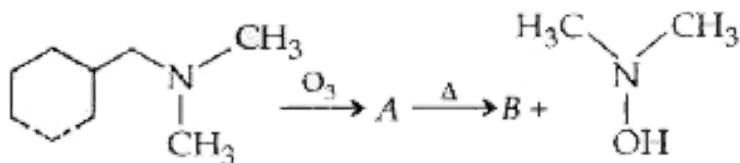
C. dimethylhydroxyl amine

D. acetone

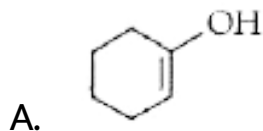
**Answer: C**

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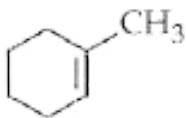
40.



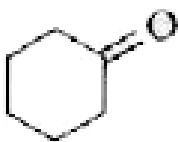
Identify B.



B.



C.



D.



**Answer: D**



[View Text Solution](#)

**41.** Hinsberg's reagent is

A. aliphatic sulphonyl chloride

B. phthalamide

C. aromatic sulphonyl chloride

D.  $ZnCl_2 + \text{conc. } HCl$

**Answer: C**



**View Text Solution**

**42.** Primary amine with Hinsberg's reagent forms

A. N-alkylbenzenesulphonamide soluble in KOH solution.

B. N-alkylbenzenesulphonamide insoluble in KOH solution.

C. N, N-dialkylbenzenesulphonamide soluble in KOH solution.

D. N, N-dialkylbenzenesulphonamide insoluble in KOH solution.

**Answer: A**



**View Text Solution**

**43.** The solubility of  $C_6H_5NH_3^+ Cl^-$  would be highest, among the following solvents in

A. acidic buffer of pH = 3

B. basic buffer of pH = 10

C. neutral buffer of pH = 7

D. pure water

**Answer: B**



**View Text Solution**

**44.**  $3^\circ$  amines with Hinsberg's reagent give

A. no reaction

B. products which are same as that of  $1^\circ$  amine

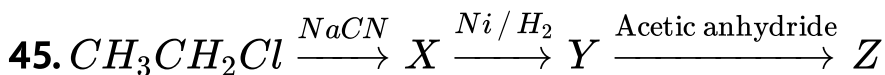
C. products which are same as that of  $2^\circ$  amine

D. products which are a quaternary salt.

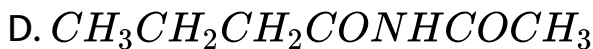
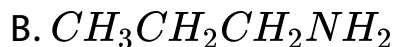


Answer: A

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Z in the above reaction sequence is



Answer: A

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46. Which of the following is the correct decreasing order of boiling points of the given isomeric compounds?

Ethyl dimethylamine (I), N-butylamine (II), Diethylamine (III)

A.  $II > III > I$

B.  $I > II > III$

C.  $III > II > I$

D.  $III > I > II$

**Answer: A**



**View Text Solution**

47. The reagent which could distinguish aniline from cyclohexylamine is

A.  $NaNO_2$ ,  $HCl$ ,  $5^\circ C$  then 2-naphthol

B.  $CH_3COOH$ ,  $NH_2OH$ ,  $H_2O$

C. cold, dil,  $NaHCO_3$

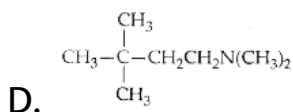
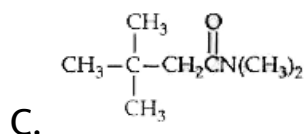
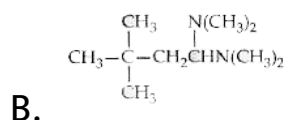
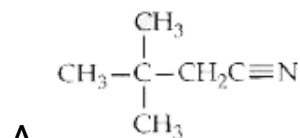
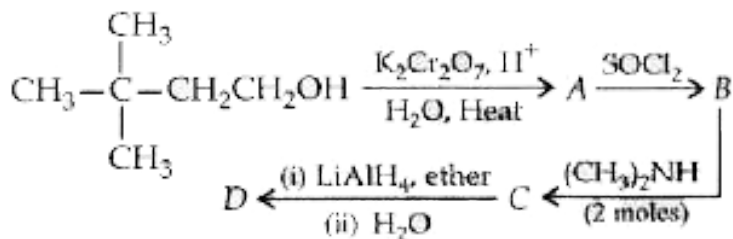
D. cold, dil.  $HCl$ .

**Answer: A**



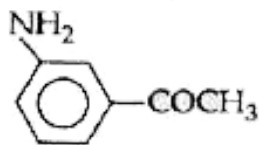
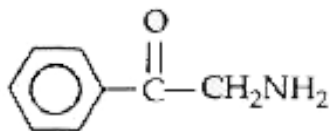
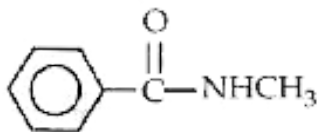
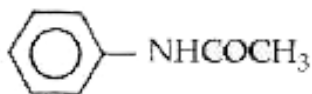
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48. Identify product D in the following reaction sequence:



Answer: D

49. The correct order of basic strength of the following are



A.  $1 > 2 > 3 > 4$

B.  $4 > 2 > 3 > 1$

C.  $3 > 4 > 2 > 1$

D.  $3 > 2 > 4 > 1$

**Answer: C**



**View Text Solution**

**50.** In the diazotisation of aniline with sodium nitrite and hydrochloric acid, the excess of hydrochloric acid is used primarily to

- A. suppress the concentration of free aniline available for coupling
- B. suppress the hydrolysis to phenol
- C. ensure a stoichiometric amount of nitrous acid and HCl
- D. neutralise the base liberated.

**Answer: A**

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51. Bromination of aniline gives 2,4,6-tribromoaniline, whereas the nitration of aniline with mixed acids gives m-nitroaniline. In the case of nitration, the m-derivative is formed because

A. in the presence of strong acids, the amino group is

protonated to  $-NH_3^+$  which is. m-orienting

B. m-nitroaniline is thermodynamically more stable

than the ortho and para-isomers

C. nitro group cannot enter ortho and para positions

due to steric factor

D. the mechanism for bromination and nitration are

different.

**Answer: A**



**View Text Solution**

**52. Secondary amine with Hinsberg's reagent forms**

A. N-alkylbenzenesulphonamide soluble in KOH

solution.



B. N-alkylbenzenesulphonamide insoluble in KOH solution.

C. N, N-dialkylbenzenesulphonamide soluble in KOH solution.

D. N,N-dialkylbenzenesulphonamide insoluble in KOH solution.

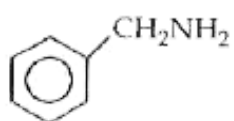
**Answer: D**



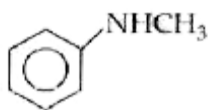
**View Text Solution**

**53.** Which of the following is the strongest base?

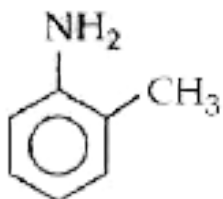
A.



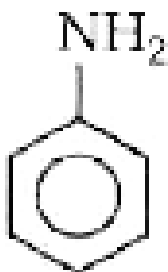
B.



C.



D.

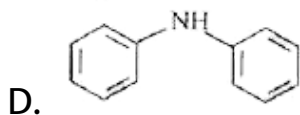
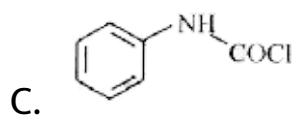
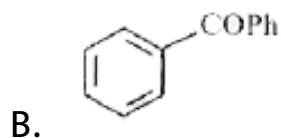
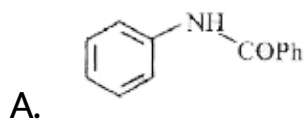
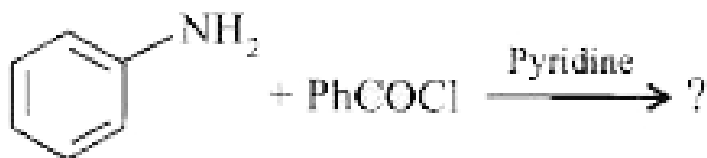


**Answer: A**



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54. The following reaction yields which of the given products?



Answer: A



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55. 3-Nitroaniline is subjected to the treatment of various reagents in the following sequence.

(i)  $NaNO_2 / HCl, 280K$

(ii) KI

(iii) Cu powder

The final product will be

A. 3,3'-diaminobiphenyl

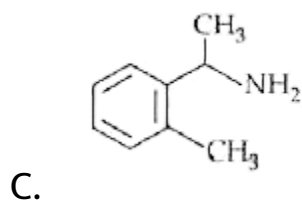
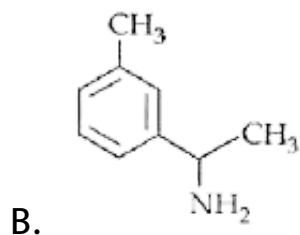
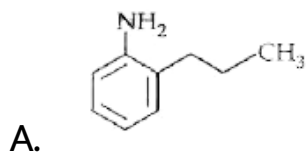
B. 3-iodoaniline

C. 3-nitroiodobenzene

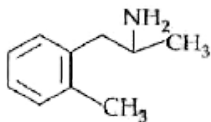
D. 3,3'-dinitrobiphenyl

**Answer: D**

56. An organic compound (A)  $C_9H_{13}N$  dissolves in dil. HCl and releases  $N_2$  with  $HNO_2$  giving an optically active alcohol. Alcohol on oxidation gives dicarboxylic acid, which on heating form anhydride. The organic compound (A) is



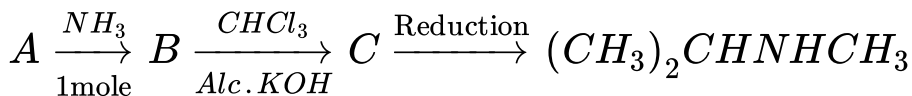
D.



Answer: C

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57. Identify A in the following sequence of reactions :



A. Ethyl halide

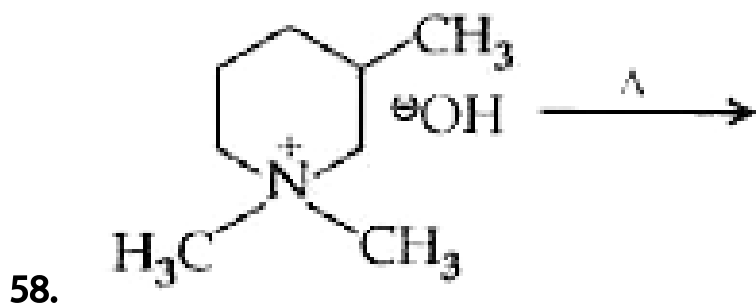
B. Iso-propylamine

C. n-Propyl halide

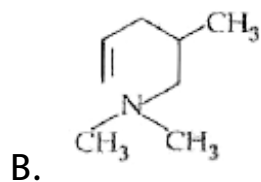
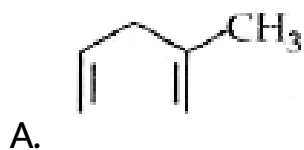
D. Iso-propyl halide

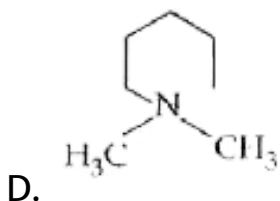
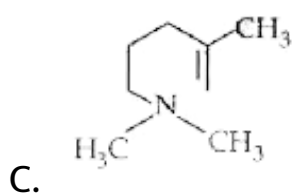
Answer: D

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The major product will be





**Answer: B**

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59. Which order of basicity is correct?

A. Aniline > m-toluidine > o-toluidine

B. Aniline > o-toluidine > m-toluidine

C. o-toluidine > aniline > m-toluidine



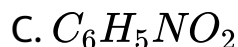
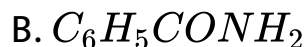
D. o-toluidine < aniline < m-toluidine

Answer: D



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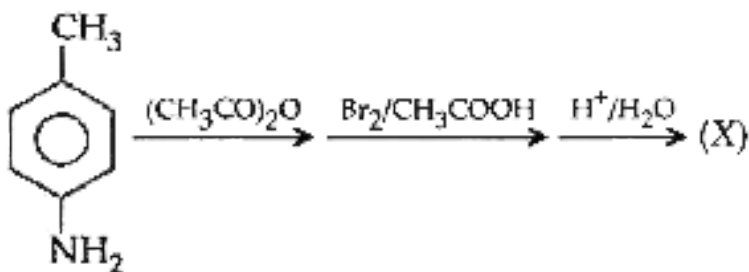
60. A compound 'A' has a molecular formula,  $C_7H_7NO$ . On treatment with  $Br_2$  and KOH, 'A' gives an amine 'B' which gives carbylamine test. 'B' upon diazotisation and coupling with phenol gives an azo dye. 'A' can be



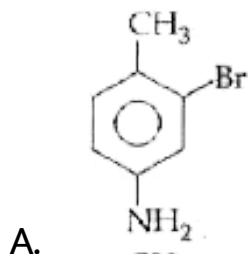
D. *o* - , *m* - or *p* -  $C_6H_4(NH_2)CHO$

Answer: B

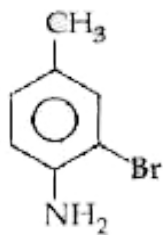
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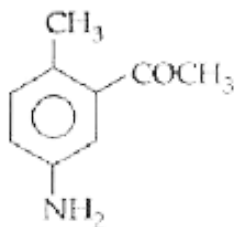
X is



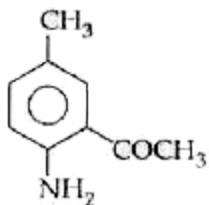
B.



C.



D.



**Answer: B**

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62. Aniline when acetylated, the product on nitration followed by alkaline hydrolysis gives

- A. acetanilide
- B. o-nitroacetanilide
- C. p-nitroaniline
- D. m-nitroaniline

**Answer: C**

 [View Text Solution](#)

63. Reaction of cyclohexanone with dimethyl amine in the presence of catalytic amount of an acid forms a

compound if water during the reaction is continuously removed. The compound formed is generally known as

- A. a Schiff's base
- B. an enamine
- C. an imine
- D. an amine

**Answer: B**



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**64.** Aniline is reacted with bromine water and the resulting product is treated with an aqueous solution of sodium nitrite in presence of dilute HCl. The compound

so formed is converted into tetrafluoroborate which is subsequently heated dry. The final product is

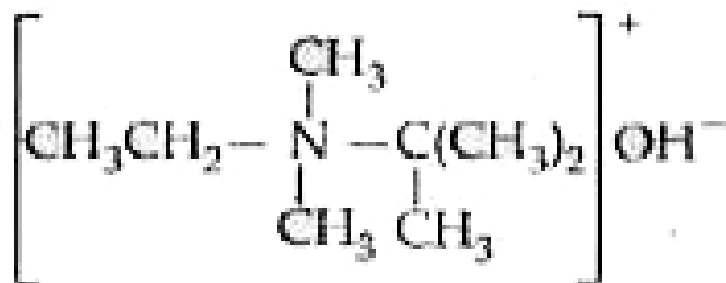
- A. p-bromofluorobenzene
- B. p-bromoaniline
- C. 2,4,6-tribromofluorobenzene
- D. 1,3,5-tribromobenzene

**Answer: C**

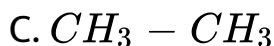
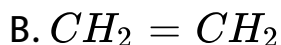


**View Text Solution**

65. Thermal decomposition of



gives



Answer: B



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66. Direct nitration of aniline is not a feasible process because

A. the reaction cannot be stopped at the mononitration stage

B. a mixture of o, m and p-nitroaniline is always obtained

C. nitric acid oxidises most of aniline to give oxidation products along with only a small amount of nitrated products

D. all of the above.

**Answer: C**



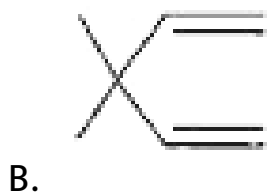
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67. Repeated Hofmann elimination (exhaustive methylation followed by heating with AgOH) will often remove a nitrogen atom from an amine molecule.



Which of the following compounds is likely to be a product in this case?



C.



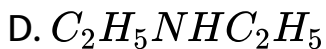
D.



**Answer: B**

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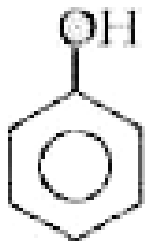
**68.** An optically inactive amine (A)  $C_4H_{11}N$  on treatment with  $HNO_2$  gives an alcohol (B). The compound (B) on heating with conc.  $H_2SO_4$  at 453 K gives an alkene (C). The (C) on treatment with HBr gives an optical active compound (D) having molecular formula  $C_4H_9Br$ . Identify (A).



**Answer: B**

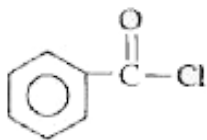
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69. Aniline reacts with phosgene to form

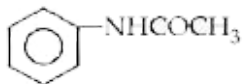


A.

B.



C.



D.



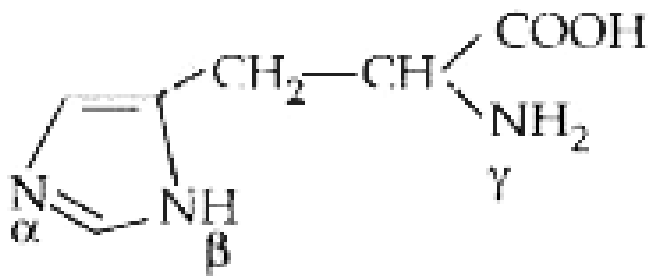
**Answer: D**



**View Text Solution**

70. When the imidazole ring of histidine is protonated, tendency of nitrogen to be protonated (proton migrates

from-COOH) is in the order



A.  $\beta > \gamma > \alpha$

B.  $\gamma > \beta > \alpha$

C.  $\gamma > \alpha > \beta$

D.  $\beta > \alpha > \gamma$

**Answer: C**



**View Text Solution**

71. Primary amines on heating with  $CS_2$  followed by excess of mercuric chloride yields isothiocyanates. The reaction is called

A. Hofmann mustard oil reaction

B. Perkin reaction

C. Fries reaction

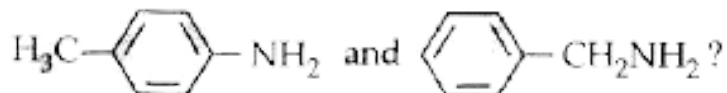
D. Diels-Alder reaction

**Answer: A**



**View Text Solution**

72. Which of the following reagents will be useful to distinguish between



- A. Dilute HCl
- B.  $C_6H_5SO_2Cl$  and  $OH^- / H_2O$
- C. HONO then  $\beta$ -naphthol
- D.  $AgNO_3$  in  $H_2O$

**Answer: C**



**View Text Solution**

73. Which of the following statements is correct?

A.  $C_2H_5\overset{+}{N}H_3OH^-$  is acidic.

B.  $C_2H_5NH_2$  is a weaker base than  $(C_2H_5)_3N$ .

C.  $C_2H_5NH_2$  is less basic than  $NH_3$ .

D.  $C_2H_5NH_2$  forms salts with strong bases.

**Answer: B**



[View Text Solution](#)

74. In the Hofmann's method for separation of  $1^\circ$ ,  $2^\circ$  and  $3^\circ$  amines, the reagent used is



A. acetyl chloride

B. benzene sulphonyl chloride

C. diethyl oxalate

D. nitrous acid

**Answer: C**



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**75.** Match the entries of column I with appropriate entries of column II and choose the correct option.

Column I		Column II	
(A)	Aniline	(p)	Can be made by Gabriel phthalimide reaction.
(B)	N-Methylaniline	(q)	Undergoes electrophilic substitution reaction with $\text{HNO}_2$
(C)	N,N-Dimethyl aniline	(r)	Forms yellow oily product with $\text{HNO}_2$
(D)	Benzylamine	(s)	Gives azo dye test

A. A-s, B-r, C-q, D-p

B. A-q, B-s, C-p, D-r

C. A-r, B-p, C-s, D-q

D. A-p, B-q, C-r, D-s

**Answer: A**



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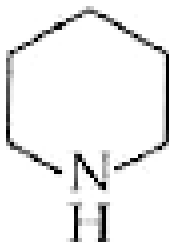
76. The strongest base among the following is



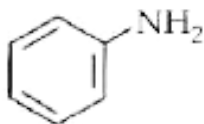
A.



B.



C.



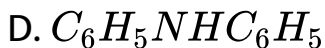
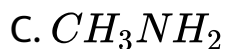
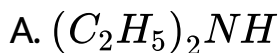
D.

**Answer: C**



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77. Which of the following compounds will dissolve in an alkali solution after it has undergone reaction with Hinsberg's reagent?



**Answer: C**



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**78.** Aniline is identified by

- A. Kolbe's reaction
- B. Reimer - Tiemann reaction
- C. Carbylamine reaction
- D. Haloform reaction

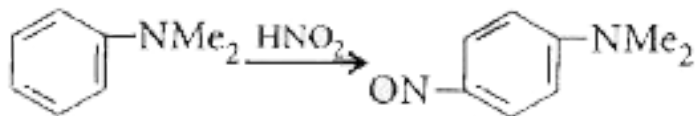
**Answer: C**



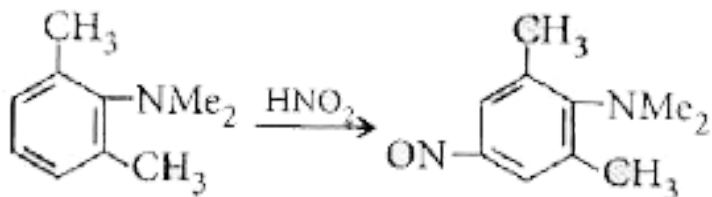
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**79.** Consider the following reactions :

Reaction I :



Reaction II :



Which of the following is a correct comparison of rate of reaction?

A.  $r_I > r_{II}$

B.  $r_I < r_{II}$

C.  $r_I = r_{II}$

D. Reactions are not possible.

**Answer: A**



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80. Which of the following orders is true regarding the basic nature of  $-NH_2$  group?

A. o-Toluidine  $>$  Aniline  $>$  o-Nitroaniline

B. o-Toluidine  $<$  Aniline  $>$  o-Nitroaniline

C. o-Toluidine  $<$  Aniline  $<$  o-Nitroaniline

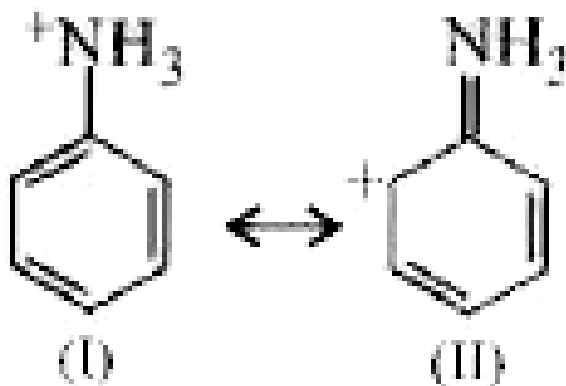
D. o-Toluidine  $>$  Aniline  $<$  o-Nitroaniline

**Answer: B**



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81. Examine the following two structures for the anilinium ion and choose the correct statement from the ones given below :



- A. II is not an acceptable canonical structure because it is non-aromatic.
- B. II is not an acceptable canonical structure because nitrogen has 10 valence electrons.
- C. II is an acceptable canonical structure.



D. Both (a) and (b)

**Answer: B**



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**82.** Which of the following compounds gives dye test?

A. Aniline

B. Methyl amine

C. Diphenyl amine

D. Ethyl amine

**Answer: A**



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83. Choose the correct statement.

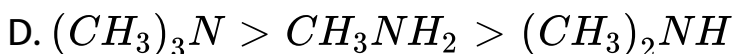
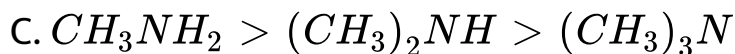
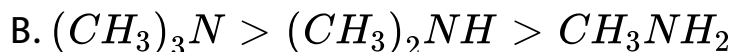
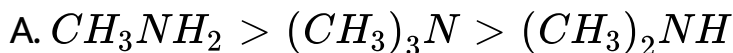
- A. Methylamine is slightly acidic.
- B. Methylamine is less basic than ammonia.
- C. Methylamine is a stronger base than ammonia.
- D. Methylamine forms salts with alkalies.

**Answer: C**



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84. The order of basic strength among the following amines in benzene solution is

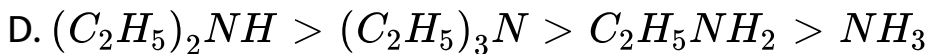
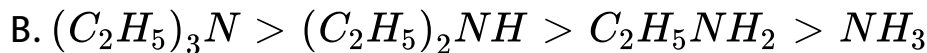
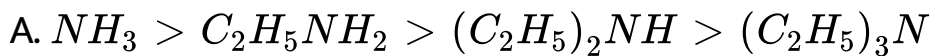


Answer: B



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85. What is the decreasing order of basicity of primary, secondary and tertiary ethylamines and  $NH_3$ ?



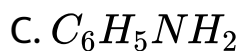
**Answer: D**



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**86.** Which of the following compounds cannot be identified by carbylamine test?





**Answer: D**



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**87.** Which of the following statements is not correct?

A. Methylamine is more basic than  $NH_3$ .

B. Amines form hydrogen bonds.

C. Ethylamine has higher boiling point than propane.

D. Dimethylamine is less basic than methylamine.

**Answer: D**

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**88.** Oxidation of aniline with manganese dioxide and sulphuric acid produces

A. phenylhydroxylamine

B. nitrobenzene

C. p-benzoquinone

D. phenol

**Answer: C**

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89. Aniline when treated with conc.  $HNO_3$  and  $H_2SO_4$  gives

A. p-phenylenediamine

B. m-nitroaniline

C. p-benzoquinone

D. nitrobenzene

**Answer: B**



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90. The number of resonating structures of anilinium ion is

A. 2

B. 3

C. 4

D. 5

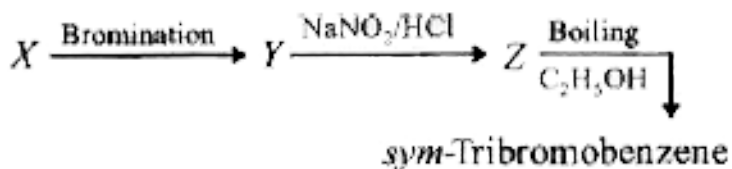
**Answer: A**



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91. In the following reaction, X is



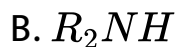
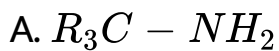
- A. benzoic acid
- B. salicylic acid
- C. phenol
- D. aniline

**Answer: D**



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92. Which has highest  $pK_b$  value?



Answer: D



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93. The compound, which does not react with  $CH_3COCl$  is

A.  $RNH_2$

B.  $R_2NH$

C.  $R_3N$

D. all of these

**Answer: C**



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**94.** A carbon compound which is soluble in conc. HCl solution, and on treatment with sodium nitrite gives nitrogen gas, is

A.  $C_2H_5NH_2$

B.  $CH_3NH_2$

C.  $CH_3CH_2CH_2NH_2$

D. all of these

**Answer: D**



**View Text Solution**

**95.** A ketoxime on reduction and followed by acetylation gives

A. ethylamine

B. isopropylamine

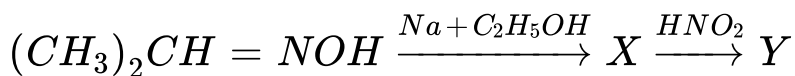
C. monoacetyl isopropylamine

D. diacetyl isopropylamine.

**Answer: D**

 [View Text Solution](#)

**96.** Identify the product Y in the series.



A. 2-Propanol

B. 2-Propanamine

C. 2-Butanol

D. 1-Propanol

**Answer: A**



97.  $CH_3CH_2NH_2$  contains a basic  $-NH_2$  group, but  $CH_3CONH_2$  does not because

A. acetamide is amphoteric in character

B. in ethylamine the electron pair on N-atom is delocalised by resonance

C. in ethylamine there is no resonance while in acetamide the lone pair of electrons on N-atom is delocalised and is less available for protonation

D. none of these.

Answer: C

 [View Text Solution](#)

98. Iso-propylamine on acetylation gives

- A.  $CH_3CH_2 - NHCOCH_3$
- B.  $(CH_3)_2CH - NHCOCH_3$
- C.  $(CH_3)_2CHN(COCH_3)_2$
- D.  $(CH_3)_2CHN(OCH_3)_2$

Answer: C

 [View Text Solution](#)

99. Liebermann's nitroso reaction is used for testing

- A. primary amines
- B. secondary amines
- C. tertiary amines
- D. all of these

**Answer: B**



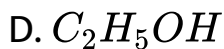
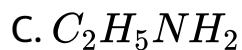
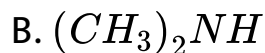
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100. A compound (X) is taken in a test tube which is soluble by adding dilute HCl and small amount of



sodium nitrite is added into it, nitrogen gas is evolved

the compound (X) is



**Answer: C**



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**101.** Identify true statement from the following.

A. Ketoximes on reduction give  $2^\circ$  amines.

- B. Secondary amines yield oily nitrosoamines on treatment with  $HNO_2$
- C. Secondary amines do not react with acetyl chloride
- D. All are correct

**Answer: B**



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**102.** Aniline is heated with  $H_2SO_4$  at 460 K to give

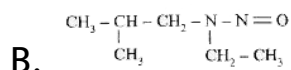
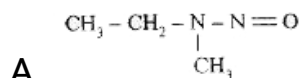
- A. aniline sulphate
- B. benzene sulphonic acid
- C. sulphanilic acid

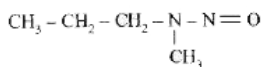
## D. aniline sulphite

**Answer: C**

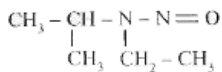
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**103.** An equimolar mixture of alkyl bromide (A) and ammonia gives (B) which on treating with one equivalent of  $CH_3I$  gives (C). (B) and (C) on treating with  $NaNO_2$  and HCl gives (D) and (E) respectively. (D) on oxidation followed by decarboxylation gives ethane. Structure of (E) is





C.



D.

**Answer: C**



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**104.** Which of the following statements is not correct?

A. Aliphatic amines are stronger bases than ammonia.

B. Aromatic amines are stronger bases than ammonia.

C. The alkyl group in alkyl ammonium ion stabilizes the ion more relative to the amine.

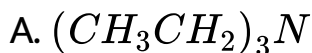
D. The aryl group in aryl ammonium ion stabilizes the ion less relative to the amine.

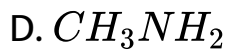
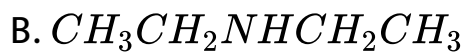
**Answer: B**



**View Text Solution**

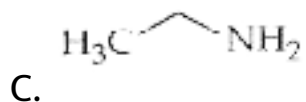
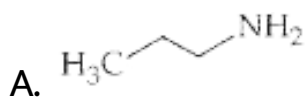
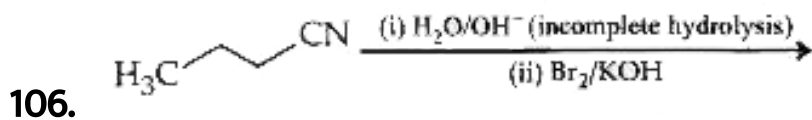
**105.** An organic amino compound reacts with aqueous nitrous acid at low temperature to produce an oily nitrosoamine. The compound is





Answer: B

 [View Text Solution](#)



D.



**Answer: A**



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**107.** What is the product when N-ethyl formamide is heated with  $POCl_3$  ?

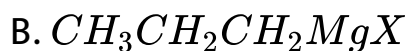
- A. Ethyl cyanide
- B. Butane nitrile
- C. Ethyl carbylamine
- D. Methyl isocyanide

**Answer: C**



[View Text Solution](#)

108. Propionitrile reacts with 'A' to give 'B'. The compound 'B' on addition of HCN gives 'C'. The compound 'C' on reduction gives 1-amino-2-ethyl-4-methyl-2-pentanol. Which of the following is 'A'?



**Answer: D**



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**109.** Reduction of alkanenitriles with sodium and alcohol is called

- A. Rosenmund reduction
- B. Catalytic reduction
- C. Wolff-Kishner reduction
- D. Mendius reaction

**Answer: D**



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110. Acetaldoxime reacts with  $P_2O_5$  (phosphorous pentoxide) to give

A. methyl cyanide

B. methyl cyanate

C. ethyl cyanide

D. none of these

**Answer: A**



[View Text Solution](#)

111. Hydrolysis of benzonitrile gives

A. benzylamine

B. aniline

C. benzoic acid

D. benzene

**Answer: C**



**View Text Solution**

**112.** Butane nitrile may be prepared by heating

A. propyl alcohol with KCN

B. butyl alcohol with KCN

C. butyl chloride with KCN

D. propyl chloride with KCN

**Answer: D**



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**113.** The reaction of benzyl chloride with sodium cyanide followed by reduction with hydrogen in the presence of nickel gives

A.  $\beta$ -phenylethylamine

B. N-iso-butylaniline

C. benzylamine

D. aniline

**Answer: A**

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**114.** The reduction of which of the following compounds would yield secondary amine?

- A. Primary amine
- B. Carbylamine
- C. Alkyl nitrile
- D. Secondary nitro compound

**Answer: B**

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115. Which one of the following does not have  $sp^2$  hybridized carbon ?

A. Acetone

B. Acetic acid

C. Acetonitrile

D. Acetamide

**Answer: C**



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116. The number of  $\sigma$  and  $\pi$  bonds in a molecule of acetonitrile are respectively

A. 3, 4

B. 4, 3

C. 5, 2

D. 2, 5

**Answer: C**



**View Text Solution**

117. Phenyl isocyanide is prepared by which of the following reactions?

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

**Answer: B**



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**118.** Which one of the following is produced by reduction of RCN in sodium and alcohol?





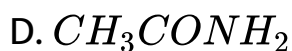
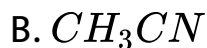
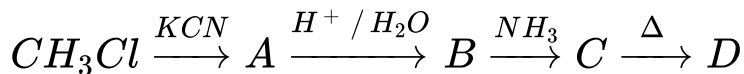


Answer: C



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119. The product D of the reaction,



**Answer: D**

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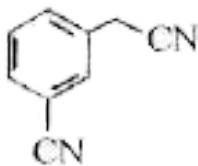
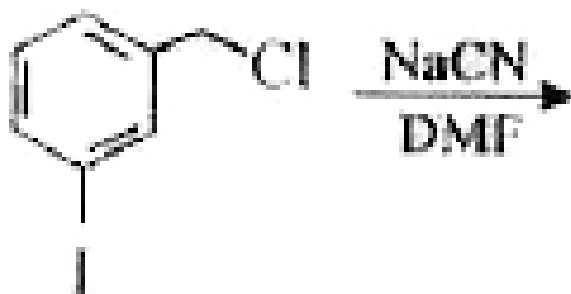
**120.** Ethyl isocyanide on hydrolysis in acidic medium generates

- A. ethylamine salt and methanoic acid
- B. propanoic acid and ammonium salt
- C. ethanoic acid and ammonium salt
- D. methylamine salt and ethanoic acid

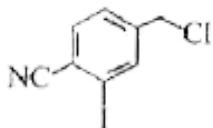
**Answer: A**

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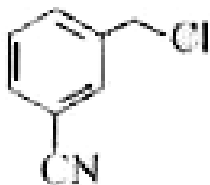
121. The structure of the major product formed in the following reaction is



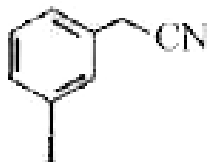
A.



B.



C.



D.

**Answer: D**



[View Text Solution](#)

**122.** Which of the following reacts with chloroform and a base to form phenylisocyanide?

A. Benzene

B. Aniline

C. Nitrobenzene

D. Phenol

**Answer: B**



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**123.** Cyanide and isocyanide are isomers of type

A. tautomer

B. positional

C. structural

D. functional

**Answer: D**



**View Text Solution**

**124.** Gas evolved in Bhopal gas tragedy was

A. methane

B.  $CO_2$

C. methyl isocyanide

D. butene

**Answer: C**



**View Text Solution**

125. Primary nitro compounds react with nitrous acid to form nitrolic acids which dissolve in NaOH giving

- A. yellow solution
- B. blue solution
- C. colourless solution
- D. red solution

**Answer: D**



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126. The following reaction gives :



A. 4-nitrobenzaldehyde

B. 4-nitrobenzyl alcohol

C. 4-aminotoluene

D. 1-nitrobenzoic acid

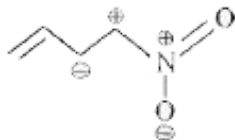
**Answer: D**



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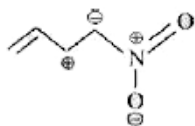
**127.** Among the following, the least stable resonance structure is

A.

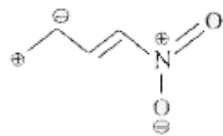




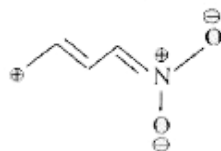
B.



C.



D.

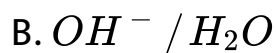
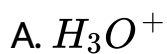


**Answer: A**



[View Text Solution](#)

128. Benzamide can be converted to benzonitrile with



C. KCN

D.  $P_2O_5$

**Answer: D**



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**129.** Which of the following forms butter yellow with benzene diazonium chloride?

A.  $\beta$ -Naphthol

B. Dimethylaniline

C. Phenol

D. Aniline



C.  $1 < 2 < 3 < 4$

D.  $3 < 1 < 2 < 4$

**Answer: C**



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**131.** The indicator that is obtained by coupling the diazonium salt of sulphanilic acid with N,N-dimethylaniline is

A. phenanthroline

B. methyl orange

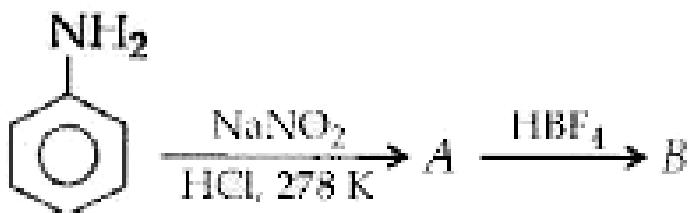
C. methyl red

D. phenolphthalein

Answer: B

 [View Text Solution](#)

132. In the chemical reaction,



the compounds A and B respectively are

A. nitrobenzene and chlorobenzene

B. nitrobenzene and fluorobenzene

C. phenol and benzene

D. benzene diazonium chloride and fluorobenzene.

**Answer: D**

 [View Text Solution](#)

**133.** Toluene is nitrated and the resulting product is reduced with tin and hydrochloric acid. The product so obtained is diazotised and then heated with cuprous bromide. The reaction mixture so formed contains

- A. mixture of o- and m-bromotoluenes
- B. mixture of o- and p-bromotoluenes
- C. mixture of o- and p-dibromobenzenes

D. mixture of o- and p-bromoanilines.

**Answer: B**



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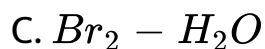
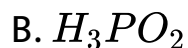
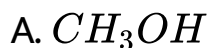
**134.** When benzene diazonium chloride in hydrochloric acid reacts with cuprous chloride, then chlorobenzene is formed. The reaction is called

- A. Gattermann reaction
- B. Perkin reaction
- C. Etard reaction
- D. Sandmeyer reaction

**Answer: D**

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135. Which of the following reagents can be used to convert benzene diazonium chloride into benzene?



**Answer: B**

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136. Which of the following compounds on treatment with  $NaNO_2/HCl$  and then coupled with phenol produces p-hydroxyazobenzene?

- A. Nitrobenzene
- B. Azobenzene
- C. Aniline
- D. Phenyl isocyanide

**Answer: C**



**View Text Solution**

**137.** Benzenediazonium chloride on reaction with phenol in weakly basic medium gives

- A. diphenyl ether
- B. p-hydroxyazobenzene
- C. chlorobenzene
- D. benzene

**Answer: B**



**View Text Solution**

**138.** Diazonium salts are the reaction products between nitrous acid and

- A. primary aliphatic amine
- B. N-alkyl substituted aromatic amines
- C. primary aromatic amines
- D. secondary amines.

**Answer: C**



**View Text Solution**

**139.** On warming an aqueous solution of benzene diazonium chloride, the product obtained is

- A. benzene
- B. aniline

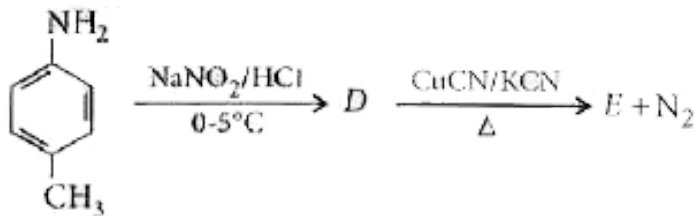
C. phenol

D. amide

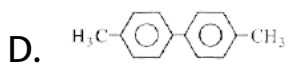
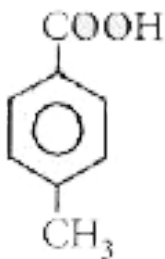
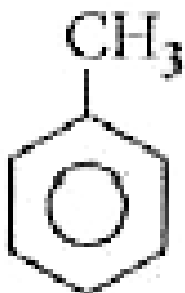
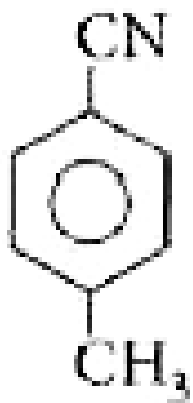
**Answer: C**

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**140.** In the reaction,



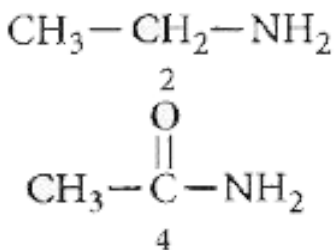
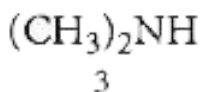
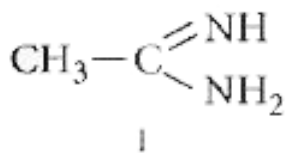
The product (E) is



**Answer: A**

Check Your Neet

1. The correct order of basicities of the following compounds is



A.  $2 > 1 > 3 > 4$

B.  $1 > 3 > 2 > 4$

C.  $3 > 1 > 2 > 4$

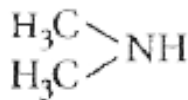
D.  $1 > 2 > 3 > 4$

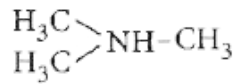
Answer: B

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2. The most reactive amine towards dilute hydrochloric acid is

A.  $CH_3NH_2$

B. 

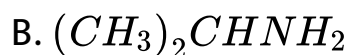
C. 



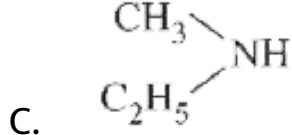
Answer: B

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3. A compound of molecular formula  $C_3H_9N$  when reacts with benzene sulphonyl chloride gives a product soluble in dilute NaOH solution. The compound should be







D. all of these

**Answer: B**

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4. The IUPAC name of a tertiary amine in which one methyl, one ethyl and one n-propyl group is attached to nitrogen is

A. N-methyl-N-ethylpropanamine

B. N-ethyl-N-methylaminopropane

C. N-ethyl-N-methylpropanamine

D. N-methyl-N-ethylaminopropane.

**Answer: C**

 [View Text Solution](#)

5. Match the reactions given in Column I with the statements given in Column II and select the correct answer.

Column I	Column II
P. Ammonolysis	1. Amine with lesser number of carbon atoms.
Q. Gabriel phthalimide synthesis	2. Detection test for primary amines.
R. Hoffmann bromamide reaction	3. Reaction of phthalimide with KOH and $R-X$ .
S. Carbylamine reaction	4. Reaction of alkylhalides with $NH_3$ .

A. P-3, Q-4, R-1, S-2

B. P-2, Q-4, R-3, S-1

C. P-1, Q-3, R-4, S-2

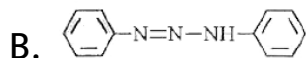
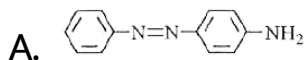
D. P-4, Q-3, R-1, S-2

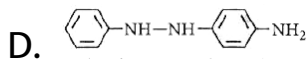
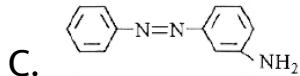
**Answer: D**



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6. When aniline is treated with benzene diazonium chloride at low temperature in weakly acidic medium the final product is





**Answer: A**

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7.  $C_7H_9N$  has how many isomeric forms that contain a benzene ring?

A. 4

B. 5

C. 6

D. 7

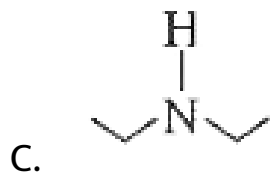
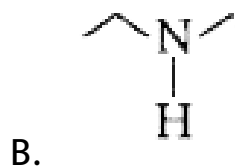
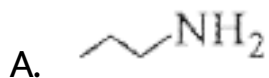
Answer: B

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8. In the reaction,



the final product 'B' is

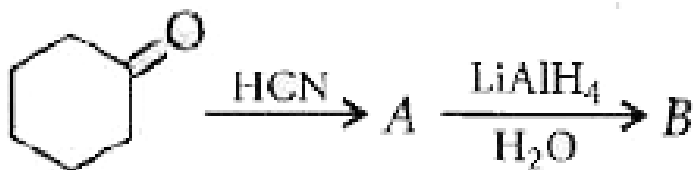




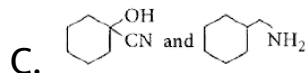
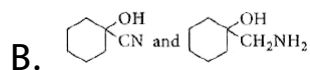
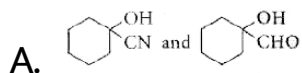
Answer: B

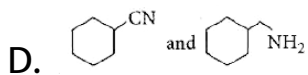
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9. In the given reaction,



A and B will be respectively





**Answer: B**

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10. Which of the following cannot be prepared by Sandmeyer's reaction?

A. Chlorobenzene

B. Bromobenzene

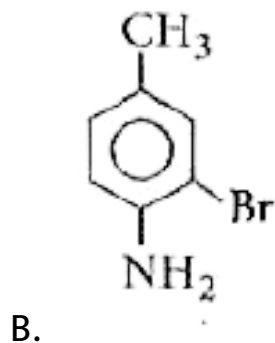
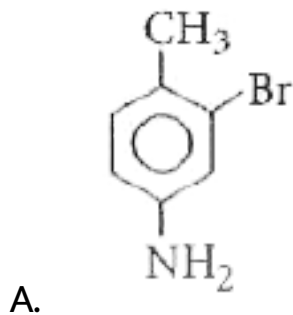
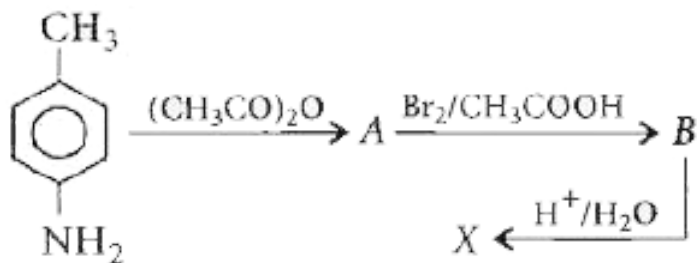
C. Cyanobenzene

D. Fluorobenzene

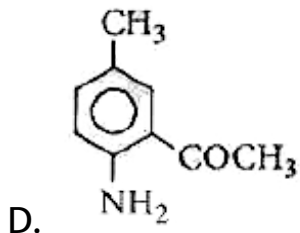
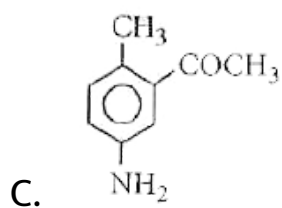
**Answer: D**



11. Identify X in the given reaction sequence.







**Answer: B**

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12. Aniline when treated with conc.  $HNO_3$  gives

A. p-phenylenediamine

B. m-nitroaniline

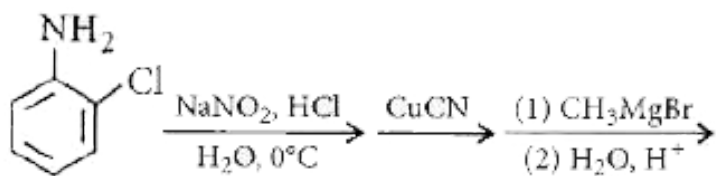
C. p-benzoquinone

D. nitrobenzene

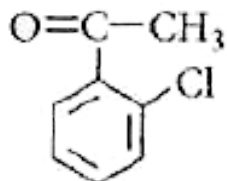
**Answer: B**

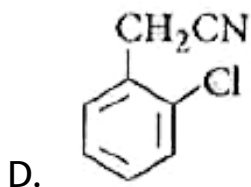
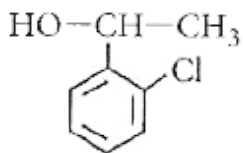
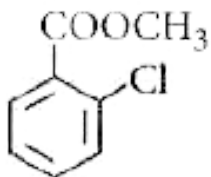
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13. What is the product of the following series of reactions?



A.





**Answer: A**



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**14.** A water insoluble N-containing organic compound that dissolves in cold dilute HCl is likely to be a/an

A. nitro compound

B. amine

C. amide

D. nitrile

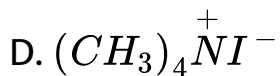
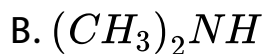
**Answer: B**



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15. A compound 'Z' reacts with three moles of  $CH_3I$  and gives a product which on hydrolysis gives  $[(CH_3)_4N]^+ OH^-$ . Compound 'Z' is

A.  $CH_3NH_2$

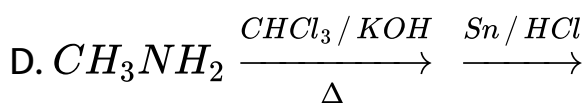
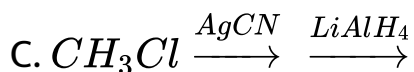
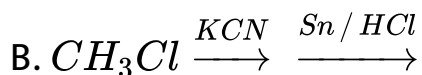
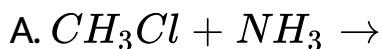


Answer: A



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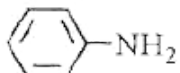
16. Which is the best method of preparing 2° amine?



Answer: D

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17. Match the amines given in Column I with the reactions they undergo given in Column II and select the correct answer.

Column I	Column II
P. 	1. Cope elimination
Q. $\text{CH}_3\text{NH}_2$	2. Azo dye formation
R. $(\text{CH}_3)_2\text{NH}$	3. Carbylamine reaction
S. $(\text{CH}_3\text{CH}_2)_3\text{N}$	4. Yellow oily liquid with $\text{HNO}_2$

A. P-3, Q-4, R-1, S-2

B. P-2, Q-4, R-3, S-1

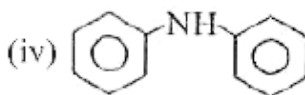
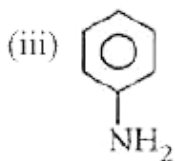
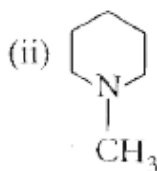
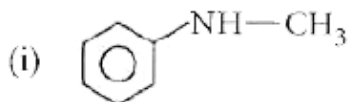
C. P-1, Q-3, R-4, S-2

D. P-2, Q-3, R-4, S-1

Answer: D

 [View Text Solution](#)

18. Classify the following amines as primary ( $1^\circ$ ), secondary ( $2^\circ$ ) and tertiary ( $3^\circ$ ).



A.  $2^\circ$ ,  $3^\circ$ ,  $3^\circ$ ,  $2^\circ$

B.  $2^\circ, 1^\circ, 1^\circ, 3^\circ$

C.  $1^\circ, 3^\circ, 1^\circ, 2^\circ$

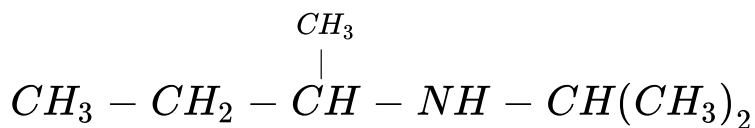
D.  $2^\circ, 3^\circ, 1^\circ, 2^\circ$

**Answer: D**



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**19.** The IUPAC name of



A. isobutyldimethanamine

B. isopropylbutan-2-amine

C. dimethyl butanamine



D. n-propylbutan-2-amine.

**Answer: B**

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20. Which among the following is correct based on increasing order of solubility in water?

A. n-Propylamine < Ethylamine < n-Butylamine

B. n-Butylamine < n-Butylalcohol < Ethylamine

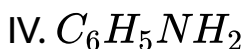
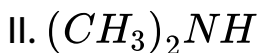
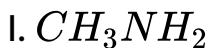
C. Triethylamine < Diethylamine < Ethylamine

D. Ethylamine < Diethylamine < Triethylamine.

**Answer: C**



21. Among the following



Which will give the positive carbylamine test?

A. I and II

B. I and IV

C. II and IV

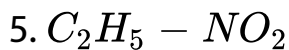
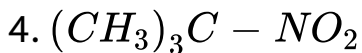
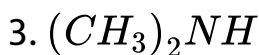
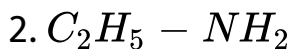
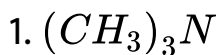
D. II and III

**Answer: B**



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**22.** Which of the following does not react with nitrous acid?



A. 2, 3

B. 4, 5

C. 1, 4

D. 2, 5

**Answer: C**



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23. An organic compound A having molecular formula  $C_2H_3N$  on reduction gave a compound B. On treatment with HONO, B gave ethyl alcohol and on warming with  $CHCl_3$  and alcoholic KOH, B gives an offensive smell.

The compound A is

A. acetamide

B. methyl cyanide

C. ethylamine

D. ethyl cyanide

**Answer: B**



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**24.** Which one is not the reaction of diazonium salt?

A. Sandmeyer reaction

B. Gattermann reaction

C. Balz-Schiemann reaction

D. Claisen reaction

**Answer: D**

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25. The correct increasing order of their  $pK_b$  values is

A. aniline < N-methylaniline < cyclohexylamine

B. cyclohexylamine < N-methylaniline < aniline

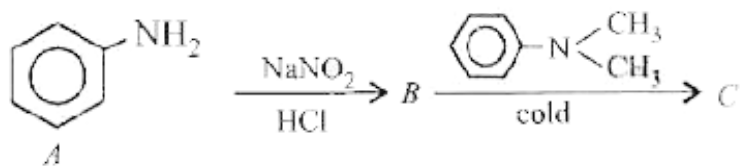
C. cyclohexylamine < aniline < N-methylaniline

D. N-methylaniline < cyclohexylamine < aniline.

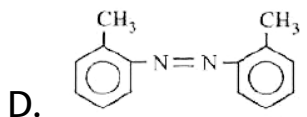
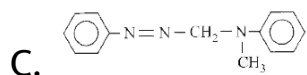
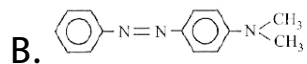
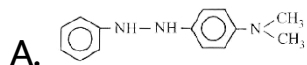
**Answer: B**

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1. In a reaction of aniline a coloured product C was obtained.



The structure of C would be



**Answer: B**



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

- A. Alkyl amines are stronger bases than aryl amines.
- B. Alkyl amines react with nitrous acid to produce alcohols.
- C. Aryl amines react with nitrous acid to produce phenols.
- D. Alkyl amines are stronger bases than ammonia.

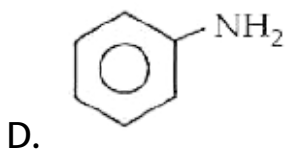
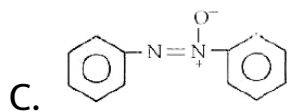
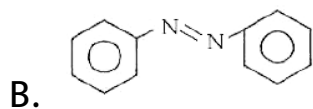
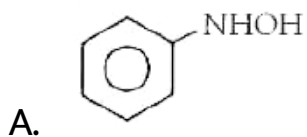
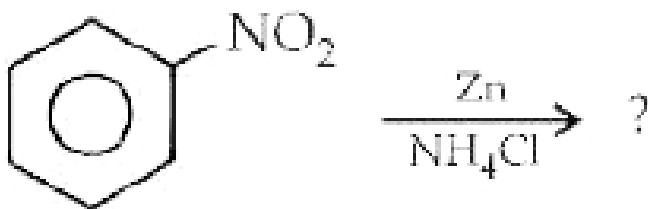
**Answer: C**



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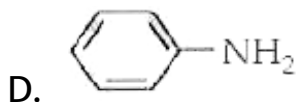
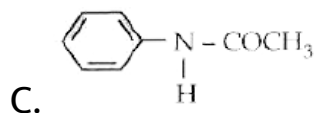
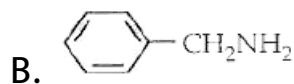
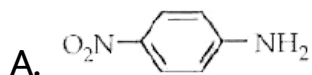
3. What is the product obtained in the following reaction?



Answer: A

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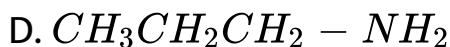
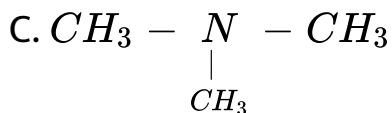
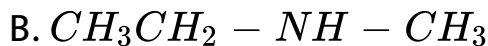
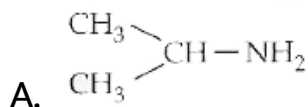
4. Which of the following compounds is most basic?



Answer: B

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5. An organic compound ( $C_3H_9N$ ) (A), when treated with nitrous acid, gave an alcohol and  $N_2$  gas was evolved. (A) on warming with  $CHCl_3$  and caustic potash gave (C) which on reduction gave isopropylmethylamine. Predict the structure of (A).



**Answer: A**



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6. Nitrobenzene on reaction with conc.  $HNO_3/H_2SO_4$  at  $80 - 100^\circ C$  forms which one of the following products?

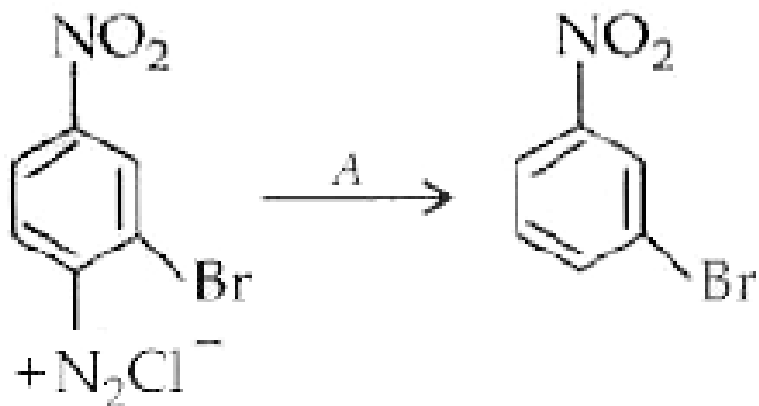
- A. 1, 4-Dinitrobenzene
- B. 1, 2, 4-Trinitrobenzene
- C. 1, 2-Dinitrobenzene
- D. 1,3-Dinitrobenzene

**Answer: D**



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7. In the reaction,



A is

A.  $H_3PO_2$  and  $H_2O$

B.  $H^+ / H_2O$

C.  $HgSO_4 / H_2SO_4$

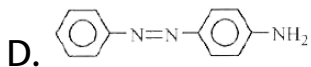
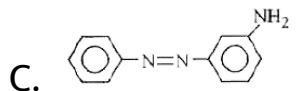
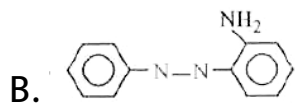
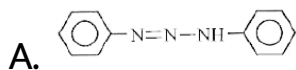
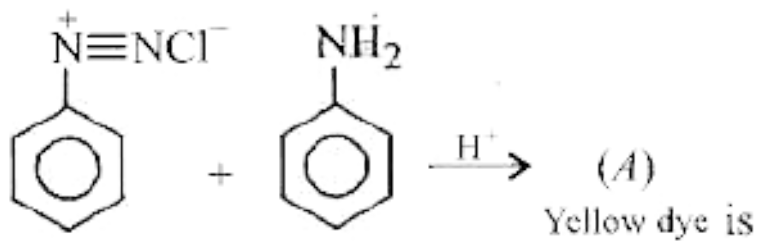
D.  $Cu_2Cl_2$

**Answer: A**



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8. In the following reaction, the product (A)

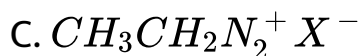
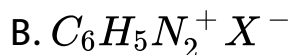
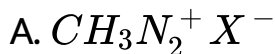


Answer: D



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



**Answer: B**



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

A. azobenzene

B. aniline

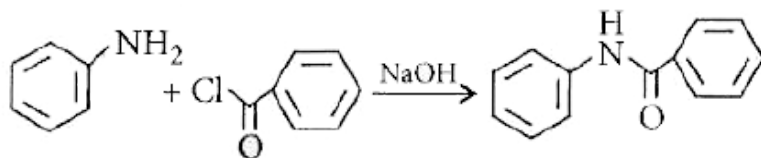
C. p-aminophenol

D. azoxybenzene

**Answer: C**

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11. The following reaction,



is known by the name



- A. Perkin's reaction
- B. Acetylation reaction
- C. Schotten-Baumann reaction
- D. Friedel-Crafts reaction.

**Answer: C**



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**12. Method by which aniline cannot be prepared is**

- A. degradation of benzamide with bromine in alkaline solution
- B. reduction of nitrobenzene with  $H_2 / Pd$  in ethanol

C. potassium salt of phthalimide treated with chlorobenzene followed by hydrolysis with aqueous NaOH solution

D. hydrolysis of phenylisocyanide with acidic solution.

**Answer: C**

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**13.** The number of structural isomers possible from the molecular formula  $C_3H_9N$  is

A. 5

B. 2

C. 3

D. 4

**Answer: D**



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**14.** The correct statement regarding the basicity of arylamines is

A. arylamines are generally more basic than alkylamines because of aryl group

B. arylamines are generally more basic than alkylamines, because the nitrogen atom in

arylamines is  $sp$ -hybridised

C. arylamines are generally less basic than alkylamines because the nitrogen lone-pair electrons are delocalised by interaction with the aromatic ring  $\pi$ -electron system

D. arylamines are generally more basic than alkylamines because the nitrogen lone-pair electrons are not delocalised by interaction with the aromatic ring  $\pi$ -electron system.

**Answer: C**

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

A. carboxylic acid

B. aromatic acid

C. Schiff's base

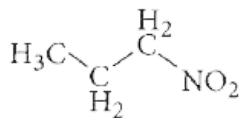
D. ketone

**Answer: C**

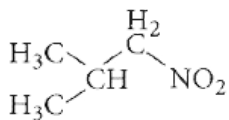


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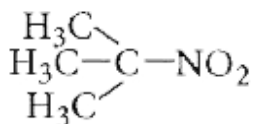
16. Which one of the following nitro-compounds does not react with nitrous acid?



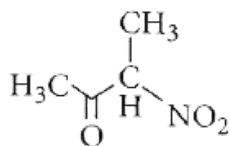
A.



B.



C.



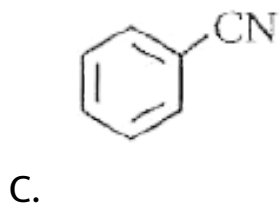
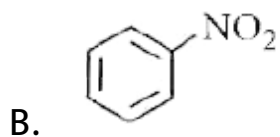
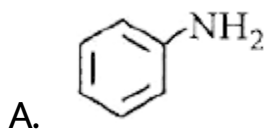
D.

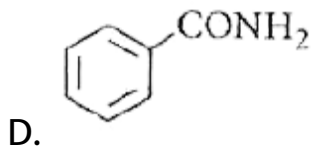
**Answer: C**



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17. A given nitrogen-containing aromatic compound 'A' reacts with Sn/HCl, followed by  $HNO_2$  to give an unstable compound 'B'. 'B', on treatment with phenol, forms a beautiful coloured compound 'C' with the molecular formula  $C_{12}H_{10}N_2O$ . The structure of compound 'A' is

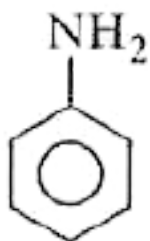




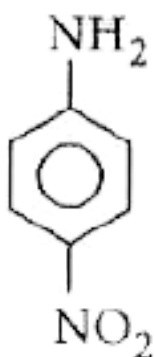
**Answer: B**

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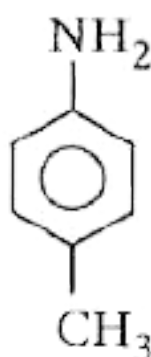
18. The correct increasing order of basic strength for the following compounds is



(I)



(II)



(III)



A.  $III < I < II$

B.  $III < II < I$

C.  $II < I < III$

D.  $II < III < I$

**Answer: C**



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**19.** Which of the following reactions is appropriate for converting acetamide to methanamine?

A. Hoffmann hypobromamide reaction

B. Stephen's reaction

C. Gabriel phthalimide synthesis

D. Carbylamine reaction

**Answer: A**



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20. Nitration of aniline in strong acidic medium also gives m-nitroaniline because

A. inspite of substituents nitro group always goes to only m-position

B. in electrophilic substitution reactions amino group is meta directive

C. in absence of substituents nitro group always goes to m-position

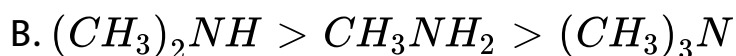
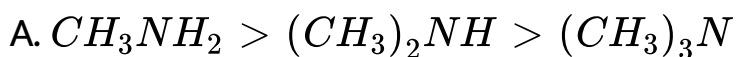
D. in acidic (strong) medium aniline is present as anilinium ion.

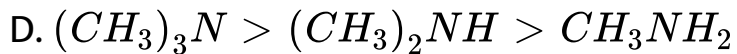
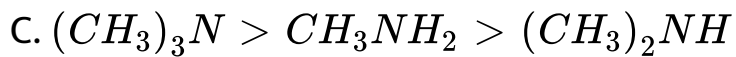
**Answer: D**



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21. The correct order of the basic strength of methyl substituted amines in aqueous solution is





**Answer: B**



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