

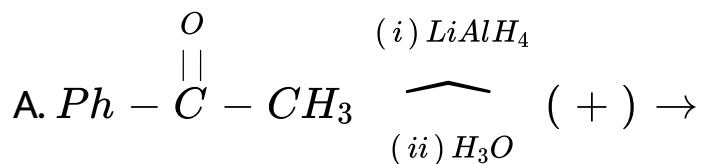
# CHEMISTRY

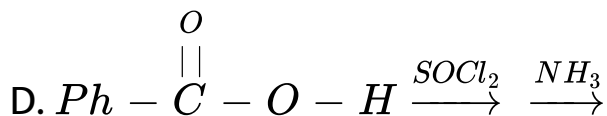
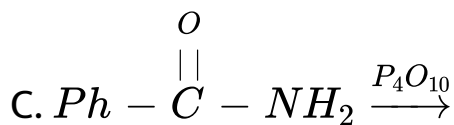
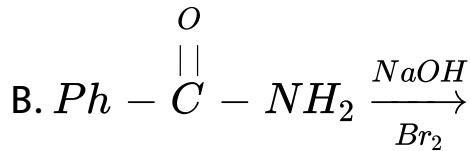
## BOOKS - MS CHOUHAN CHEMISTRY (HINGLISH)

### AMINES

#### Exercise

1. In which of the following reaction cyanide will be obtained as a major product?

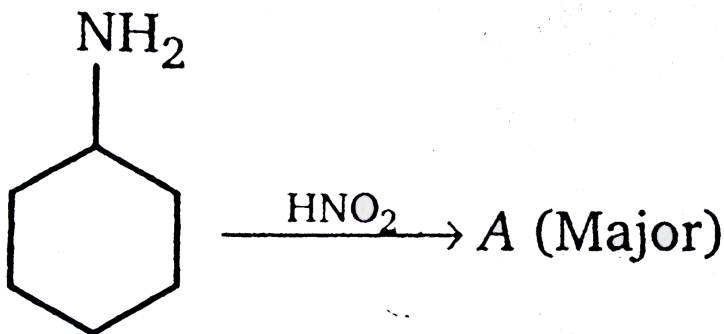




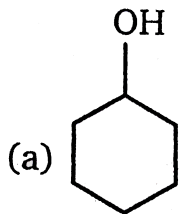
**Answer: C**

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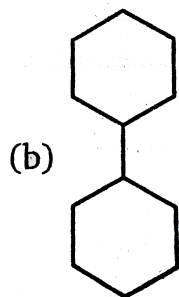
2.



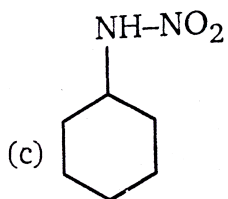
Product (A) is:



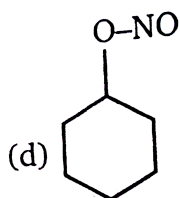
A.



B.



C.



D.

**Answer: A**



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3. Which of the following alkene cannot be prepared by de-amination of n-Butanamine with  $NaNO_2 / HCl$  ?

A. 1-butene

B. cis 2-butene

C. trans-2-butene

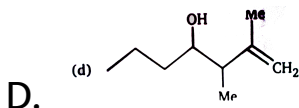
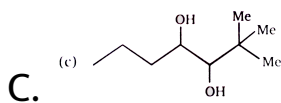
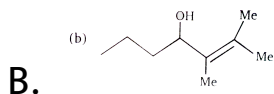
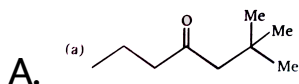
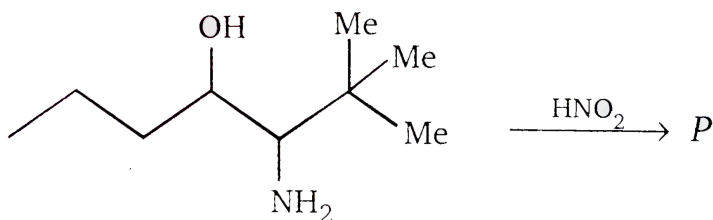
D. Iso-butene

**Answer: D**



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4. Predict the major product P in the following reaction:

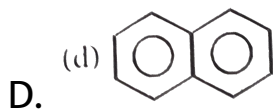
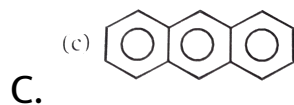
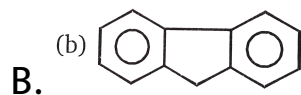
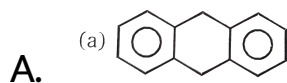
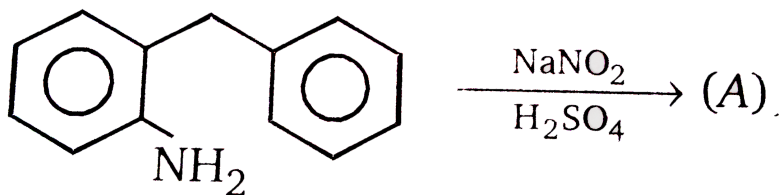


Answer: A



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5. Complete the following reaction

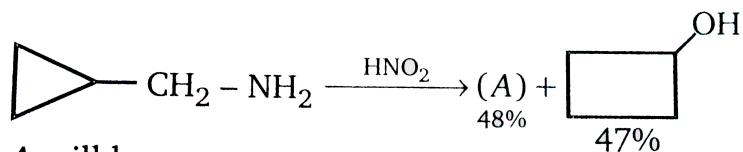


**Answer: B**

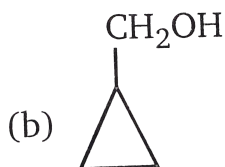
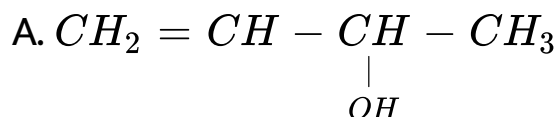


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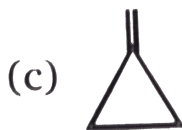
6. Complete the following reaction



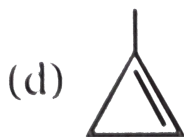
A will be :



B.



C.



D.

**Answer: B**



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7. Which of the following isomers of  $C_8H_9NO$  is the weakest base?

A. o-Aminoacetophenone

B. p-Aminoacetophenone

C. m-Aminoacetophenone

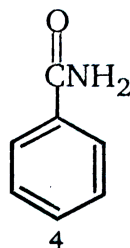
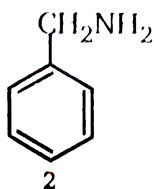
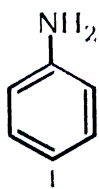
D. Acetanilide

**Answer: D**



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8. Rank the following compounds in order of increasing basic strength. (weakest  $\rightarrow$  strongest)



A.  $4 < 2 < 1 < 3$

B.  $4 < 3 < 1 < 2$

C.  $4 < 1 < 3 < 2$

D.  $2 < 1 < 3 < 4$

**Answer: B**

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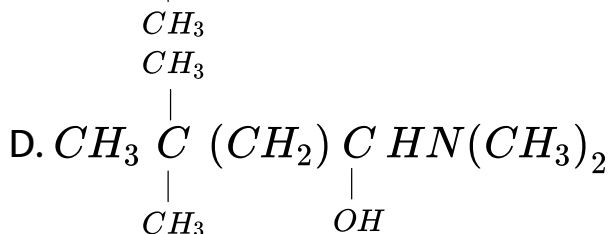
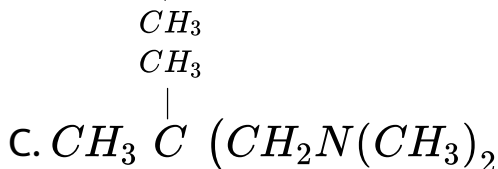
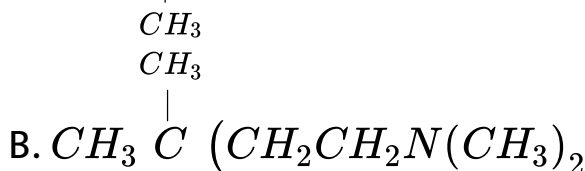
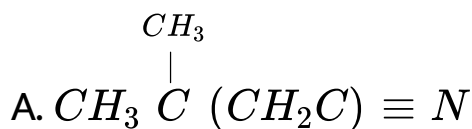
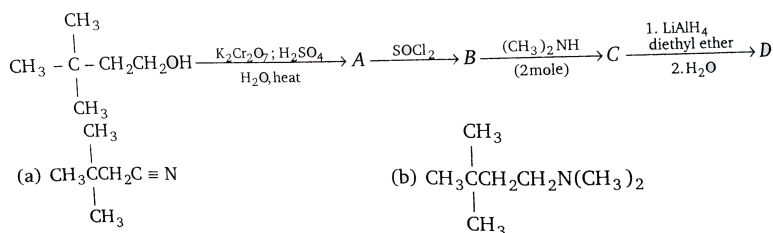
9. Which of the following arylamines will not form a diazonium salt on reaction with sodium nitrite in hydrochloric acid?

- A. m-Ethylanilin
- B. Pp-Aminoacetophenone
- C. 4-Chloro-2-nitroaniline
- D. N-Ethyl-2-methylaniline

**Answer: D**

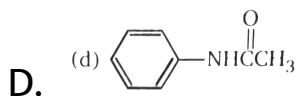
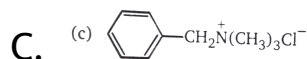
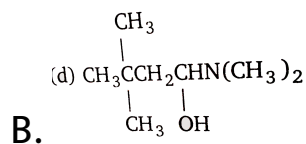
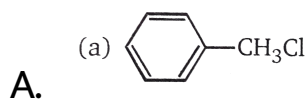
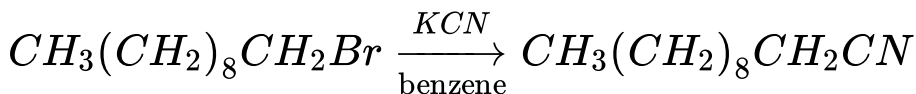
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10. Identify product D in the following sequence:



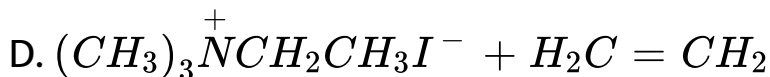
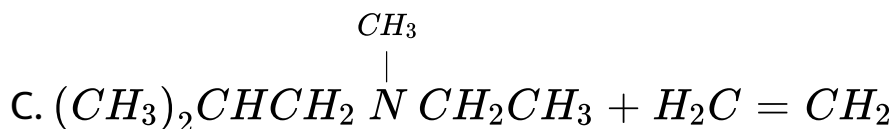
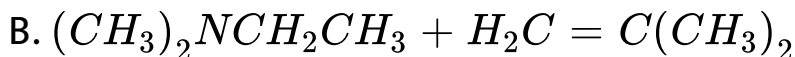
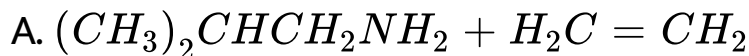
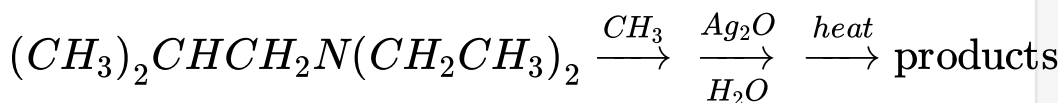
Answer: B

11. Which one of the following is best catalyst for the reaction shown below?



**Answer: C**

12. The major product obtained from the following sequence of reactions are:

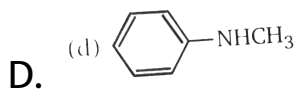
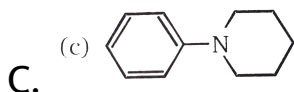
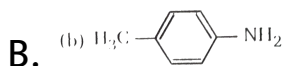
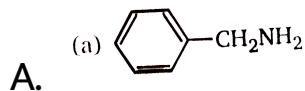


**Answer: C**



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13. Which amine yield N-nitroso amine after treatment with nitrous acid ( $NaNO_2$ ,  $HCl$ )?

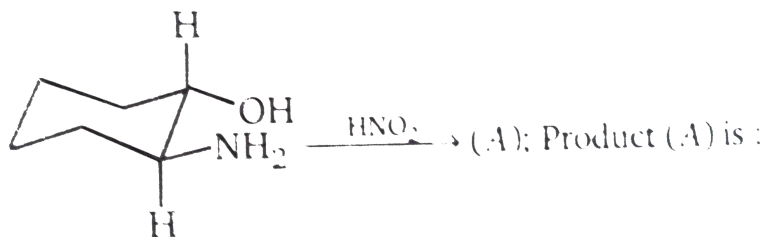


**Answer: D**



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14. Complete the following reaction



A. cyclopentane carboxyaldehyde

B. cyclohexane-1,2-diol

C. 2-aminocyclohexene

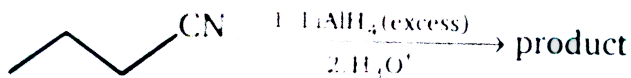
D. cyclohex-2-enol

**Answer: A**

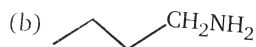


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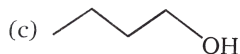
15. Choose the appropriate product for this reaction.



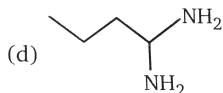
A.



B.



C.



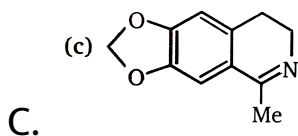
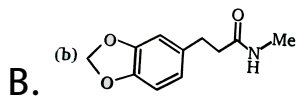
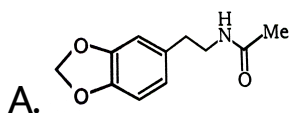
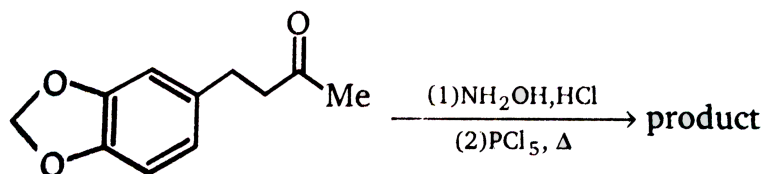
D.

**Answer: B**



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16. Which of the following product will be obtained in the given (consider minor product also) Beckmann-type rearrangement?



D. None of these

**Answer: D**



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17. Deamination (or) diazotization of n-Bu- $NH_2$  with  $NaNO_2 / HCl$  gives..... isomeric butene.

A. 2

B. 3

C. 4

D. 5

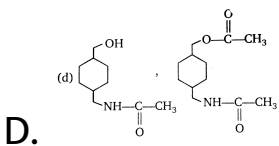
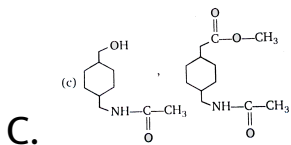
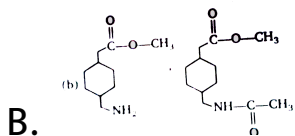
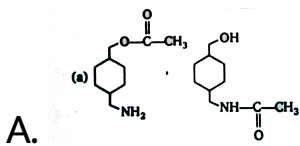
**Answer: B**



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$$\text{12. } \text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{CH}_3 \xrightarrow{\text{KMnO}_4} \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3 \xrightarrow{\text{KMnO}_4} \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$$

P and Q respectively.

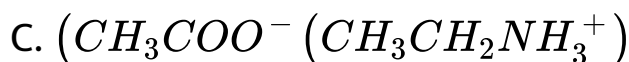


**Answer: D**



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19. A nitrile X is treated with  $LiAlH_4$  to obtain compound  $Y(C_2H_7N)$ . In a separate reaction X is hydrolysed in an acid medium to obtain Z. The product obtained after mixing Y and Z will be :

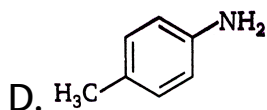
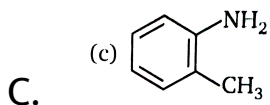
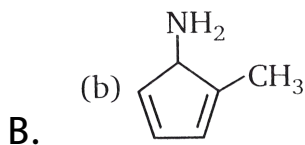
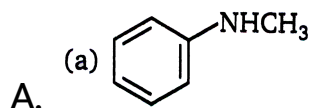


**Answer: C**



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20. A compound (X) having the molecular formula  $C_3H_9N$  reacts with benzenesulphonyl chloride to form a solid insoluble in alkali is . The compound (X) is



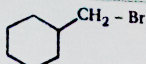
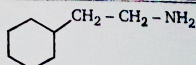
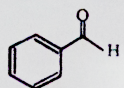
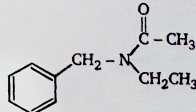
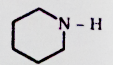
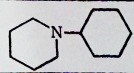
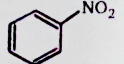
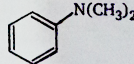

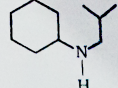
**Answer: A**



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## Level 2

1. Five amine synthesis are outlined below. In each reactions box enter a single letter designating the best reagent and conditions selected from the list at the bottom of the page.

<b>A.</b>		First Step <input type="text"/> Second Step <input type="text"/>	
<b>B.</b>		First Step <input type="text"/> Second Step <input type="text"/> Third Step <input type="text"/>	
<b>C.</b>		First Step <input type="text"/> Second Step <input type="text"/>	
<b>D.</b>		First Step <input type="text"/> Second Step <input type="text"/>	
<b>E.</b>		First Step <input type="text"/> Second Step <input type="text"/> Third Step <input type="text"/> Fourth Step <input type="text"/>	

a) i)  $LiAlH_4$  in ether, ii)  $H_2O$  & base

b)  $C_2H_5NH_2$  (cat.  $H^+$ )

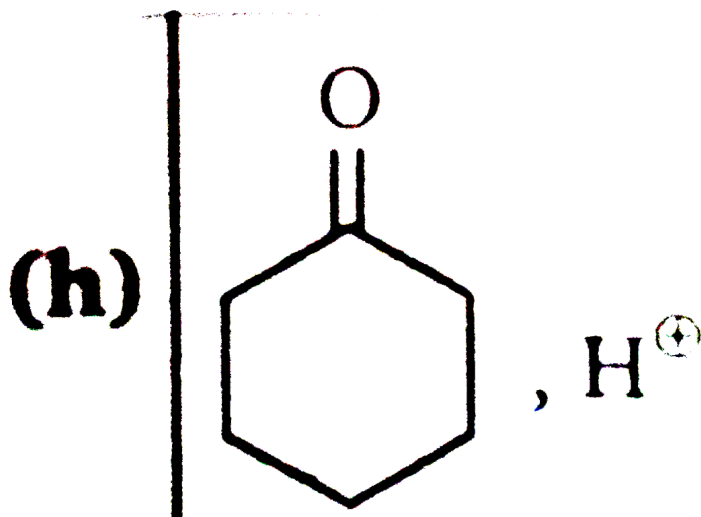
c)  $\text{NaCN}$  in alcohol

d)  $\text{H}_2$  & Ni catalyst or  $\text{H}_2$  & Pd catalyst

e)  $\text{NaN}_3$  in alcohol

f)  $(\text{CH}_3\text{CO})_2$  & pyridine

g)  $\text{C}_2\text{H}_5\text{Br}$



h)

(i)  $2\text{CH}_3\text{I}$  & pyridine

j)  $\text{KOH}$  in  $\text{H}_2\text{O}$



View Text Solution

## Solved Problem

1. Outline a synthesis of 4-methylpentanamine using the Gabriel synthesis.



**View Text Solution**

2. Outlined below is a synthesis of the stimulant amphetamine. Provide the intermediates A and B.



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3. Reductive amination of a ketone is almost always a better method for the synthesis of an amine of the type

 than treatment of an alkyl halide with ammonia.

Explain why this is true.



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4. Show how you might synthesize 2-propanamine from a three-carbon starting material that is a ketone, aldehyde, nitrile, or amide.



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5. The reaction sequence below shows how a methyl group on a benzene ring can be replaced by an amino group. Supply the missing reagents and intermediates.



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### Single Correct Choice Type

1. Acetamide is treated separately with the following reagents. Which of these would give methyl amine?

A.  $PCl_5$

B.  $\text{NaOH} + \text{Br}_2$

C. Soda lime

D. Hot conc.  $\text{H}_2\text{SO}_4$

**Answer: B**



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

A. Hoffman Bromamide reaction.

B. Gabriel phthalimide synthesis.

C. Sandmeyer reaction.

D. reaction with  $NH_3$

**Answer: C**



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3. The Gabriel synthesis is a method to generate primary

A. nitriles

B. acids

C. alkylamines

D. aldehydes

Answer: C



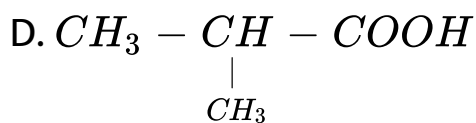
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4. An organic compound A upon reacting with  $NH_3$  gives B. On heating, B gives C. C in presence of KOH reacts with  $Br_2$  to give  $CH_3CH_2NH_2$ . A is

A.  $CH_3CH_2COOH$

B.  $CH_3COOH$

C.  $CH_3CH_2CH_2COOH$



**Answer: A**



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5. Which one of the following methods is neither meant for the synthesis nor for separation of amines?

A. Hinsberg method

B. Hofmann method

C. Wurtz reaction

D. Curtius reaction

Answer: C



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6. Which of the following diazonium salts cannot be isolated?

A. 

B.  $Ph - \overset{+}{N} \equiv N : Cl^{-}$

C. 

D. 

Answer: A



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7. Which amine yields N-nitroso amine after treatment with nitrous acid?

A. 

B. 

C. 

D. 

**Answer: C**

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8. Amongst the compounds given, the one that would form a brilliant colored dye on treatment with  $NaNO_2$  in dil. HCl followed by addition to an alkaline solution of  $\beta$ -naphthol is

A. 

B. 

C. 

D. 

**Answer: C**



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9. The nitrogen atom in the following cyclic compounds can be removed as trimethylamine by successive Hoffmann eliminations (involving exhaustive methylation followed by heating with AgOH). The amine which will require a greater number of Hofmann eliminations is



**Answer: B**



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10. What will be the final product of the reaction of cyclohexanamine with sodium nitrite in dil. HCl?

A. 

B. 

C. 

D. 

**Answer: A**



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11. Which of the following compound is the strongest base?

A. 

B. 

C. 

D. 

**Answer: D**



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12. Which of the following is least reactive toward  $S_NAr$ ?

A. 

B. 

C. 

D. 

**Answer: C**



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