



CHEMISTRY

BOOKS - MTG CHEMISTRY (ENGLISH)

AMINES

Mcqs

1. Nitrogen atom of amino group is __ hybridised.

A. sp

B. sp^2

C. sp^3

D. sp^d

Answer:

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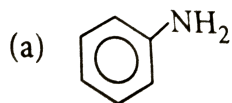
2. The shape of $(CH_3)_3N$ is pyramidal because

- A. nitrogen forms three sp^3 hybridised sigma bonds with carbon atoms of methyl groups and there is one non-bonding electron pair.
- B. nitrogen forms three sp^2 hybridised sigma bonds with carbon atoms of methyl groups and fourth orbital forms pi bond
- C. nitrogen has five valencies which are arranged in pyramidal shape.
- D. the unpaired electron present on nitrogen is delocalised.

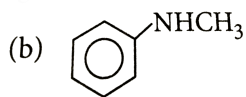
Answer:

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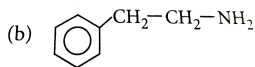
3. Which of the following is aromatic amine?



A.



B.



C.

D. Both (a) and (b)

Answer:

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4. Identify the incorrect IUPAC name.

A. $(CH_3CH_2)_2NCH_3$ – *N*-Ethyl-*N*-methylethan-amine

B. $(CH_3)_3CNH_2$ – 2-Methylpropan-2-amine

C. $CH_3NHC(CH_3)_2$ – *N*-Methylpropan-2-amine

D. $(CH_3)_2CHNH_2$ – 2-Dimethyl-*N*-propanamine

Answer:



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5. When excess of ethyl iodide is treated with ammonia, the product is

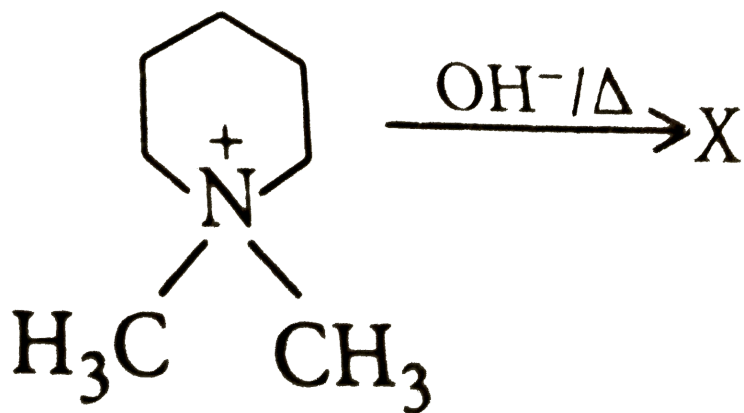
- A. ethylamine
- B. diethylamine
- C. triethylamine
- D. tetraethylammonium iodide.

Answer:



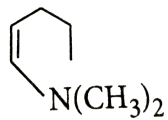
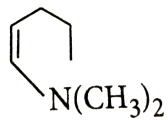
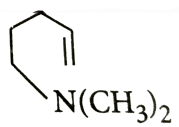
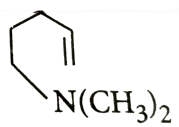
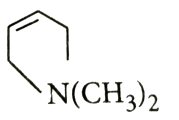
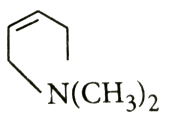


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6. In the following reaction



The organic product X has the structure

- (a) 
- A. 
- (b) 
- B. 
- (c) 
- C. 
- (d) 
- D. 

Answer:



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7. Secondary amines could be prepared by

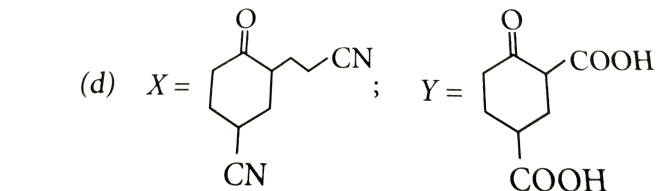
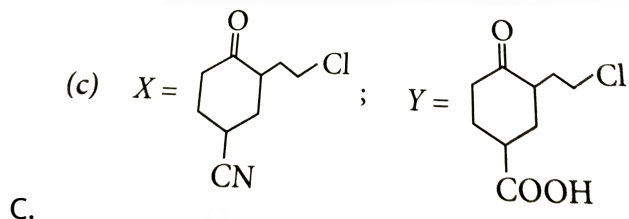
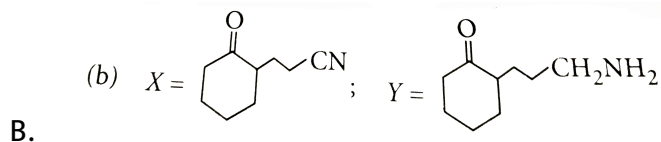
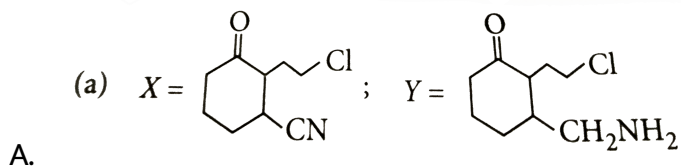
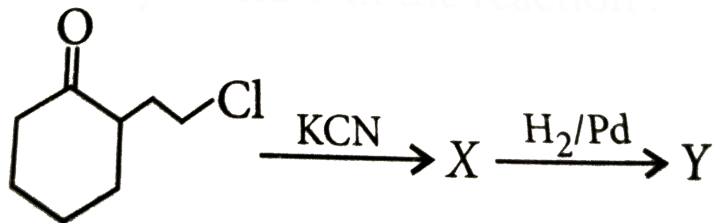
- A. reduction of nitro compounds
- B. reduction of amides
- C. reduction of isonitriles
- D. reduction of isonitriles

Answer: C::D



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8. Identify X and Y in the reaction:

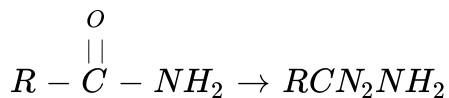


Answer:



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9. Which one of the following reducing agents is likely to be most effective in bringing about the following change?



A. $H_2 - Ni$

B. $NaBH_4$

C. $LiAlH_4$

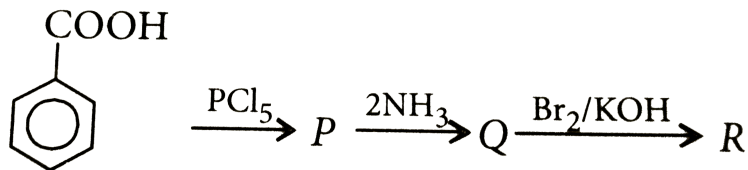
D. Na-Alcohol

Answer:



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10. What is the end product in the following sequence of reaction?



- A. Aniline
- B. Phenol
- C. Benzene
- D. Benzenediazonium chloride

Answer:

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11. Benzoic acid is treated with SOCl_2 and the product (X) formed is reacted with ammonia to give (Y). (Y) on reaction with Br_2 and KOH gives (Z). (Z) in the reaction is

- A. aniline
- B. chlorobenzene
- C. benzamide
- D. benzoyl chloride

Answer:

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12. The most convenient method to prepare an amine containing one carbon atom less is

- A. Gabriel phthalimide synthesis
- B. reductive amination of aldehydes
- C. Hofmann bromamide reaction
- D. reduction of isonitriles

Answer:



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13. Amine that cannot be prepared by Gabrielphthimide synthesis is

- A. aniline
- B. benzyl amine
- C. methyl amine
- D. iso-butylamine

Answer:



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14. Which of the following amides will give ethylamine on reaction with sodium hypobromide?

- A. Butanamide
- B. Propanamide

C. Acetamide

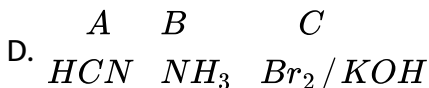
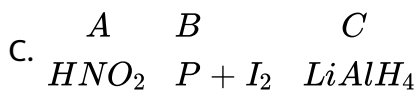
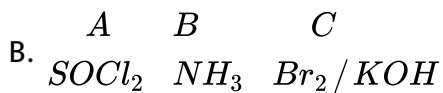
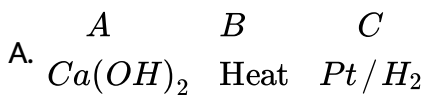
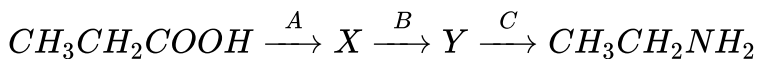
D. Benzamide

Answer:

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15. Identify the correct pathway to convert propanoic acid to ethylamine.

The reagent represented by A, B and C are



Answer:

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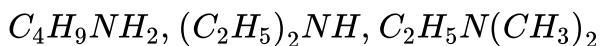
16. Tertiary amines have lowest boiling points amongst isomeric amines because

- A. they have highest molecular mass
- B. they do not form hydrogen bonds
- C. they are more polar in nature
- D. they are most basic in nature.

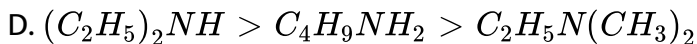
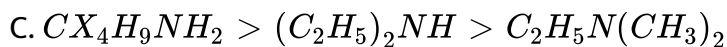
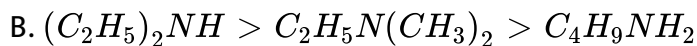
Answer:

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17. The correct order of boiling points of the following isomeric amines is



- A. $C_2H_5N(CH_3)_2 > (C_2H_5)_2NH > C_4H_9NH_2$



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18. The decreasing order of boiling points of ethyldimethylamine, n-butylamine and diethylamine is n-Butylamine, Diethylamine, Ethyldimethylamine. This trend of boiling point can be explained as

- A. boiling point increases with increase in molecular mass
- B. tertiary amines have highest boiling point due to highest basicity
- C. intermolecular hydrogen bonding is maximum in primary amines and absent in tertiary amines

D. intramolecular hydrogen bonding is present in tertiary amines.

Answer:

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19. Choose the correct statements from the following:

A. Methyl amine is less soluble than propyl amine.

B. Methyl amine is solid with fishy odour.

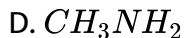
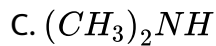
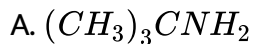
C. Aniline gets coloured on storage.

D. Amines are more polar than alcohols.

Answer:

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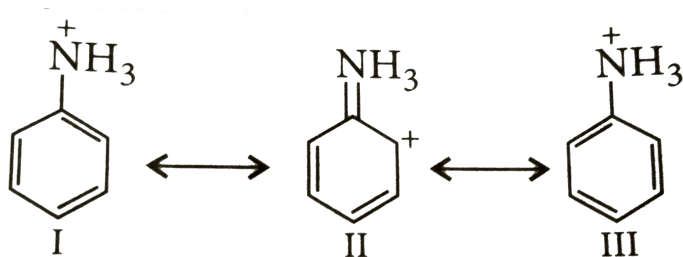
20. Which of the following has highest pK_b value?



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21. Canonical structures of anilinium ion obtained by accepting a proton are given below. Choose the correct statements.



A. Anilinium ion has two stable canonical structures I and III.

B. II is not an acceptable structure because carbonium ion is less stable.

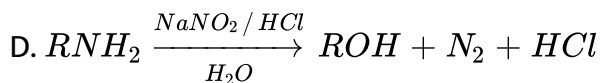
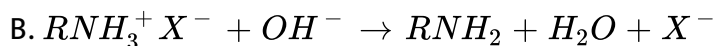
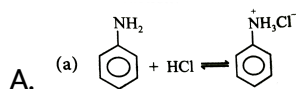
C. Only I and III are acceptable aromatic canonical structures since II is non-aromatic.

D. Anilinium ion has three stable canonical structures I,II and III.

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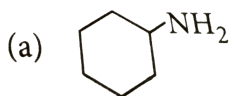
22. Which of the following does not represent the correct reaction?



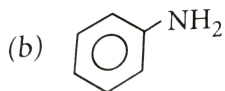
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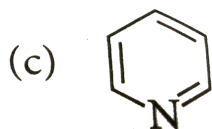
23. Most basic species amongst the following is



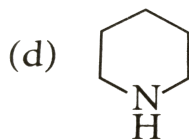
A.



B.



C.

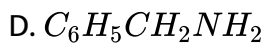
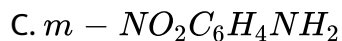
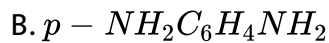
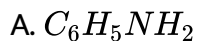


D.

Answer:

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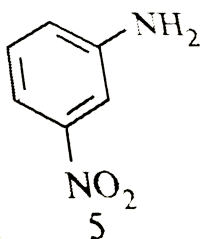
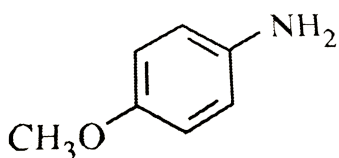
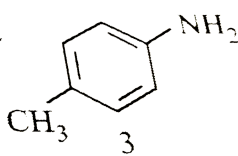
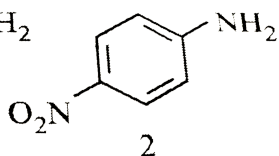
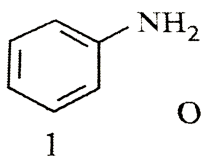
24. The strongest base among the following is



Answer:

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25. The correct order of increasing basic nature of the following bases is



A. 2lt5lt1lt3lt4

B. 5lt2lt1lt3lt4

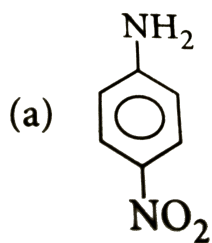
C. 2lt5lt1lt4lt3

D. 5lt2lt1lt4lt3

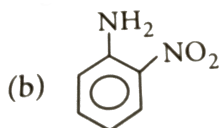
Answer:

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26. The most basic amine among the following is

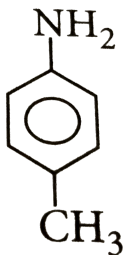


A.



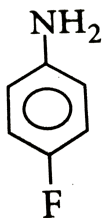
B.

(c)



C.

(d)



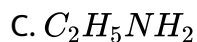
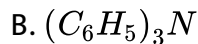
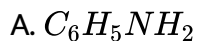
D.

Answer:



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27. The amines are basic in nature, hence they form salts with hydrochloric acid. Which of the following will be insoluble in dil. HCl?



D. CH_3NHCH_3

Answer:

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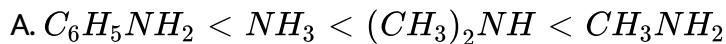
28. Basic strength of different alkyl amines depends upon

- A. +I effect
- B. steric effect
- C. solvation effect
- D. All of these

Answer:

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29. Arrange the following compounds in increasing order of basicity:



Answer:



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30. Cyclohexylamine is stronger base than aniline because

A. in aniline electron pair is involved in conjugation

B. in cyclohexylamine electron pair is involved in conjugation

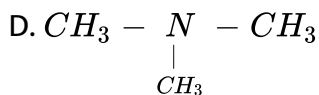
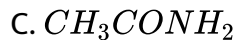
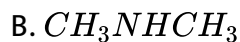
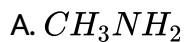
C. in aniline- NH_2 group is protonated

D. in cyclohexylamine nitrogen has a negative charge.

Answer:

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31. Which of the following is amphoteric in nature?



Answer:

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32. Which of the following amines will give carbylamine reaction?

A. $(C_2H_5)_3N$ Only

B. $(C_2H_5)_2NH$ only

C. $C_2H_5NH_2$ only

D. $C_3H_7NHC_2H_5$ only

Answer:

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33. Which of the following species are involved in the carbylamine test?

(i) RNC (ii) $CHCl_3$

(iii) $COCl_2$ (iv) $NaNO_2 + HCl$

A. (i) and (iv) only

B. (i) and (ii) only

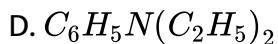
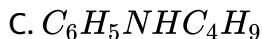
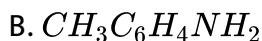
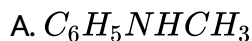
C. (ii) and (iv) only

D. (ii) and (iii) only

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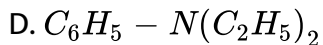
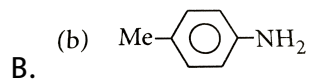
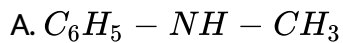
34. Which of the following will form isocyanide on reaction with $CHCl_3$ and KOH?



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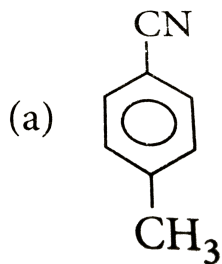
35. Which amine amongst the following will answer positively the carbylamine test (i.e, heating with $CHCl_3$ and KOH) ?



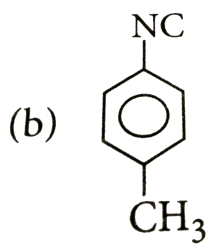
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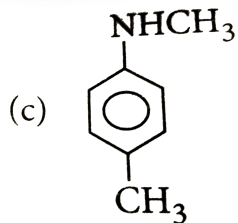
36. When p-toluidine reacts with chloroform and alcoholic KOH, then the product is



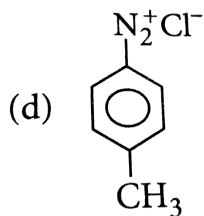
A.



B.



C.



D.

Answer:

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37. Among the following

I. CH_3NH_2 II. $(CH_3)_2NH$

III. $(CH_3)_3N$ IV. $C_6H_5NH_2$

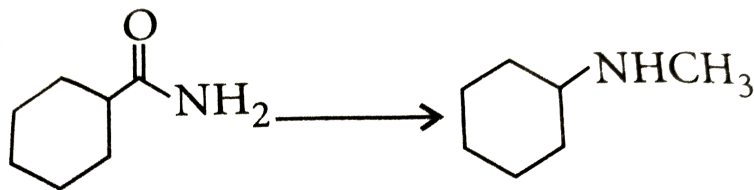
Which will give the positive carbylamine test?

- A. I and II only
- B. I and IV only
- C. II and IV only
- D. II and III only

Answer:

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38. Which of the following methods can be used to carry out the following conversions?



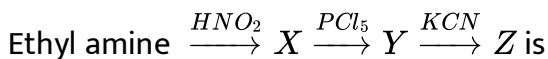
- A. (i) Br_2/KOH (ii) $CHCl_3/KOH$ (iii) H_2/Pd

- B. (i) KCN (ii) H_2/Pd (iii) Sn/HCl
- C. (i) $CuCN$ (ii) H_2O/H^+ (iii) H_2/Pd
- D. (i) HNO_3/H_2SO_4 (ii) $(CH_3CO)_2O$ (iii) Fe/HCl

Answer:

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39. The end product Z of the reaction:



- A. propanenitrile
- B. triethylamine
- C. diethylamine
- D. propylamine

Answer:

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40. Primary amines on reaction with nitrous acid form _____. For the test of primary amines _____ reaction is used. Primary amines are _____ basic than ammonia.

- A. Carboxylic acid, Hofmann, less
- B. secondary alcohols, carbylamine, less
- C. primary alcohols, carbylamine, more
- D. hydroxylamines, carbylamine, less

Answer:



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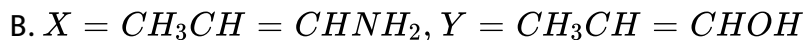
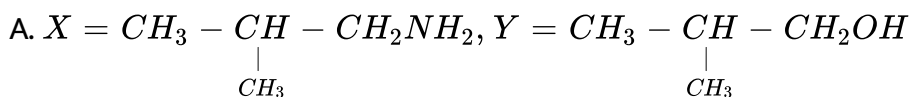
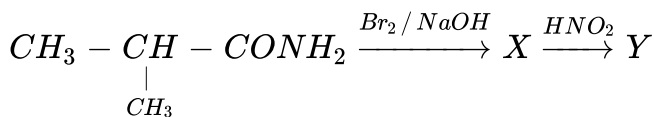
41. which of the following tests is suitable to differentiate between aniline and benzylamine?

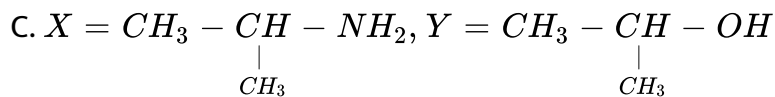
- A. Aniline gives dye test on diazotisation and reaction with β -naphthol while benzylamine give alcohol.
- B. Benzylamine gives green dye with β -naphthol after diazotisation while aniline gives orange dye.
- C. Aniline gives carbylamine reaction while benzylamine does not.
- D. Benzylamine gives carbylamine reaction while aniline does not.

Answer:

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42. Identify X and Y in the reaction.

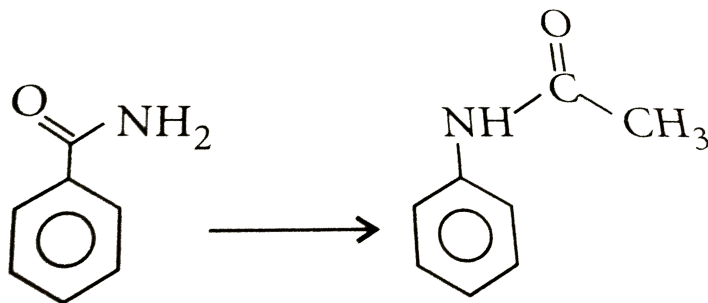




Answer:

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43. The reagent required to convert



- A. $\text{KOH} / \text{Br}_2, \text{LiAlH}_4$
- B. $\text{KOH} / \text{Br}_2, \text{CH}_3\text{COCl}$
- C. $\text{HNO}_2, (\text{CH}_3\text{CO})_2\text{O}$
- D. $\text{KOH} / \text{Br}_2, \text{CH}_3\text{OH} / \text{Na}$

Answer:

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44. Which of the following statements is not true?

- A. $(CH_3)_2NH$ is a stronger base than $(CH_3)_3N$
- B. Secondary amines show carbylamine reaction.
- C. Nitrogen gas is evolved when ethylamine is treated with nitrous acid.
- D. Primary amines can show carbylamine reaction.

Answer:

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45. An organic compound (X) was treated with sodium nitrite and HCl in ice cold condition. Bubbles of nitrogen gas were seen coming out. The compound (X) may be

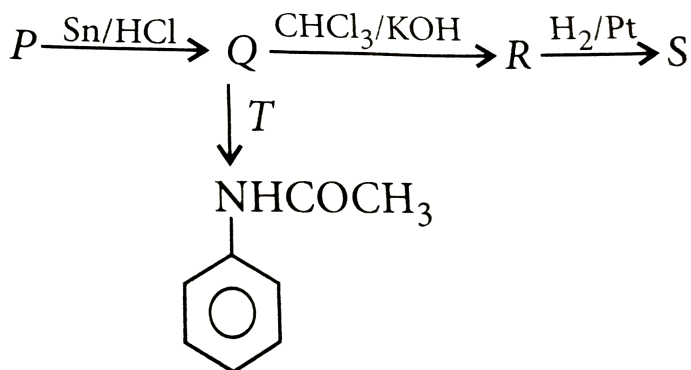
- A. a secondary aliphatic amine
- B. a primary aromatic amine
- C. a primary aliphatic amine
- D. a tertiary amine.

Answer:



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46. Identify P,Q,R,S,T in the given sequence of reaction.



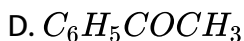
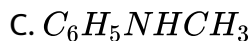
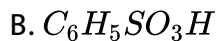
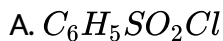
- A. P Q R S T
 $C_6H_5NO_2$ C_6H_5CN C_6H_5NC $C_6H_5NH_2$ CH_3COOH
- B. P Q R S T
 C_6H_6 $C_6H_5NO_2$ C_6H_5NC $C_6H_5NH_2$ CH_3COCl
- C. P Q R S T
 $C_6H_5NH_2$ $C_6H_5CH_3$ $C_6H_5NH_2$ C_6H_5CN CH_3Cl
- D. P Q R S T
 $C_6H_5NO_2$ $C_6H_5NH_2$ C_6H_5NC $C_6H_5NHCH_3$ $(CH_3CO)_2O$

Answer:



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47. Which of the following is used as Hinsberg's reagent?



Answer:

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48. The reaction of benzenesulphonyl chloride with ethylamine yields

A. N-ethylbenzenesulphonamide, insoluble in alkali

B. N,N-diethylbenzenesulphonamide, soluble in alkali

C. N,N-diethylbenzenesulphonamide, insoluble in alkali

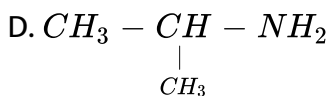
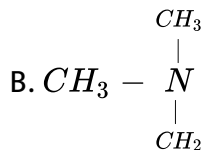
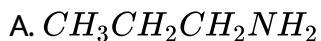
D. N-ethylbenzenessulphonamide, soluble in alkali

Answer:



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49. A compound (X) with molecular formula C_3H_9N reacts with $C_6H_5SO_2Cl$ to give a solid which is insoluble in alkali. (X) is



Answer:



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50. Primary, secondary and tertiary amines may be separated by using

- A. iodoform
- B. diethyloxalate
- C. benzenesulphonyl chloride
- D. acetyl chloride

Answer:

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51. The Hinsberg's test of a compound, $C_5H_{14}N_2$ produces a solid that is insoluble in 10% aq. NaOH. This solid derivative dissolves in 10% aqueous sulphuric acid. Which of the following would best describe these facts?

- A. $NH_2CH_2CH_2N(CH_3)_2$
- B. $(CH_3)_2NCH_2CH_2NHCH_3$
- C. $NH_2CH_2C(CH_3)_2CH_2NH_2$



Answer:

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52. Which of the following reactions is not correctly matched?

- A. Reaction used to convert amide into primary amine with one carbon atom less - Hofmann bromide reaction
- B. Reaction used to convert primary amines into isocyanides - Carbylamine reaction
- C. Reaction used to distinguish primary secondary and tertiary amines - Hinsberg's reaction
- D. Preparation of primary phthalimide - Victor Meyer's synthesis

Answer:

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53. Electrophilic substitution of aniline with bromine water at room temperature gives

- A. 2-bromoaniline
- B. 3-bromoaniline
- C. 2,4,6-tribromoaniline
- D. 3,5,6-tribromoaniline

Answer:



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54. From nitration of aniline, which of the following steps is followed?

- A. Direct nitration using nitrating mixture (conc. HNO_3 +conc. H_2SO_4) followed by oxidation.

B. Using fuming HNO_3 carrying out reaction at 273K followed by hydrolysis.

C. Using $NaNO_2$ and HCl followed by reaction with conc. HNO_3 followed by hydrolysis.

D. Acetylation followed by nitration and hydrolysis.

Answer:

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55. Amino group is o, p-directing for electrophilic substitution reaction.

But, on nitration the major product is m-nitroaniline because

A. aniline gets protonated with strong acids to give anilinium ion which is m-directing

B. nitration requires nitric acid which oxidises NH_2 to $-NO_2$ group.

C. electrophilic NO_2^+ is a m-directing group

D. benzene ring exerts + I effect and deactivates the ring.

Answer:

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56. How aniline can be converted by efficient procedure to mononitro derivative?

A. nitration with conc. HNO_3 + conc. H_2SO_4

B. aniline \rightarrow dimethylaniline \rightarrow p-nitrosodimethyl

aniline \rightarrow p-nitromethyl aniline

C. aniline \rightarrow acetanilide \rightarrow o- and p- nitroacetanilide \rightarrow

hydrolysed

D. aniline \rightarrow chlorobenzene via diazonium salt nitrated to give o-

and p- chloronitro benzene \rightarrow heated with NH_3

Answer:



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57. Anilinium hydrogensulphate on heating with sulphuric acid at 453-473 K produces

- A. sulphanilic acid
- B. benzenesulphonic acid
- C. aniline
- D. anthranilic acid

Answer:



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58. When aniline is heated with conc. H_2SO_4 at 455-475 K, it forms

- A. aniline hydrogensulphate
- B. sulphanilic acid

C. amino benzene sulphonic acid

D. benzenesulphonic acid

Answer:

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59. Benzenediazonium chloride cannot be stored and is used immediately after its preparation because

A. it slowly evaporates on storage

B. it is very unstable and dissociates to give nitrogen

C. it gets oxidised in air hence cannot be stored

D. it reacts with all the containers in which it is stored.

Answer:

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60. N, N-Dimethylaniline is treated with aqueous $NaNO_2/HCl$, the product formed is

- A. p-(N, N-dimethylamino) benzenediazonium chloride.
- B. p-(N, N-dimethylamino) phenol
- C. p-nitroso-N,N-dimethylaniline
- D. p-nitro-N,N-dimethylaniline

Answer:

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61. During preparation of arenediazonium salts, the excess of nitrous acid, if any, is destroyed by adding

- A. aq.NaOH
- B. aq. Na_2CO_3
- C. aq. NH_2CONH_2

D. aq. KI

Answer:

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62. Which of the following is not a property of diazonium salts?

A. Diazonium salts are colourless crystalline solids.

B. Being ionic in nature they are soluble in water.

C. Most of these salts explode when dried.

D. The aqueous solutions of these salts are poor conductors of electricity.

Answer:

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63. Which of the following options is correct regarding the property of benzenediazonium fluoroborate?

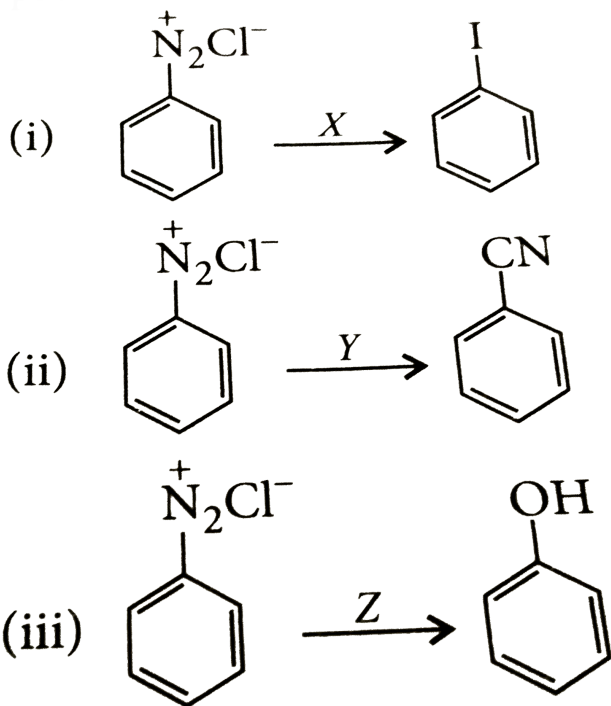
- A. It is water soluble at room temperature
- B. It is water insoluble and stable at room temperature.
- C. It is a coloured solid.
- D. None of these.

Answer:



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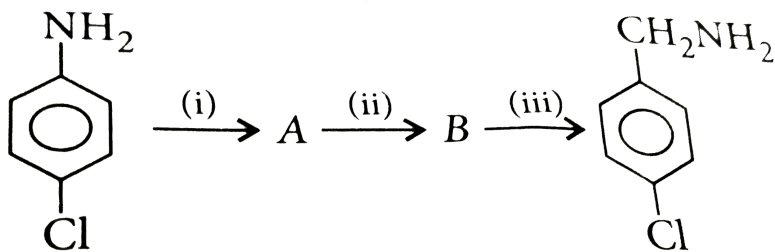
64. Identify the reagents X,Y and Z for the following products.



- A. X Y Z
 I_2, warm KCN, warm $NaOH, \text{warm}$
- B. X Y Z
 CuI $NaCN$ KOH
- C. X Y Z
 KI, warm $CuCN$ H_2O, warm
- D. X Y Z
 AgI, warm $AgCN, \text{warm}$ KOH, boil

Answer:

65. Mark the correct route of the conversion of p-chloroaniline to p-chlorobenzylamine .



- A. (i) Alkylation (ii) KCN (iii) H_2/Pt
- B. (i) Diazotisation (ii) $CuCN$ (iii) H_2/Pt
- C. (i) Oxidation (ii) H_2/Pt (iii) Hydrolysis
- D. (i) Diazotisation (ii) H_2O/H^+ (iii) Sn/HCl

Answer:

66. Which of the following is correct method to convert p-toluidine to p-toluic acid?

- A. Diazotisation, CuCN , H_2 / Pd
- B. $\text{CHCl}_3 / \text{NaOH}$, KCN , Sn / HCl
- C. Diazotisation, CuCN/KCN , $\text{H}_2\text{O} / \text{H}^+$
- D. Diazotisation, NaCN , NaOH

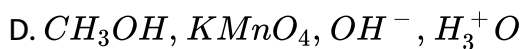
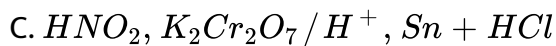
Answer:



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67. Aniline can be converted into bezyl amine by which of the following processes in sequence?

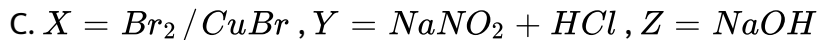
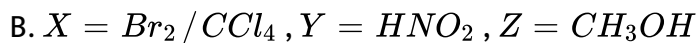
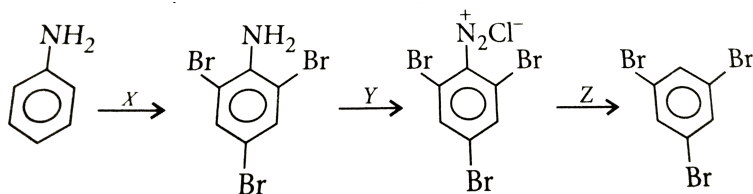
- A. $\text{NaNO}_2 + \text{HCl}$, CuCN , H_2 / Ni
- B. $\text{Br}_2 / \text{Cl}_4$, KCN , LiAlH_4



Answer:

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68. Identify X, Y and Z in the given sequence of reactions



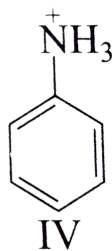
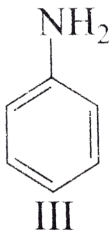
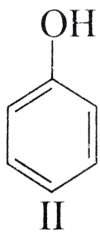
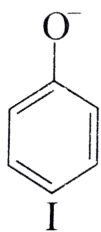
D.



Answer:

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



A. IV|III|II|I

B. IV|II|III|I

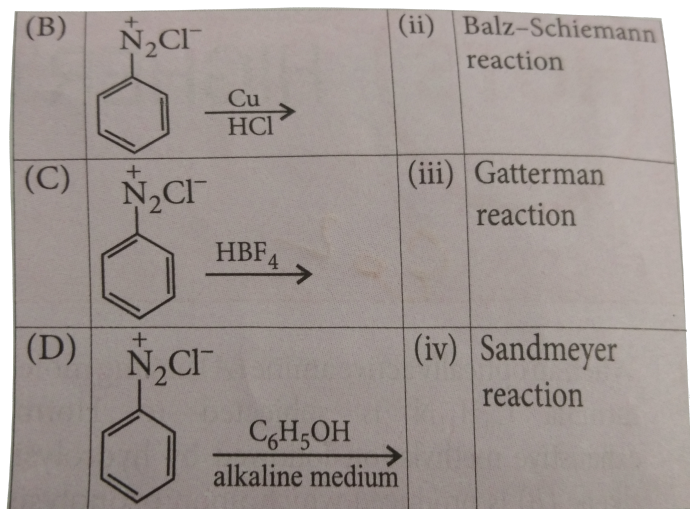
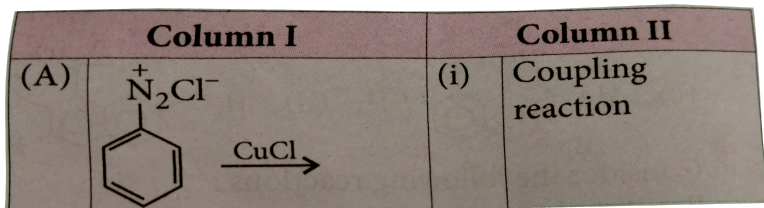
C. III|IV|II|I

D. II|III|II|IV

Answer:

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70. Match the column I with column II and mark the appropriate choice.



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

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

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

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

Answer:



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71. The coupling reaction of aryldiazonium chloride with aniline are carried out in

- A. strongly acidic medium
- B. strongly basic medium
- C. mild basic medium
- D. mild acidic medium

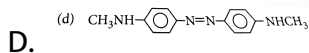
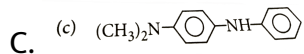
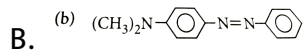
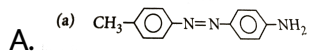
Answer:



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72. Aniline when diazotised in cold and then treated N, N-dimethylaniline gives a coloured product. The structure of this product

is



Answer:



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Classification

1. C_3H_9N cannot represent

A. 1° amine

B. 2° amine

C. 3° amine

D. quaternary ammonium salt.

Answer:

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

A. tert-Butylamine

B. sec-Butylamine

C. Isobutylamine

D. Dimethylamine

Answer:

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1. IUPAC name of the compound $(C_2H_5)_2NCH_3$ is

- A. 2,2-diethylmethanamine
- B. N,N-diethylmethanamine
- C. N-ethyl-N-methylethanamine
- D. N-methylbutanamine

Answer:



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2. Reduction of aromatic nitro compounds using Fe and HCl gives...

- A. Aromatic primary amines
- B. aromatic secondary amines
- C. aromatic tertiary amines
- D. aromatic amides.

Answer:

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3. Secondary amines could be prepared by

A. reduction of nitro compounds

B. reduction of amides

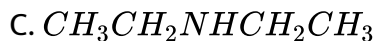
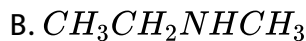
C. reduction of isonitriles

D. reduction of isonitriles

Answer: C::D

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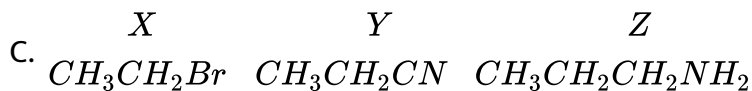
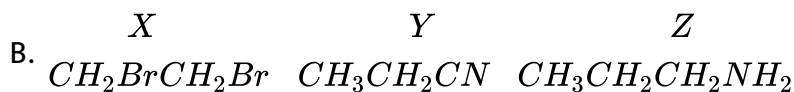
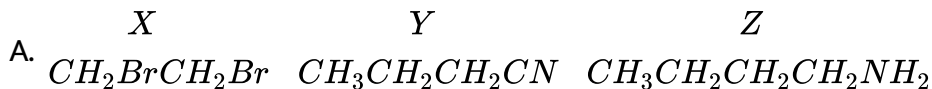
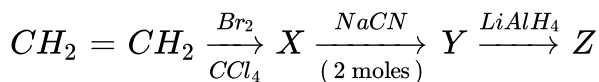
4. Reduction of CH_3CH_2NC with hydrogen in presence of Ni or Pt as catalyst gives



Answer:

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5. Identify X, Y and Z in the given reaction:



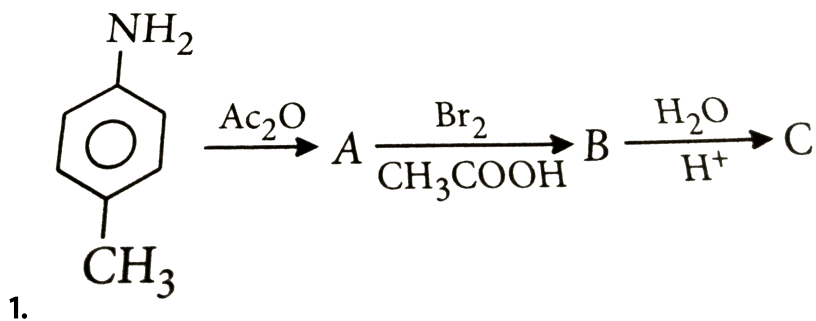
D.



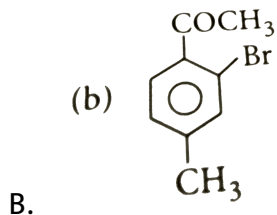
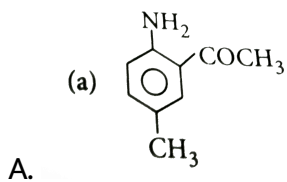
Answer:

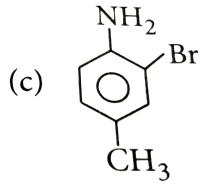
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Chemical Reactions

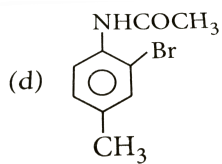


Product would be





C.



D.

Answer:

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2. Primary amines react with benzoyl chloride to give

- A. Benzamides
- B. ethanamides
- C. imides
- D. imines

Answer:



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3. what is obtained when benzoyl chloride reacts with aniline in the presence of sodium hydroxide?

A. Benzoic acid

B. Benzanilide

C. Acetanilide

D. Azobenzene

Answer:



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4. Acetylation of a secondary amine in alkaline medium yields

A. N,N-dialkylacetamide

B. N,N-dialkylamine

C. N,N-dialkylamide

D. acetyl dialkylamine

Answer:

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5. Primary and secondary amines react with acid chloride or acid anhydride to form

A. tertiaryammonium salts

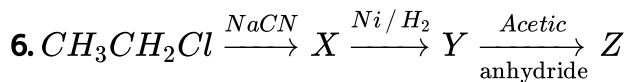
B. substituted amides

C. diazonium salts

D. nitro compounds

Answer:

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Z in the above reaction sequence is .

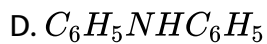
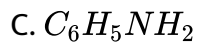
- A. $CH_3CH_2CH_2NHCOCH_3$
- B. $CH_3CH_2CH_2NH_2$
- C. $CH_3CH_2CH_2CONHCH_3$
- D. $CH_3CH_2CH_2CONHCOCH_3$

Answer:

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7. Which of the following compounds cannot be identified by carbyl amine test ?

- A. $CH_3CH_2NH_2$
- B. $(CH_3)_2CHNH_2$



Answer:

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8. The action of nitrous acid on an aliphatic primary amine gives

A. secondary amine

B. nitroalkane

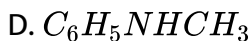
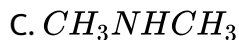
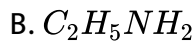
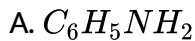
C. alcohol

D. alkyl nitrite

Answer:

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9. Which of the following compounds reacts with $NaNO_2$ and HCl at $0-4^\circ C$ to give alcohol/phenol?

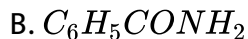
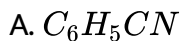
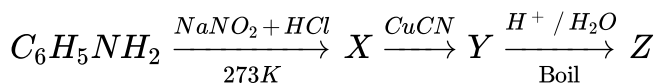


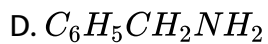
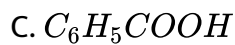
Answer:



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10. Identify 'Z' in the sequence

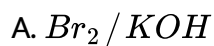




Answer:

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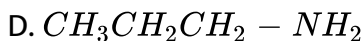
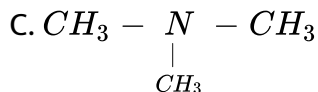
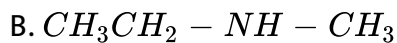
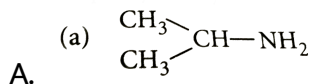
11. Primary and secondary amines are distinguished by:



Answer:

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12. 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:



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13. Match the column I with column II and mark the appropriate choice.

Column I		Column II	
(A)	$\text{CH}_3\text{NH}_2 + \text{CHCl}_3 + \text{KOH} \xrightarrow{\Delta}$	(i)	CH_3NH_2
(B)	$\text{CH}_3\text{CONH}_2 + \text{Br}_2 + \text{KOH} \longrightarrow$	(ii)	CH_3OH
(C)	$\text{CH}_3\text{NH}_2 + \text{NaNO}_2 + \text{HCl} \longrightarrow$	(iii)	CH_3NHCH_3
(D)	$\text{CH}_3\text{NC} + 4\text{H} \xrightarrow{\text{Pt}}$	(iv)	CH_3NC

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

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

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

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

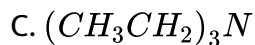
Answer:



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14. Which of the following amine does not react with Hinsberg's reagent

?

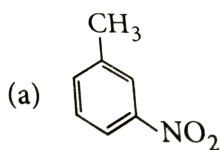
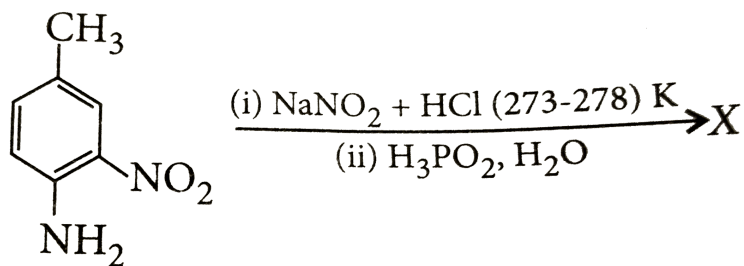


D. All of these

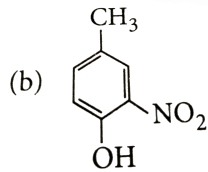
Answer:

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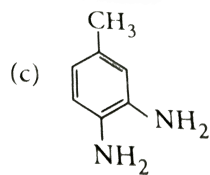
15. The structure of product X in the following reaction is



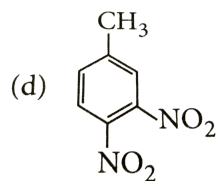
A.



B.



C.

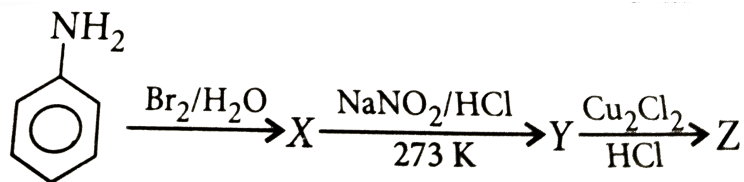


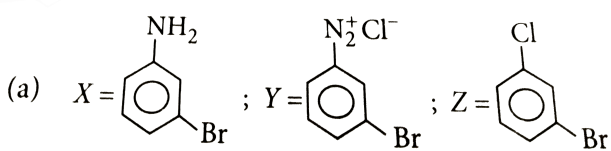
D.

Answer:

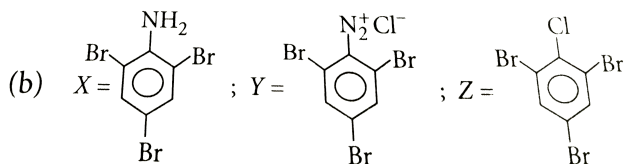
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16. Identify X, Y and Z in the given sequence of reactions.

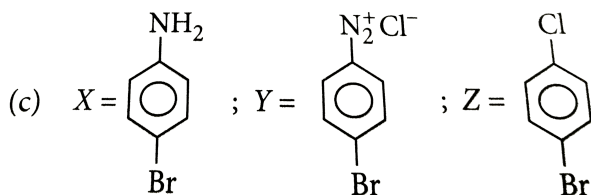




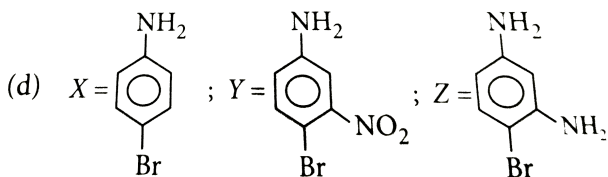
A.



B.



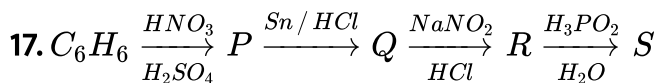
C.



D.

Answer:

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The end product S in the given sequence of reactions is

A. Benzoic acid

B. benzene

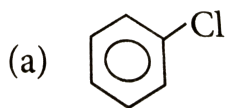
C. phenol

D. chlorobenzene.

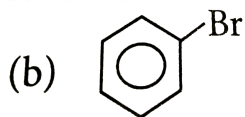
Answer:

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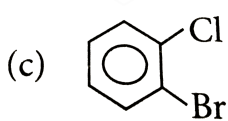
18. o-Chloroaniline is treated with a mixture of $NaNO_2$ and HCl and the product is reacted with cuprous bromide. The final product in the reaction will be



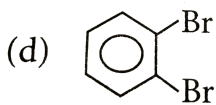
A.



B.



C.

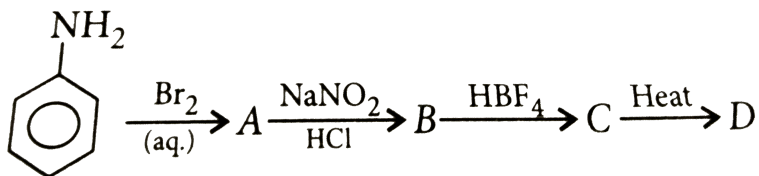


D.

Answer:

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19. The product 'D' in the following sequence of reactions is



A. 2,4,6-tribromofluorobenzene

B. fluorobenzene

C. p-bromofluorobenzene

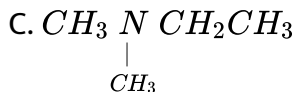
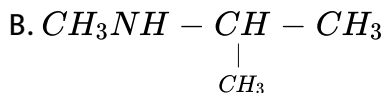
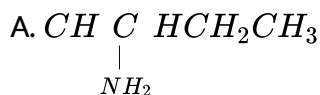
D. tribromobenzene

Answer:

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Hots

1. When an optically active amine (A) having molecular formula $C_4H_{11}N$ is subjected to Hofmann's exhaustive methylation followed by hydrolysis, an alkene (B) is produced which upon ozonolysis and subsequent hydrolysis yields formaldehyde and proanal. The amine 'A' is



Answer:



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2. A dichloroderivative (A) on treating with KCN followed by acid hydrolysis and heating gives a monobasic acid (B) along with liberation of CO_2 . (B) on heating with liquid ammonia followed by treating with Br_2/KOH gives (C) which on treating with $NaNO_2$ and HCl at low temperature followed by oxidation gives a monobasic acid (D) having molecular mass 74. 'C' in the whole process would be

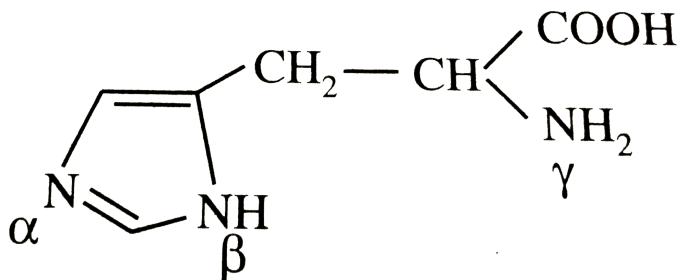
- A. ethyl amine
- B. propyl amine
- C. tert-butyl amine
- D. cyclopentyl amine.

Answer:



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3. 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. $\gamma > \beta > \alpha$

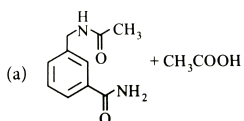
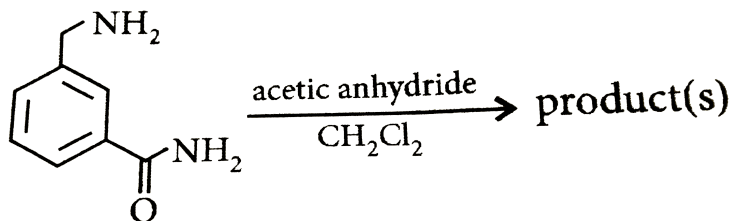
C. $\gamma > \alpha > \beta$

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

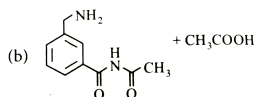
Answer:

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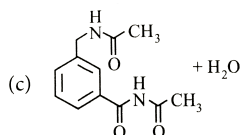
4. In the reaction shown below, the major product (s) formed is/are



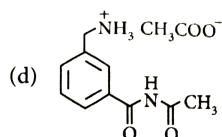
A.



B.



C.

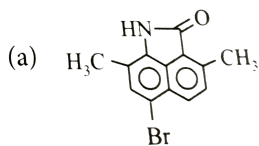
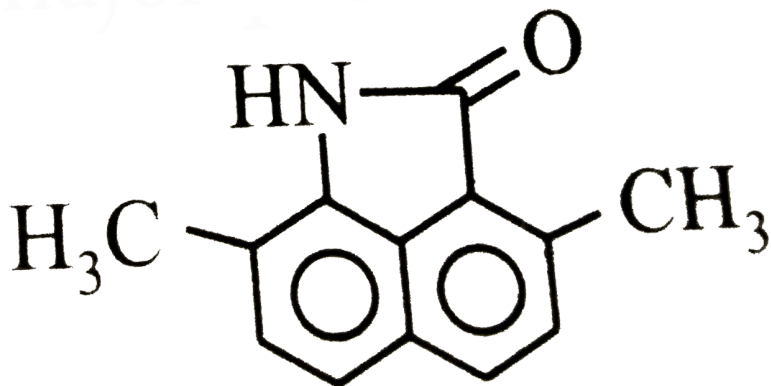


D.

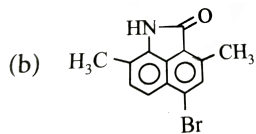
Answer:

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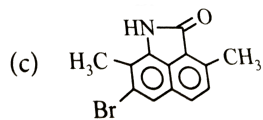
5. The major product obtained when Br_2/Fe is treated with



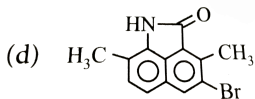
A.



B.



C.

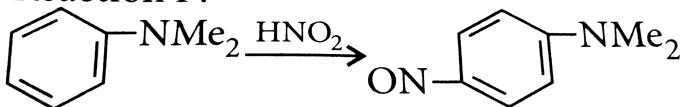


D.

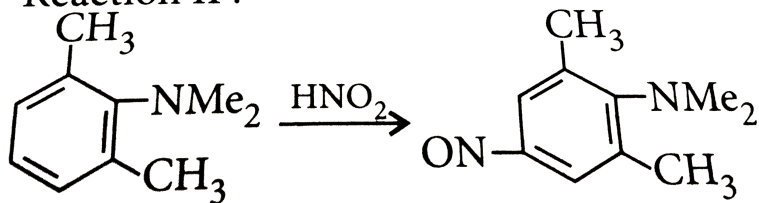
Answer:

6. 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:

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1. Which of the following is a 3° amine

- A. 1- Methylcyclohexylamine
- B. Triethylamine
- C. tert-butyl amine
- D. N-Methylaniline

Answer:



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2. The correct IUPAC name for $CH_2 = CHCH_2NHCH_3$ is

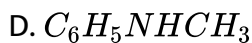
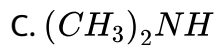
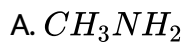
- A. allylmethylamine
- B. 2-aminon -4- pentene
- C. 4- aminopent - 1 - ene

D. N- methylprop- 2- en - 1 - amine

Answer:

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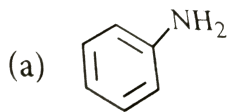
3. Amongst the following, the strongest base in aqueous medium is



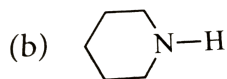
Answer:

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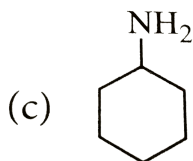
4. Which of the following is the weakest Bronsted base?



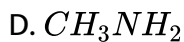
A.



B.



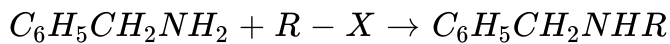
C.



Answer:

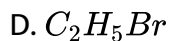
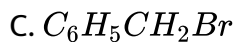
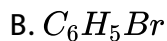
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5. Benzylamine may be alkylated as shown in the following equation



Which of the following alkyl halides is best suited for this reaction through S_N1 mechanism?

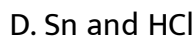
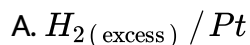




Answer:

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6. Which of the following reagents would not be a good choice for reducing an aryl nitro compound to an amine?



Answer:

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7. In order to prepare a 1° amine from an alkyl halide with simultaneous addition of one CH_2 group in the carbon chain, the reagent used as source of nitrogen is.....

- A. sodium amine, $NaNH_2$
- B. sodium azide, NaN_3
- C. potassium cyanide, KCN
- D. potassium phthalimide, $C_6H_4(CO)_2N^- K^+$

Answer:

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8. The source of nitrogen in Gabriel synthesis of amine is..

- A. sodium azide, NaN_3
- B. sodium nitrite, $NaNO_2$

C. potassium cyanide, KCN

D. potassium phthalimide, $C_6H_4(CO)_2N^- K^+$

Answer:

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9. Amongst the given set of reactants, the most appropriate for preparing 2° amine is

A. $2^\circ R - Br + NH_3$

B. $2^\circ R - Br + NaCN$ followed by H_2 / Pt

C. $1^\circ R - NH_2 + RCHO$ followed by H_2 / Pt

D. $1^\circ R - Br$ (2 mol) + potassium phthalimide followed by H_3O^+ / heat

Answer:

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10. The best reagent for converting 2-phenylpropanamide into 2-phenylpropanamine is

- A. excess H_2
- B. Br_2 in aqueous NaOH
- C. iodine in the presence of red phosphorus
- D. $LiAlH_4$ in ether.

Answer:



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11. The best reagent for converting, 2-phenylpropanamide into 1-phenylethanamine is....

- A. excess H_2 / Pt
- B. $NaOH / Br_2$

C. $NaBH_4$. Methanol

D. $LiAlH_4$ / ether

Answer:



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12. Hoffmann bromamide degradation reaction is shown by_____

A. $ArNH_2$

B. $ArCONH_2$

C. $ArNO_2$

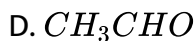
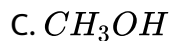
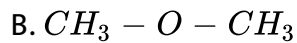
D. $AeCH_2NH_2$

Answer:



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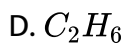
13. Methylamine reacts with HNO_2 to form....



Answer:

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14. The gas evolved when methylamine reacts with nitrous acid is....



Answer:

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15. In the nitration of benzene using a mixture of conc. H_2SO_4 and conc. HNO_3 , the species which initiates the reaction is...



Answer:

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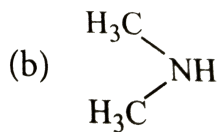
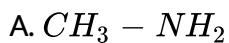
16. Reduction of aromatic nitro compounds using Fe and HCl gives...

- A. aromatic oxime
- B. aromatic hydrocarbon
- C. aromatic primary amine
- D. aromatic amide.

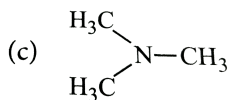
Answer:

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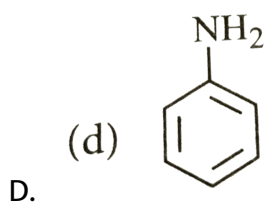
17. The most reactive amine towards dilute hydrochloric acid is



B.



C.



Answer:

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18. Acid anhydrides on reaction with primary amine gives...

- A. amide
- B. imide
- C. secondary amine
- D. imine.

Answer:

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19. The reaction $ArN_2^+Cl^- \xrightarrow{Cu/HCl} ArCl + N_2 + CuCl$ is named as....

- A. Sandmeyer reaction
- B. Gatterman reaction
- C. Claisen reaction
- D. Carbylamine reaction

Answer:



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20. Best method for preparing primary amines from alkyl halides without changing the number of carbon atoms in the chain is

- A. Hofmann bromamide reaction
- B. Gabriel phthalimide synthesis
- C. Sandmeyer reaction
- D. Reaction with NH_3

Answer:



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21. Which of the following compounds will not undergo azo coupling reaction with benzene diazonium chloride?

A. Aniline

B. Phenol

C. Anisole

D. Nitrobenzene

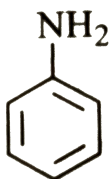
Answer:



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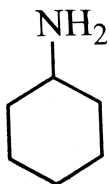
22. Which of the following compounds is the weakest Bronsted base?

(a)



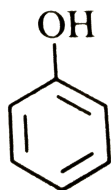
A.

(b)



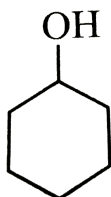
B.

(c)



C.

(d)



D.

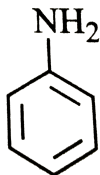
Answer:



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23. Among the following amines, the strongest Bronsted base is....

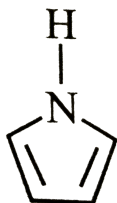
(a)



A.

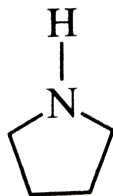
B. (b) NH_3

(c)



C.

(d)



D.

Answer:



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24. Which of the following methods of preparing of amines will give same number of carbon atoms in the chain of amines as in the reactant?

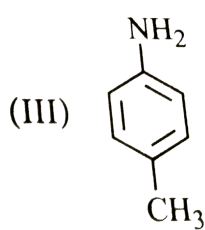
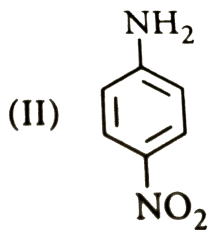
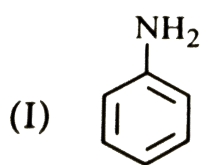
- A. Reaction of nitrite with $LiAlH_4$.
- B. Reaction of amide with $LiAlH_4$ followed by treatment with water.
- C. Heating alkyl halide with potassium salt of phthalimide followed by hydrolysis.
- D. Treatment of amide with bromine in aqueous solution of sodium hydroxide.

Answer:

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Ncert Exemplar Problems

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



A. II lt III lt I

B. III lt I lt II

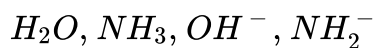
C. III lt II lt I

D. II lt I lt III

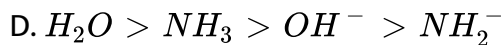
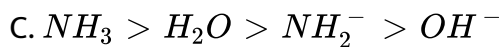
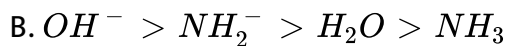
Answer:

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2. The correct decreasing order of basic strength of the following species is _____ .



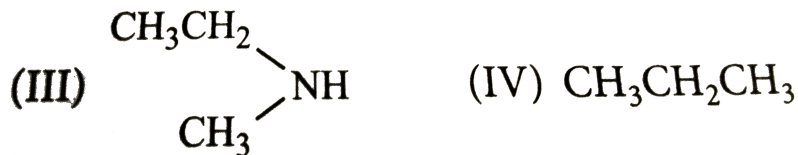
A. $NH_2^- > OH^- > NH_3 > H_2O$



Answer:

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3. Which of the following should be most volatile ?



A. II

B. IV

C. I

D. III

Answer:



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Assertion Reason Corner

1. Assertion : Isopropylamine is a secondary amine .

Reason : IUPAC name of isopropylamine is 2-aminopropane .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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2. Assertion : Only a small amount of HCl is required in the reduction of nitro compound with iron scarp .

Reason : $FeCl_2$ formed gets hydrolysed to release hydrochloric acid during the reaction .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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3. Assertion : In ammonolysis of alkyl halides , primary amine is obtained as a major product by taking large excess of NH_3 .

Reason : The process of cleavage of the C-X bond by ammonia molecule is known as ammonolysis .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:

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4. Assertion : Gabriel phthalimide synthesis can be used to convert alkyl chlorides into primary amines .

Reason : With proper choice of reagent , Gabriel synthesis can used to prepare primary , secondary and tertiary amines .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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5. Assertion : Aromatic primary amines can be prepared by Gabriel phthalimide synthesis .

Reason : Aryl halides undergo nucleophilic substitution with the anion formed by phthalimide .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:

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6. Assertion : Hofmann degradation of benzamide gives aniline .

Reason : Hofmann bromamide degradation reaction can be used for descending amine series .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.

- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:

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7. Assertion : The order of basicity of amines in the gaseous phase follows the order :



Reason : Amines have an unshared pair of electrons on nitrogen atom due to which they behave as Lewis base .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true and reason not is the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer:

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8. Assertion : The order of basic strength in case of methyl substituted and ethyl substituted amines in aqueous state is different .

Reason : Methyl group has stronger inductive effect than ethyl group .

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true and reason not is the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer:

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9. Assertion : The diazotisation reaction must be carried in ice cold solution ($0 - 4^{\circ}C$).

Reason : At higher temperature , benzenediazonium chloride reacts with water to give phenol .

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true and reason not is the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer:

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10. Assertion : Isocyanide test can be used to distinguish between secondary and tertiary amines .

Reason : Tertiary amines on heating with chloroform and alc. KOH form foul smelling substances .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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11. Assertion : N-Ethylbenzenessulphonamide is soluble in alkali .

Reason : Hydrogen attached to nitrogen in sulphonamide is strongly acidic in nature .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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12. Assertion : Acetanilide is less basic than aniline .

Reason : Acetanilide is formed by reaction of aniline with acetic anhydride .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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13. Assertion : In strongly acidic solution, aniline becomes less reactive towards electrophilic reagents .

Reason : Due to protonation of amino group the lone pair of electrons on nitrogen is not available for donation to benzene ring by resonance .

- A. a.If both assertion and reason are true and reason is the correct explanation of assertion.
- B. b.If both assertion and reason are true and reason is not the correct explanation of assertion.
- C. c.If assertion is true but reason is false.
- D. d.If assertion is false but reason is true.

Answer:



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14. Assertion : Aniline does not undergo Friedel-Crafts reaction .

Reason : Friedel-Craft reaction is an electrophilic substitution reaction .

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true and reason not is the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

Answer:



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