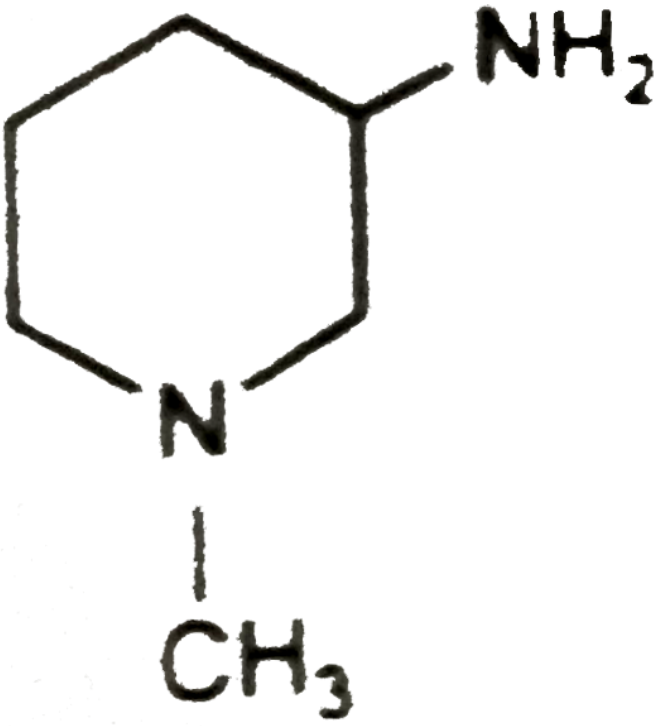
CHEMISTRY

FOR IIT JEE ASPIRANTS OF CLASS 12 FOR CHEMISTRY

NITROGEN COMPOUNDS

Mcq

1. Compound is a -



A. 1° and 3° amine

B. Only primary amine

C. 2° and 3° amine

D. Only secondary amine

Answer: A

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2. The third member of homologous series of dimethy1 amine-

A. $CH_3 - CH_2 - NH - CH_2 - CH_3$

B. $CH_3 - NH - CH_2 - CH_2 - CH_3$

C. $CH_3 - NH - CH(CH_3)_2$

D. 2^{nd} and 3^{rd} are correct

Answer: D

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3. Tertiary butyl amine is a-

A. 1° Amine

B. 2° Amine

C. 3° Amine

D. Quaternary salt

Answer: A

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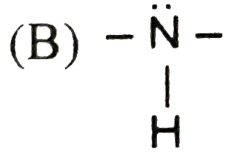
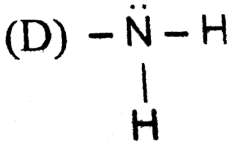
4. N-atom in quaternary ammmonium halide will have the form-

A. 

B. 

C. 

D. 

Answer: A

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5. $-CONH_2 \xrightarrow{\text{Reduction}} -CH_2NH_2$

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

A. $sp \rightarrow sp^2$

B. $sp \rightarrow sp^3$

C. $sp^2 \rightarrow sp^3$

D. $sp^2 \rightarrow sp$

Answer: C

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6. Acetamide is treated separetely with the following reagents. Which one of these will give methylamine?

A. PCL_5

B. $NaOH + Br_2$

C. soda lime

D. hot conc. H_2SO_4

Answer: B

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7. The compound which on rection with aqueous nirous acid at low temperature produces an oily nitrosamine, is

A. methyl amine

B. ethyl amine

C. diethyl amine

D. triethyl amine

Answer: C

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8. Which of the following statement is not correct?

A. Primary amines show intermolecular hydrogen bonding.

B. Secondary amines show intermolecular hydrogen bonding.

C. Tertiary amines show intermolecular hydrogen bonding.

D. Amines have a lower boiling point as compared to those of alcohols and carboxylic acids of comparab,e molar masses.

Answer: C

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9. Give the structure of (A) (explanations are not required). $A(C_3H_9N)$ reacts with bezenesulphonyl chloride to give a solid insoluble in alkali'.

A. $CH_3NHC_2H_5$

B. $(CH_3)_3N$

C. $CH_3CH_2CH_2NH_2$

D. insufficient data to predict.

Answer: A

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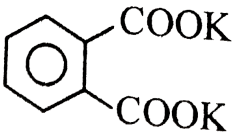
10. Pthalimide$+KOH(alc.) \rightarrow [A]$

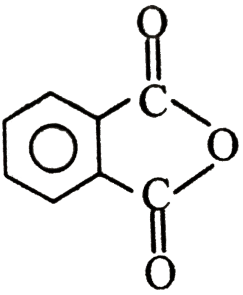
$[A] + CH_3CH_2CH_2Br \rightarrow [B]$

$[B] + h_2O, OH^- \xrightarrow{\triangle} [C] + [D]$

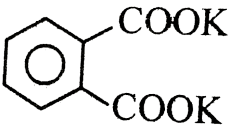
The final products [C] [D] in the sequence of the above reactions are



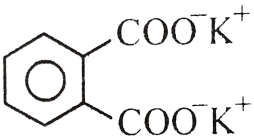
A. $CH_3NHC_2H_5$,



B. $CH_3CH = CH_2$,



C. $(CH_3)_3N$,



D. $CH_3CH_2CH_2NH_2$,

Answer: D

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11. Formalodoxime on reaction with Na/EtOH gives -

A. 1° Amine

B. 2° Amine

C. 3° Amine

D. All above

Answer: A

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12. Which of the following compounds on reduction gives an amine-

A. Alkyl cyanide

B. Aldoxime

C. Alkyl isocyanide

D. All above

Answer: D

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13. An alkyl amine is prepared by the following reaction-

$$RCOOH + N_3H \xrightarrow{\text{Conc.}\, H_2So_4} RNH_2 + C0_2 + N_2$$

Name of the above reaction is:

A. Schmidt reaction

B. Stephan's reaction

C. Schotton-Baumann reaction

D. Reimer-tiemann reaction

Answer: A

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14. Alkyl halide reacts with AgCN to from -

A. Alcohol

B. Cyanide

C. Isocyanide

D. Both B & C

Answer: D

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15. Amide on heating with P_2O_5 gives

A. Alkane nitrile

B. Alkyl halide

C. Amine

D. None

Answer: A

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16. Which of the following amine does not react with Hinsberg reagent-

A. Neopentyl amine

B. Isopropyl Amine

C. Triethyl Amine

D. Ethyl methyl amine

Answer: C

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17. In which of the following sequence of reaction the end product does not exhibit tautomerism-

A. $CH_3CH_2NH_2 \xrightarrow{\text{NOCL}} \xrightarrow{AgNO_2}$

B. $(CH_3)_2CHNH_2 \xrightarrow{\text{NOCL}} \xrightarrow{AgNO_2}$

C. $(CH_3)_3CNH_2 \xrightarrow{\text{NOCL}} \xrightarrow{AgNO_2}$

D. $CH_3CH(NH_2)C_2H_5 \xrightarrow{\text{NOCL}} \xrightarrow{AgNO_2}$

Answer: C

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18. Amide on heating with P_2O_5 gives

A. Alkalinenitrile

B. Alkyl halide

C. Amine

D. None

Answer: A

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19. The alkanenitriles are isomeric with-

A. Primary alkanamines

B. secondary alkanamines

C. Alkyl isocyanides

D. Nitroalkanes

Answer: C

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20. Mendius reaction involves the reduction of-

A. Cyanoalkanes

B. Alkyl isocyanides

C. Oximes

D. Nitroalkanes

Answer: A

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Exercise 1

1. Which statement is not correct-

A. methyl amine is more basic than NH_3

B. Amines from hydrogen bonds

C. Ethyl amine has higher boiling points than propane

D. Dimethyl amine is less basic than methyl amine

Answer: D

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2. Amines are basic in nature because-

A. They produce OH^- ions when treated with water

B. They have replaceable H atoms on N atoms

C. They have lone pair electron on N atom

D. None of these

Answer: C

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3. Lowest boiling point will be of the compound-

A. Ethylamine

B. Ethylmethylamine

C. 1-Propaneamine

D. N,N-Dimethylmethanamine

Answer: A

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4. Which of the following compund gives the smell of mustard oil-

A. Alkyl isocynate

B. Allyl isothiocyanate

C. Alkyl isocyanide

D. Alkyl isonitrile

Answer: B

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5. Hydrolysis of alkyl isocyaide yeilds -

A. Primary amines

B. Tert. Amine

C. Alcohal

D. Aldehyde

Answer: A

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6. Which of the following does not form a sulphur comound with primary amine-

A. Hinsberg's reagent

B. Sulphuric acid

C. Schotten-Boumann reaction

D. Mustard oil reaction

Answer: D

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7. Which of the following can be detected by carbylamine reaction-

A. Urea

B. CH_3CONH_2

C. $C_2H_5NH_2$

D. All the above

Answer: C

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8. Himesberg's reagent is-

A. Diethyl oxalate

B. Benzyl choride

C. Benzene sulphonyl chloride

D. None of these

Answer: C

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9. The presence of primary amines can be confiremed by-

A. Reaction with HNO_2

B. Reaction with $CHCl_3$and $alc.\ KOH$

C. Reaction with Grignard reagent

D. Reaction with acetyl chloride

Answer: B

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

A. Five

B. SIX

C. SEVEN

D. EIGHT

Answer: D

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11. Ethylamine can be prepared by the all except-

A. Curtius reaction

B. Hofmann reaction

C. Mendius reaction Reduction of formaldoxime

D. Reduction of formalodoxime

Answer: D

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12. Which of the following mixtures when heated in alcoholic KOH gives carbylamine test?

A. $CHCL_3 + Ag$ powder

B. $CHCL_3 + CH_3NH_2$

C. $CH_3CL + CH_3NH_2$

D. $CH_3CN + CH_3NH_2$

Answer: B

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13. which of the following is produced by reducing RCN in sodium and alcohol?

A. $RCONH_2$

B. $RCOONH_4$

C. RCH_2NH_2

D. $(RCH_2)_3N$

Answer: C

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14. Which of the following amines does not show carbylamine recation?

A. Ethylamine

B. Dimethylamine

C. Methylamine

D. Phenylaniline

Answer: B

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15. In the following reaction

$CHCl_3 + C_6H_5NH_2 \xrightarrow{\text{KOH}} A + 3B + 3C +$, the product 'A', is

A. phenyl isocyanide

B. phenyl cyanide

C. ethylene chloride

D. chloro benzene

Answer: A

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16. Dehydration of benzaldoxime with acetic anhydride gives

A. benzonitrile

B. benzamide

C. benzaldehyde

D. benzaniline

Answer: A

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17. When a solution of aliphatic aminne is treated with $NANO_2$, the effervescence occurs due to the formation of

A. CO_2

B. NO_2

C. N_2

D. H_2

Answer: C

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18. Amides can be converted into amines by a reactions named after .

A. Perkin

B. Claisen

C. Hofmann

D. Sand Meyer

Answer: C

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19. Aldoximes on reduction with $LiAlH_4$ or Na/C_2H_5OH give

A. 1° amines

B. 2° amines

C. 3° amines

D. Quaternary salts

Answer: A

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20. C_3H_9N represents a

A. Primary amines

B. Secondary amines

C. Tertiary amines

D. All the above

Answer: D

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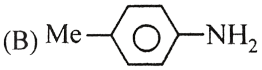
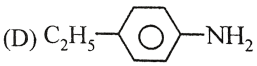
21. Which of the following amines gives positively the carbylamine test?

A. $C_6H_5 - NH - CH_3$

B. 

C. $C_6H_5 - NH - C_4H_9$

D. 

Answer: B

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22. Amongst the following the most basic compound is :

A. benzyl

B. aniline

C. acetanilide

D. p-nitro-aniline

Answer: A

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23. The compound which on rection with aqueous nirous acid at low temperature produces an oily nitrosamine, is

A. Diethyl amine

B. ethyl amine

C. Aniline

D. methyl amine

Answer: A

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24. Butanenitrile may be prepared by heating

A. propyl alcohol with KCN

B. butyl alcohol with KCN

C. butyl chloride with KCN

D. propyl chloride with KCN

Answer: D

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25. Determine the end prodcut of the following reactions

$C_2H_5NH_2 \xrightarrow{HNO_2} A \xrightarrow{PCL_5} B \xrightarrow{NH_3} C$

A. ethyl cyanide

B. methyl amie

C. Ethyl amine has higher boiling points than propane

D. acetamide

Answer: B

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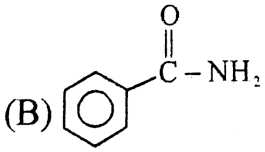
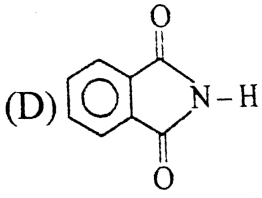
26. Which of the following can not give Hoffmann's bromamide raction:

A. $Me - \overset{O}{\overset{||}{C}} - NH - Br$

B. 

C. $Me - \overset{O}{\overset{||}{C}} - NH - Me$

D. 

Answer: C

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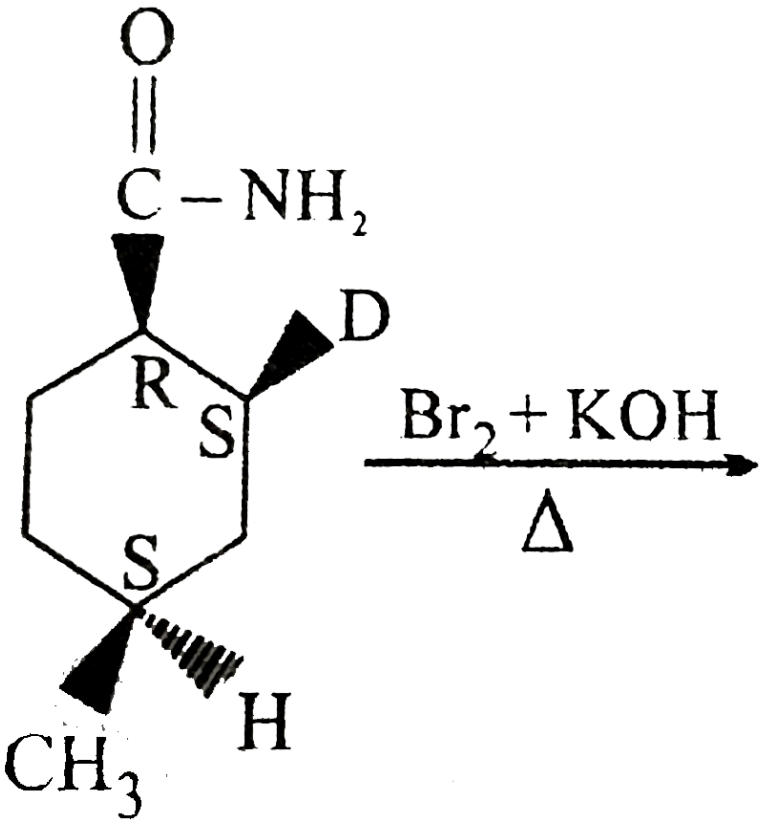

27. Primary amine

the correct confirguration of product i.e. primary amine is

A. IR, 2S, 4S

B. 1S, 2S, 4S

C. 1S,2R,4R

D. All are possible

Answer: A

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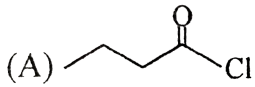
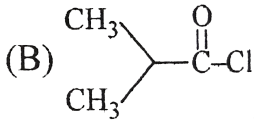
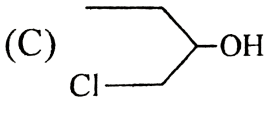
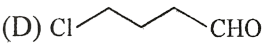
28. $C_4H_7OCl \xrightarrow{NH_3} C_4H_9ON \xrightarrow[KOH]{Br_2} CH_3CH_2CH_2NH_2$ Compound (X) is

A. 

B. 

C. 

D. 

Answer: A

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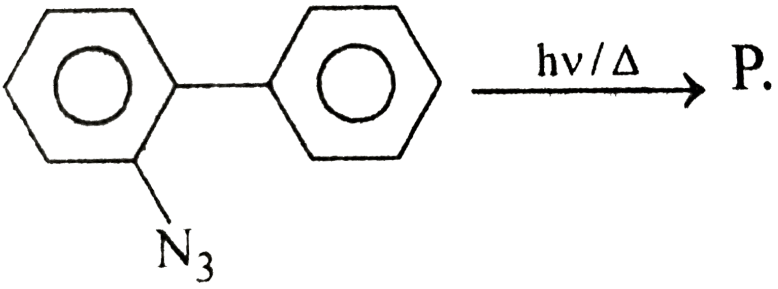
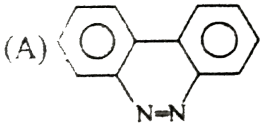
29.



P,is,

A.



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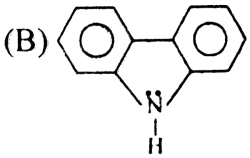

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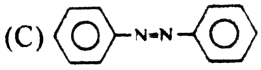
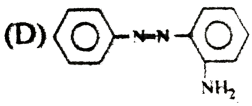


D.



Answer: B

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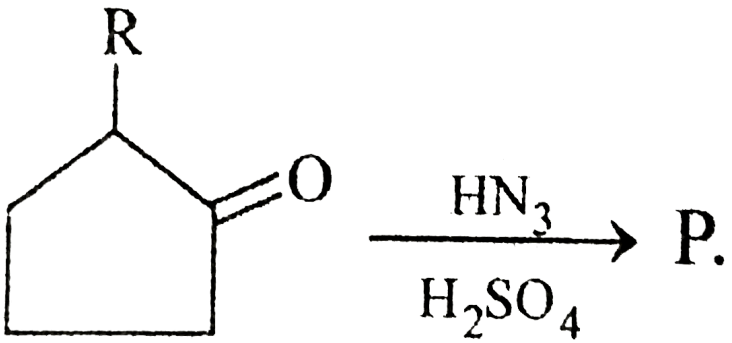
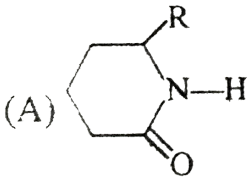
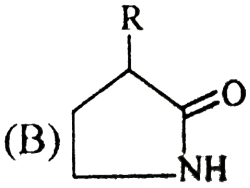
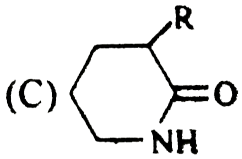
30. Complete the following reaction



Identify P.

A. 

B. 



C.

D. Both A & C

Answer: D

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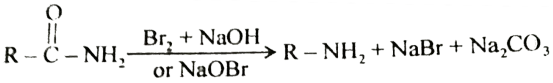
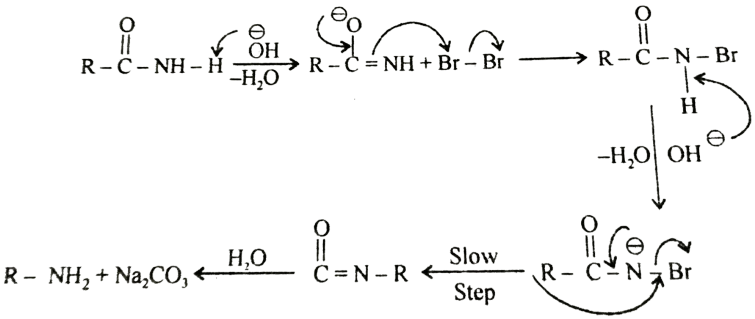
Exercise 2 Paragraph

1. The conversion of an amide by action of NaOH and Br_2 to primary amine that has one carbon less than

the starting amide is known as Hofmann-Bromamide reaction.

$$R-\overset{\overset{O}{||}}{C}-NH_2 \xrightarrow[\text{or NaOBr}]{Br_2+NaOH} R-NH_2+NaBr+Na_2CO_3$$





Number of moles of NaOH consumed in a above reaction :

A. 1

B. 2

C. 3

D. 4

Answer: D

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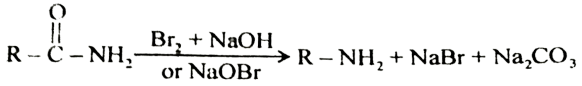
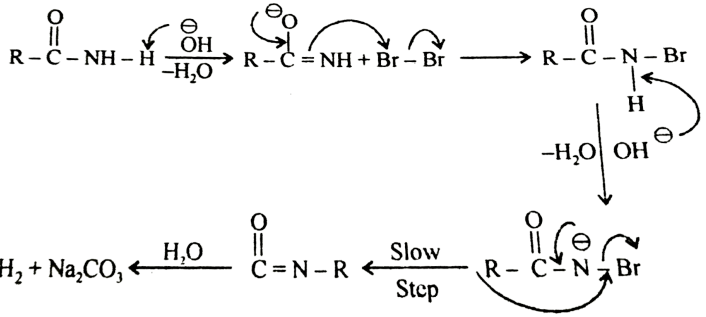
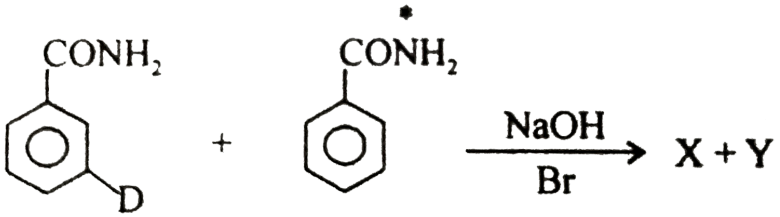
2. The conversion of an amide by action of NaOH and Br_2 to primary amine that has one carbon less than

the starting amide is known as Hofmann-Bromamide reaction.

$$R-\overset{\overset{O}{||}}{C}-NH_2 \xrightarrow[\text{or } NaOBr]{Br_2+NaOH} R-NH_2+NaBr+Na_2Co_3$$

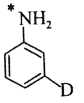


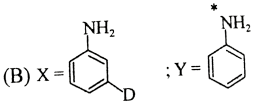


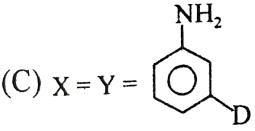


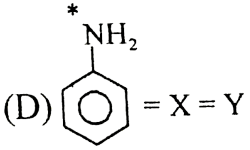
$$\xrightarrow[Br]{NaOH} X+Y$$

Find X and Y:

A. (A) X =  ; Y = 

B. 

C. 

D. 

Answer: B

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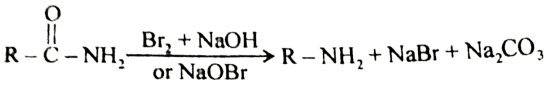
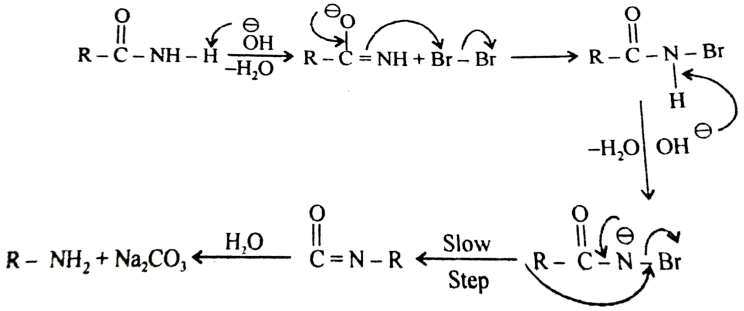
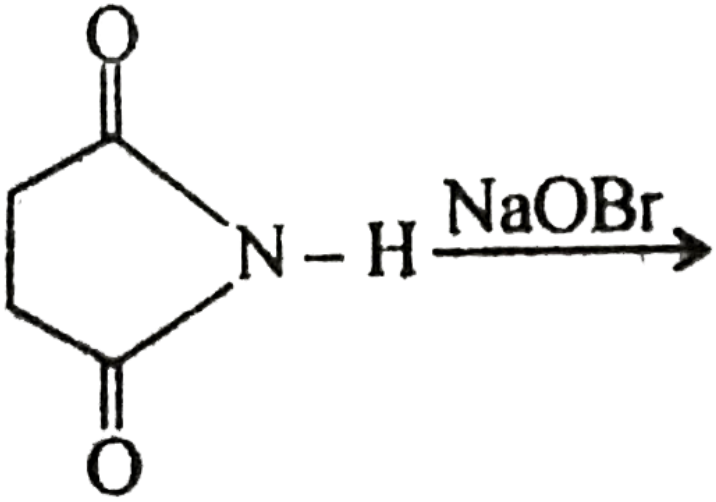
3. The conversion of an amide by action of NaOH and Br_2 to primary amine that has one carbon

less than the starting amide is known as Hofmann-Bromamide reaction.

$$R-\overset{\overset{O}{||}}{C}-NH_2 \xrightarrow[\text{or } NaOBr]{Br_2+NaOH} R-NH_2+NaBr+Na_2Co_3$$

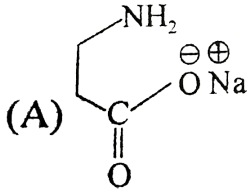




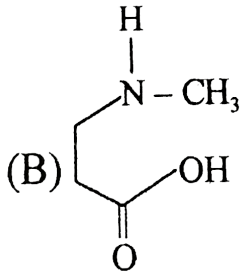


, Find out X :

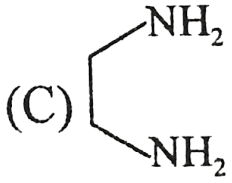
A.



B.



C.



D. All of these

Answer: A

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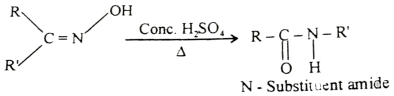
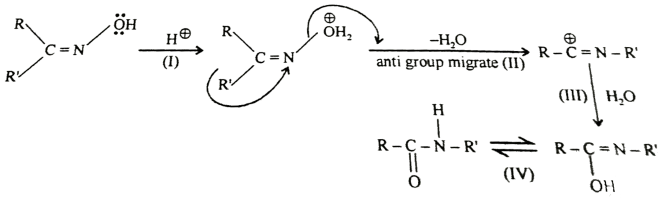
4. Ketoxine when heated with certain reagents undergoes rearrangement to form amides. This is known as Beckmann's rearrangement.



Mechanism :



Find out slowest step of the reation :

A. I

B. II

C. III

D. IV

Answer: B

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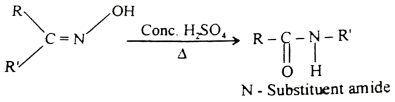
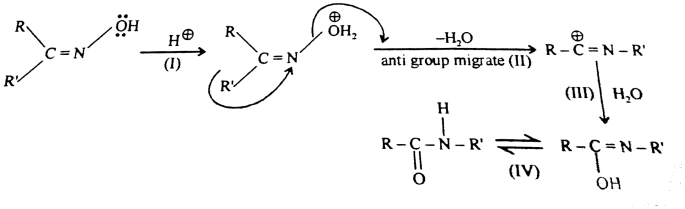
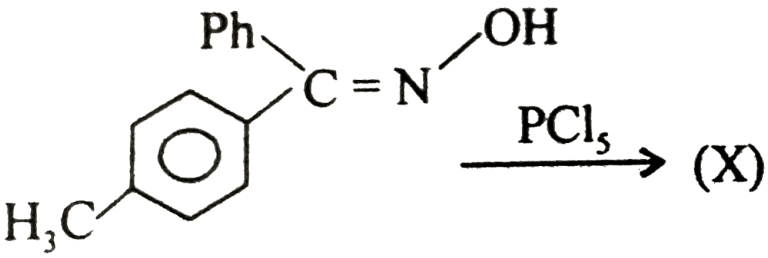
5. Ketoxine when heated with certain reagents undergoes rearrangement to form amides. This is known as Beckmann's rearrangement.

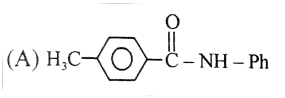


Mechanism :





Find out (X) :

A. 

B. 

C. $Ph - \overset{O}{\overset{||}{c}} - NH - Ph$

Answer: C

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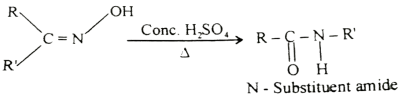
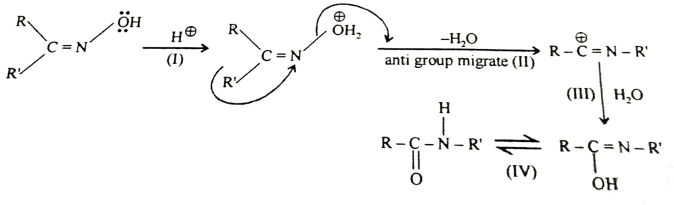
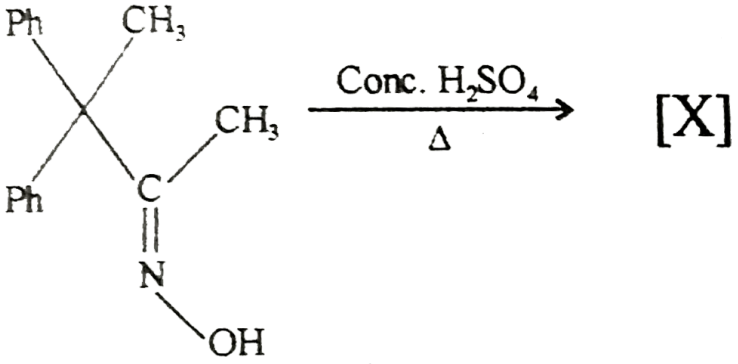
6. Ketoxine when heated with certain reagents undergoes rearrangement to form amides. This is known as Beckmann's rearrangement.

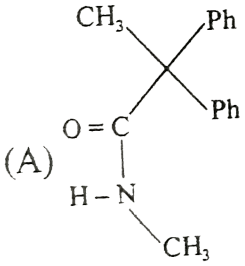


Mechanism :



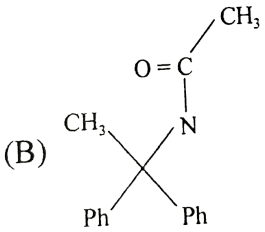


Find out (X) of the reaction:

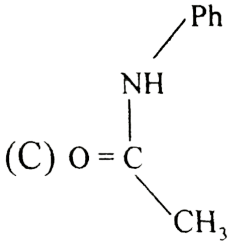


A.

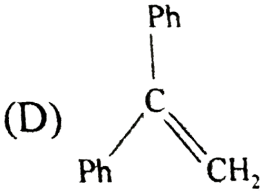
B.



C.



D.



Answer: D

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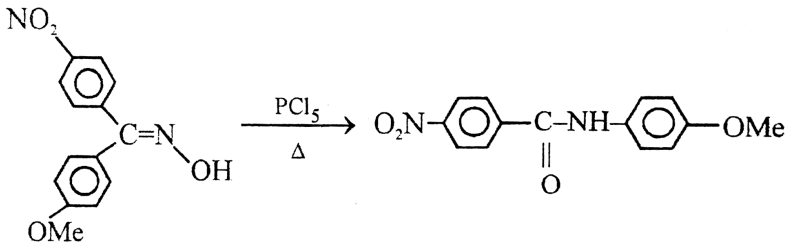
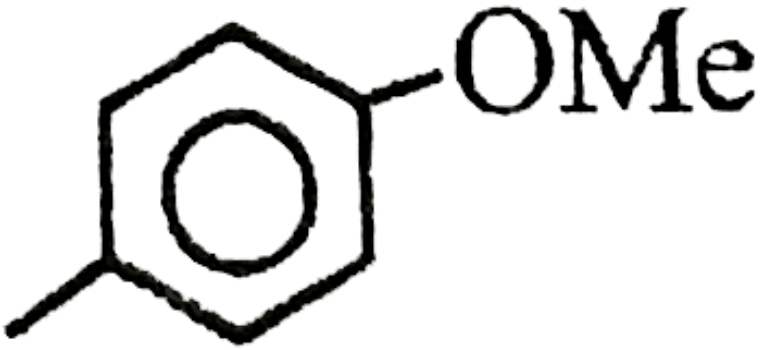
Exercise 2 Reasoning Type

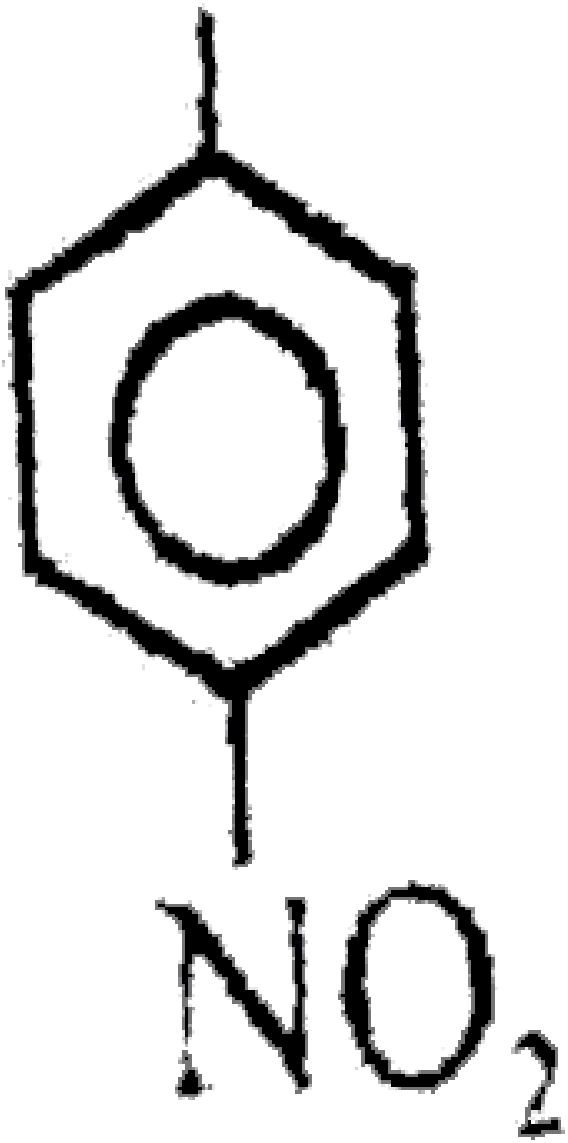
1. Statement -I :



Statement-II : Migratory aptitude of



group is greater than migratory aptitude of



group during

cation rearrangments.

A. If both Statement-I & Satement-II are True & the Statement-II is not a correct explanation of the Statement-I.

B. If both Statement-I & Statement-II are True but Statement-II is not a correct explanation of the Statement-II

C. If Statement-I is True but the Statement-II is False.

D. If Statement-I is False but the Statement-II is True.

Answer: D

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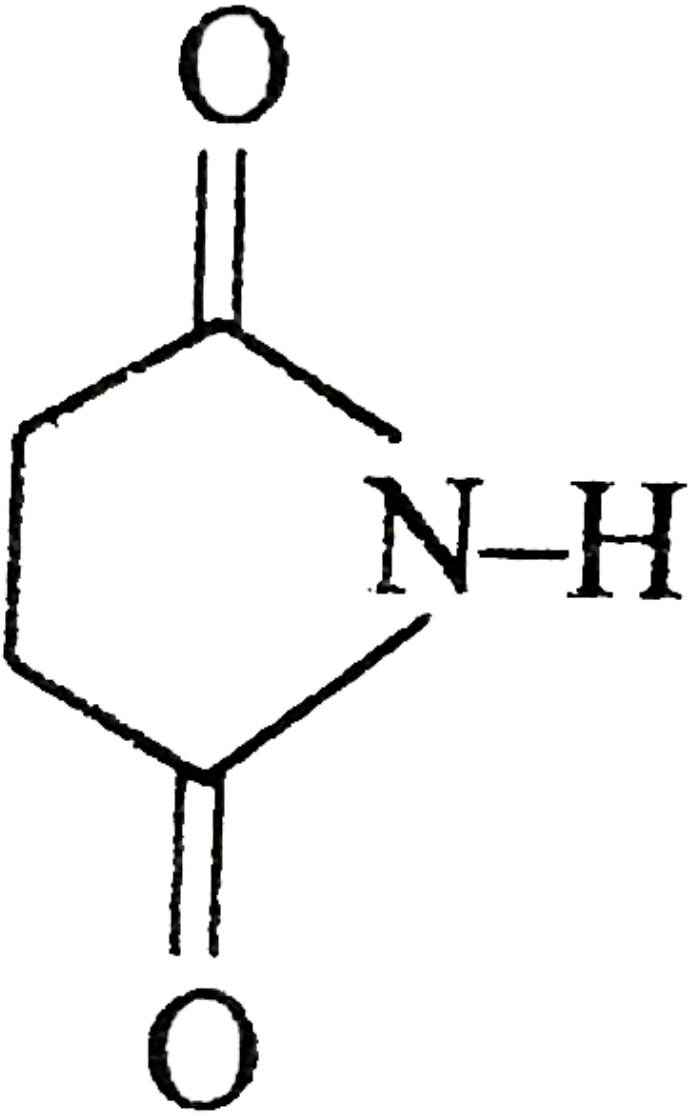
2. Statement -I :



does not give bromamide reaction.

Statement-II : secondary amides does not give bromamide reaction.

A. If both Statement-I & Satement-II are True&the Statement-II is not a correct explanation of the Statement-I.

B. If both Statement-I & Statement-II are True but Statement-II is not a correct explanation of the Statement-II

C. If Statement-I is True but the Statement-II is False.

D. If Statement-I is False but the Statement-II is True.

Answer: D

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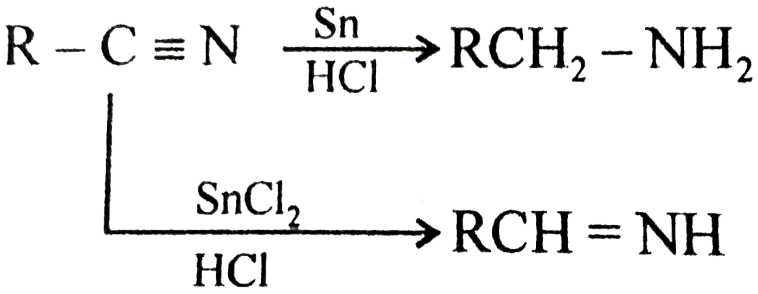

3. Statement-I

Statement-II : Sn can give maximum of 4 electron during reduciton, whereas $Sncl_2$ can give only 2.

A. If both Statement-I & Satement-II are True & but Statement-II is not a correct explanation of the Statement-I.

B. If both Statement-I & Statement-II are True but Statement-II is not a correct explanation of the Statement-II

C. If Statement-I is True but the Statement-II is False.

D. If Statement-I is False but the Statement-II is True.

Answer: B

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Exercise 2 Multiple Correct Choice Type

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

A. HNO_2

B. $CHCL_3$+NaOH

C. CS_2 and $HgCl_2$

D. H_2SO_4

Answer: A::B::C

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2. Which of the following reaciton can be used to make ethyl isocynide?

A. $CH_3CH_2NH_2 + CHCL_3 \xrightarrow[\triangle]{\text{KOH}}$

B. $CH_3CH_2Br + AgCN \rightarrow$

C. $CH_3CH_2 - NH - \underset{\underset{O}{||}}{C} - H \xrightarrow{POCl_3}$

D. $CH_3CH_2Br + KCN \rightarrow$

Answer: A::B::C

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3. By which pf the following reactions can methylcyanide be prepared?

A. $CH_3Br \xrightarrow[DMF]{\text{KCN}}$

B. $CH_3NH_2 + CHCl_3 \xrightarrow{\text{KOH}}$

C. $CH_3 - CH = N - OH \xrightarrow[\triangle]{P_2O_5}$

D. $CH_3 - \overset{\overset{O}{||}}{C} - NH_2 \xrightarrow[\triangle]{P_4O_{10}}$

Answer: A::C::D

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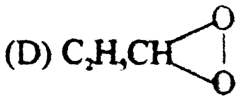
4. $C_6H_5 - CH_2 - I \xrightarrow[\triangle]{NaN_3}$ Products

Reaction is assumed to involve nitrene as intermediate , then varios possibe products are:

A. $C_6H_5CH_2NH_2$

B. $C_6H_5N = CH_2$

C. $C_6H_5CH = NH$

D. 

Answer: B::C

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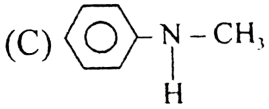
5. Which of the following amines, can give N-nitrosoamine on treatment with HNO_2?

A. 

B. $H_3C - \underset{CH_3}{\underset{|}{CH}} - NH_2$

C. 

D. 

Answer: A::C

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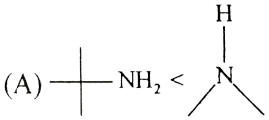
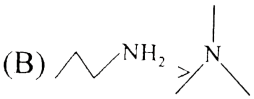
6. Choose the correct comparisons of basicity

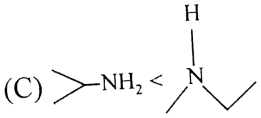
A.



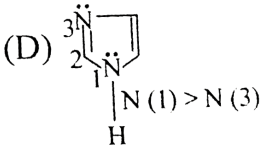
B.



C.



D.



Answer: A::B::C

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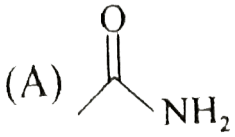
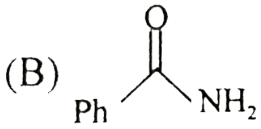
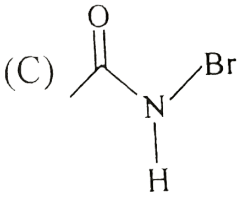
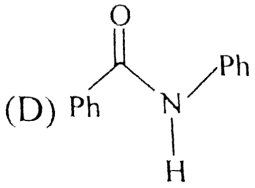
7. Which of the following will give Hofmann-Bromoamide reaction?

A. 

B. 

C. 

D. 

Answer: A::B::C

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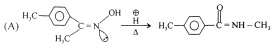
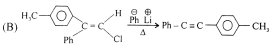
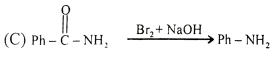
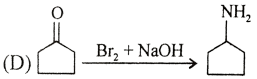
8. Which of the following reaction represents major products?

A. 

B. 

C. 

D. 

Answer: A::B::C

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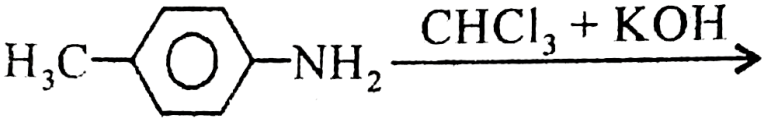
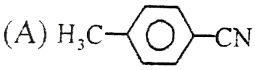
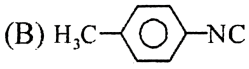
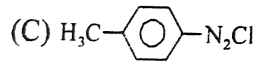
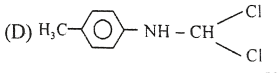
9. Which of the following products will not form by following reaction?



A. 

B. 

C. 

D. 

Answer: A::C::D

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10. $Ph - \overset{O}{\overset{||}{C}} - NH_2 + Ph - CH_2 - \overset{O}{\overset{||}{C}} - \overset{15}{N}H_2 \xrightarrow{\overset{\Theta}{OH + Br_2}} A + B$

Product A and B are:

A. $Ph - NH_2$

B. $Ph - CH_2 - \overset{15}{N}H_2$

C. $Ph - CH_2 - NH_2$

D. $Ph - \overset{15}{N}H_2$

Answer: A::B

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11. Reaction involves isocyanate as intermediate product

A. Curtius reaarangement

B. Lossen rearrangement

C. Schmidt rearrangment

D. Hafmann rearrangement

Answer: A::B::C::D

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12. Which are relateed with Curtius rearrangement?

A. NaN_3

B. $R - NH_2$

C. $R - \overset{O}{\overset{||}{C}} - Cl$

D. $R - \overset{O}{\overset{||}{C}} - OH$

Answer: A::B::C

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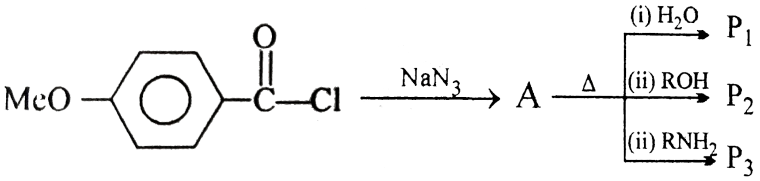
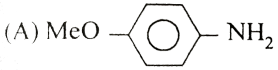
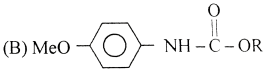
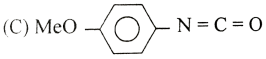


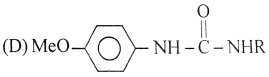
13.

$P_1, P_2, P_3, are:$

A. 

B. 

C. 

D. 

Answer: A::B::D

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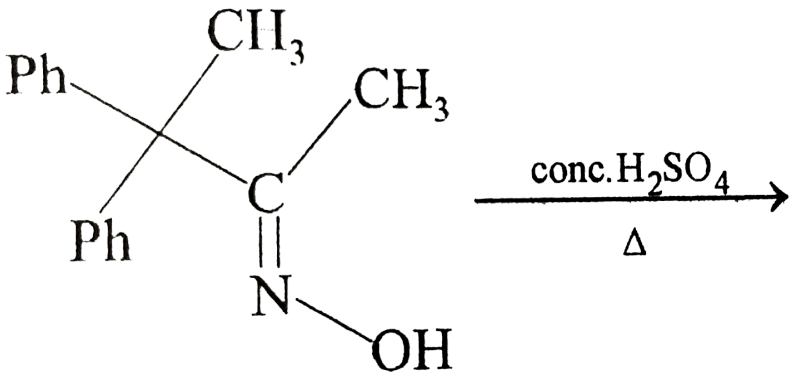
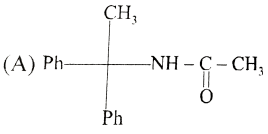
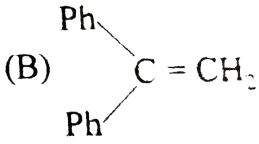
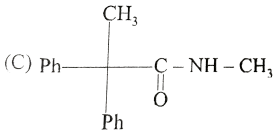


14. Product is:

A. 

B. 

C. 

D. CH_3CN

Answer: B::D

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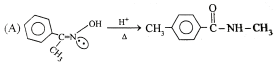
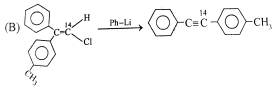
15. Which of the following reaction is not representing major product.

A. 

B. 

C. $Ph - \overset{O}{\overset{||}{C}} - NH_2 \xrightarrow[KOH]{Br_2} Ph - NH_2$

D. 

Answer: A::B::D

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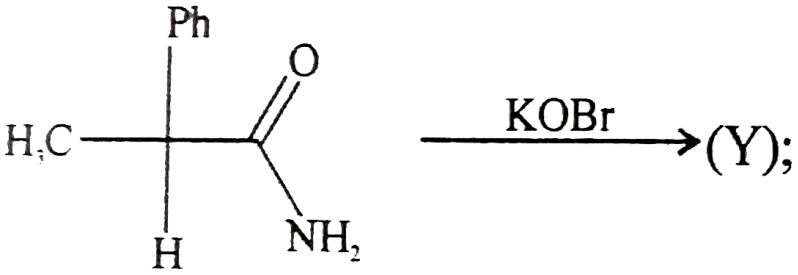
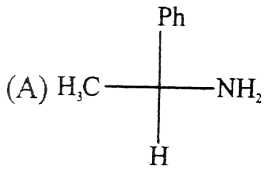
16. 

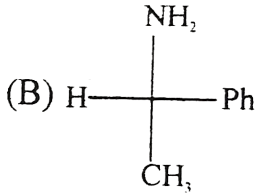
Product (Y)

of the reaction:

A.

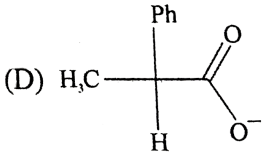


B.



C. Mixture Of A & B

D.



Answer: A::B

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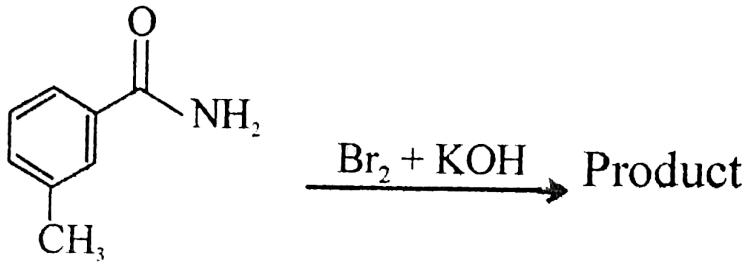
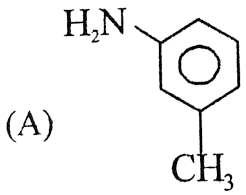
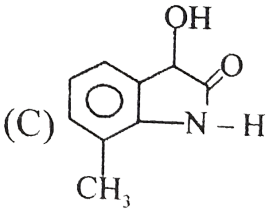
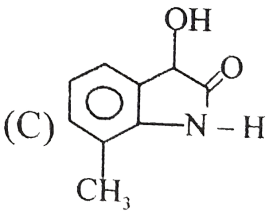
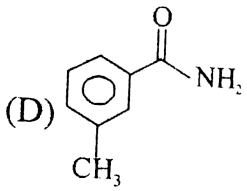
17. 

The final Product is:

A. 

B. 

C. 

D. 

Answer: A::B

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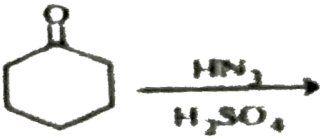
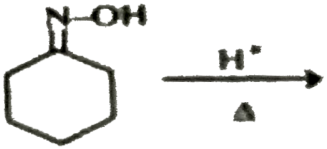
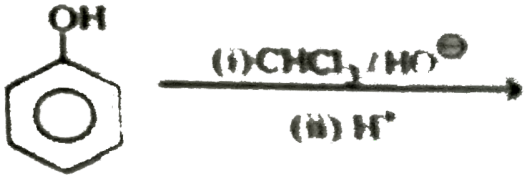
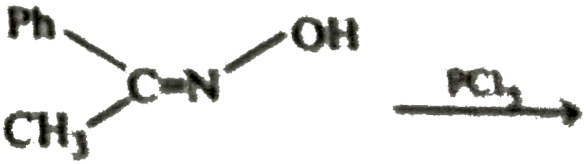
Exercise 2 Match The Column

Column B

(P) 

(Q) 

(R) 

(S) 

1.

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2.

Column I	Column II
$(A) R-\overset{O}{\overset{\|\|}{C}}-NH_2 \rightarrow R-CH_2NH_2$	(P) Schmidt reaction
$(B) R-\overset{O}{\overset{\|\|}{C}}-NH_2 \rightarrow R-NH_2$	$(Q) P_2O_5$
$(C) R-\overset{O}{\overset{\|\|}{C}}-NH_2 \rightarrow R-CN$	(R) Hofmann reaction
$(D) R-\overset{O}{\overset{\|\|}{C}}-N_3 \rightarrow RNH_2$	$(S) LiAlH_4$

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3.

	Column I (Name of Lab test)		Column II (Reagent)
(A)	Lucus test	(P)	NaOI
(B)	Haloform test	(Q)	$CUSO_4$ and potassium, Sodium Tartrate
(c)	Isocyanide test	(R)	$\left[Ag(NH_2)_2\right]^{A\overset{\Theta}{O}H}$
(D)	Tollen's test	(S)	$CHBr_3/KOH$
(E)	Fehling test	(T)	$HCL/ZnCl_2$

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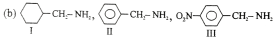
Exercise 3 Miscellaneous Exercise

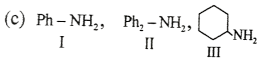
1. Compare the basicities

A.

$$CH_2 = \underset{I}{CH} - CH_2 - NH_2, CH_3 - \underset{II}{CH_2} - CH_2 - NH_2, CH \equiv \underset{I}{C}$$

$$-CH_2 - NH_2$$

B. 

C. 

D. $CH_3 - CH_2 - NH_2, CH_3 - \underset{II}{\overset{O}{\overset{||}{C}}} - NH_2, Ph - \underset{III}{\overset{O}{\overset{||}{C}}} - NH_2$

Answer: A::B::C::D

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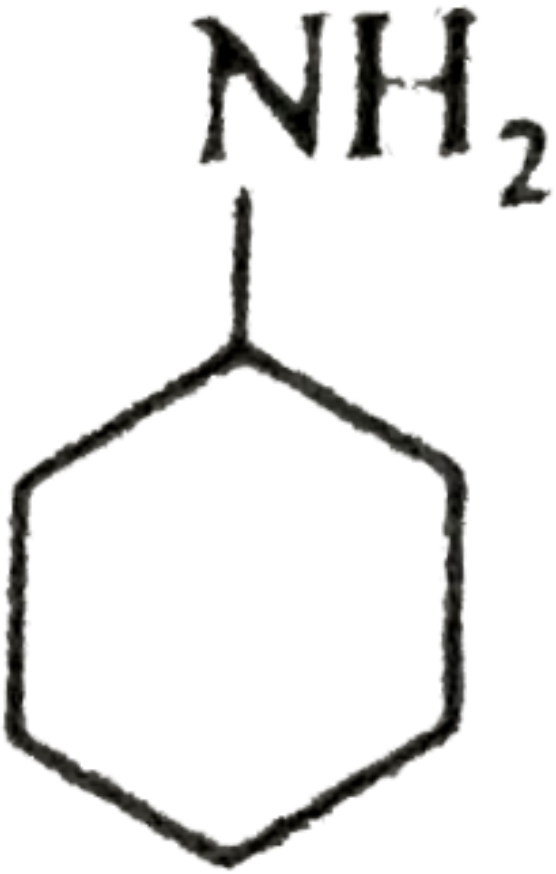

2.

$$\xrightarrow{3CH_3l}(A)\xrightarrow{Ag_2O}(B)\xrightarrow{\triangle}C+D+H_2O$$

What are A, B, C, D

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3. $\left[CH_3-CH_2-CH_2-\underset{\underset{CH_2CH_3}{|}}{\overset{\overset{Ch_3}{|}}{N}}-CH_3\right]^{\oplus} \overset{\ominus}{OH} \xrightarrow{\triangle}$

What are the product due to Hofmann elimination.

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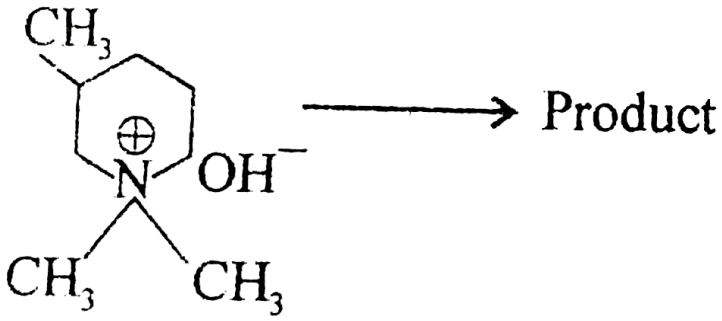
4. Haffmann's eliminaition product of 'A'



to Product

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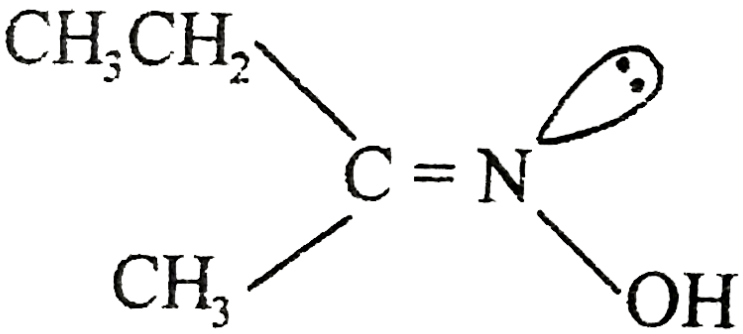

5.

$$\xrightarrow{H^+} (A) \xrightarrow{H_2 \frac{\emptyset}{H^+}} B + C$$

Find A, B, C

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6. Find the product

A. $CH_2 = CH_2$"" $\xrightarrow[\triangle]{N_3H}$

B. $CH_3 - CH = CH_2$ $\xrightarrow[\triangle]{N_3H}$

C. $C_6H_5 - \overset{O}{\overset{||}{C}} = Cl$ $\xrightarrow[H_2O]{Nan_3}$

D. $C_6H_5 - \overset{O}{\overset{||}{C}} - NH - OH \xrightarrow[H_2O]{H^+}$

Answer: A::B::C::D

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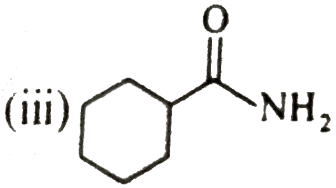
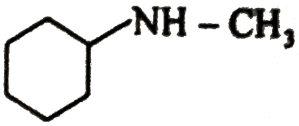
7. Complete the reaction

(i) $CH_3 - \overset{O}{\overset{||}{C}} - Cl \text{to} CH_3 - NH_2$

(ii) `CH_(3)-CH_(2)-NH_(2) "to"


N
H

(iii)  to 

(iii)

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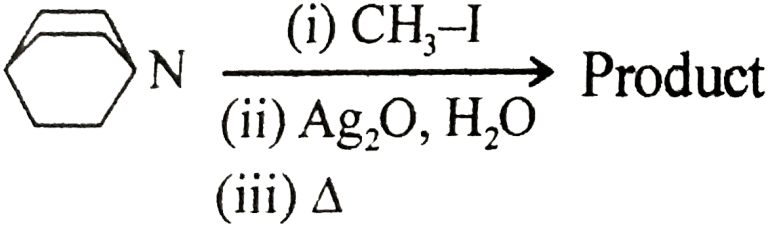

8.

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Exercise 4 Section 4

1. Acetamide is treated separaately with the following reagents Which one of these would give methylamine ?.

A. PCL_5

B. Sodalime

C. $NaOH + Br_2$

D. $hotconc.\ H_2SO_4$

Answer: C

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2. Carbylamine test is performed in alc . KOH by heating a mixture of :

A. Chloroform and silver powder

B. trihalogenated methane and a primary amine

C. an alkyl halide and a primary amine

D. an alkyl cyanide and a primary amine

Answer: B

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

A. $R - CO - NHBr$

B. $R - NHBr$

C. $R - N = C = O$

D. $R - CO.\ NBr_2$

Answer: A::C

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4. A positive carbylamine test is given by:

A. N.N-dimethylaniline

B. 2,4-dimethylaniline

C. N-methyl-O-methylaniline

D. P-mehtylbenzyline

Answer: D

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5. In the following reaction,

$CH_3NH_2 + CHCl_3 + KOH \rightarrow$ Nitrogen containing compound $+ KCl + H_2O$. The nitrogen containing compound is

A. $CH_3 - C \equiv N$

B. $CH_3 - NH - CH_3$

C. $CH_3 - \overset{-}{N} \equiv \overset{+}{C}$

D. $CH_3 - \overset{+}{N} \equiv \overset{-}{C}$

Answer: D

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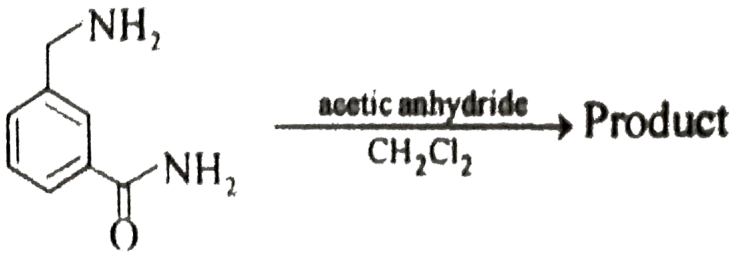
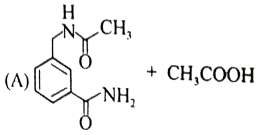
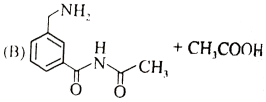
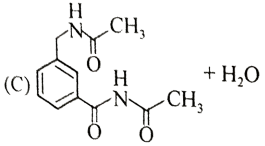
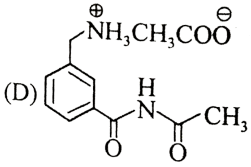
6. In this reaction shown below, the major product(s) formed is //are



A. 

B. 

C. 

D. 

Answer: A

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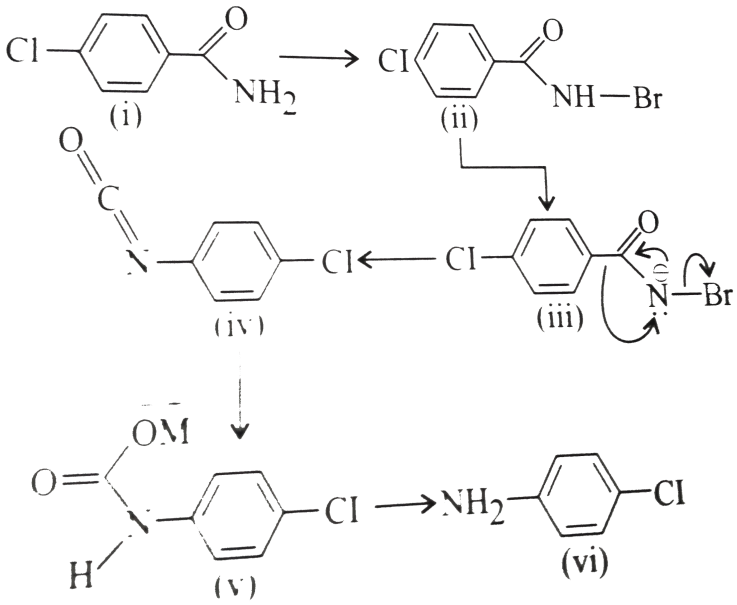
Exercise 4 Section 4 Paragraph Question

1. $RCONH_2$ is converted into RNH_2 by means of Hofmann bromamide degradation.



In this $RCONHBr$ is formed form which this reaction has derived its name. Electron-donating group at phenyl activities the reaction. Hofmann degradation reaction is an intramolecular reaction.

Hoe can the conversation of $(i) \rightarrow (ii)$ be brought about ?

A. KBr

B. $KBr + CH_3ONa$

C. KBr+KOH

D. $Br_2 + KOH$

Answer: D

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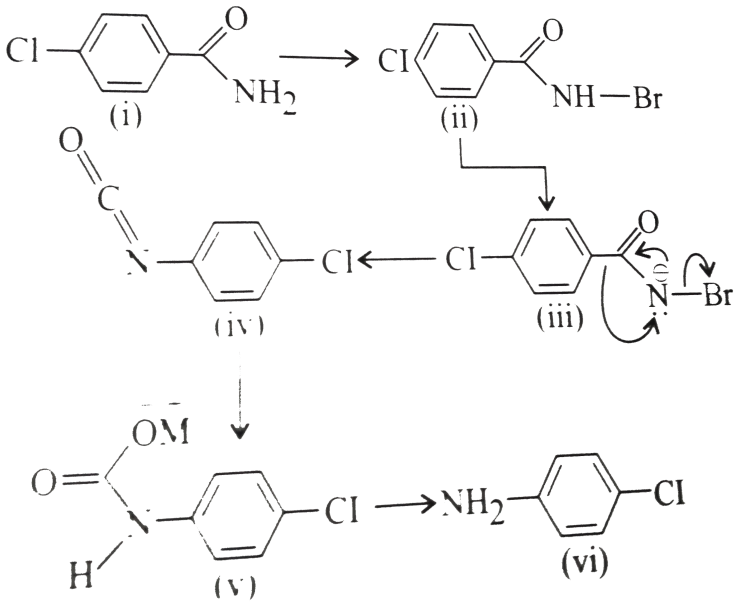
2. $RCONH_2$ is converted into RNH_2 by means of Hofmann bromamide degradation.



In this $RCONHBr$ is formed form which this reaction has derived its name. Electron-donating group at phenyl activities the reaction. Hofmann degradation reaction is an intramolecular reaction.

Which is the rate-determining step in Hofmann bromamide degradation ?

A. Formation of (i)

B. Formation of (ii)

C. Formation of (iii)

D. Formation of (iv)

Answer: D

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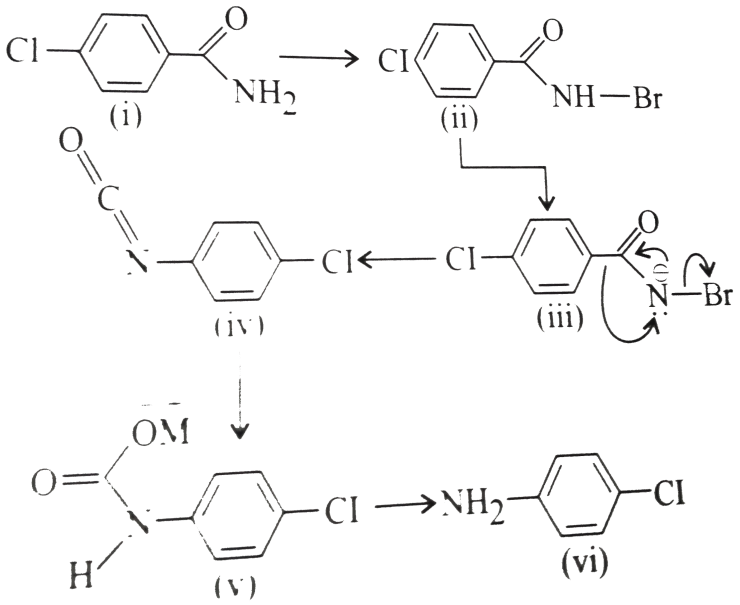
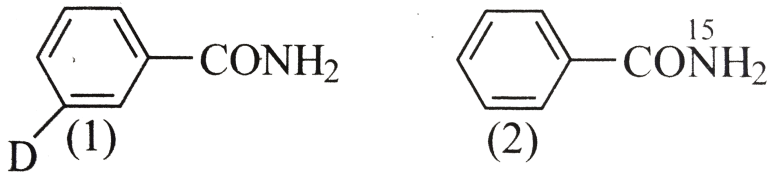
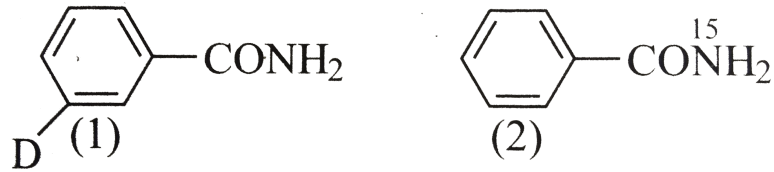
3. $RCONH_2$ is converted into RNH_2 by means of Hofmann bromamide degradation.

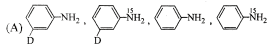


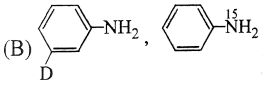
In this $RCONHBr$ is formed form which this reaction has derived its name. Electron-donating group at phenyl activities the reaction. Hofmann degradation reaction is an intramolecular reaction.

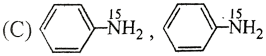
What are the constituent amines formed when the mixture of (1) and (2) undergoes Hofmann bromamide degradation ?

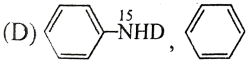
(1) 

(2) 

A. 

B. 

C. 

D. 

Answer: B

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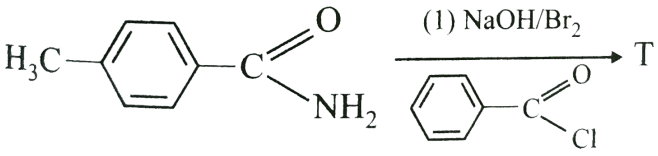
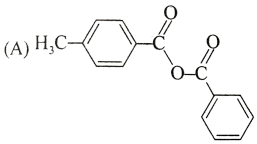
4. In the reaction, the structure of the product T is:



A.



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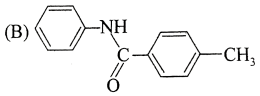
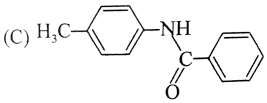
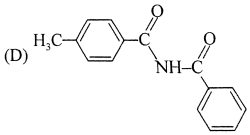


C.



D.



Answer: C

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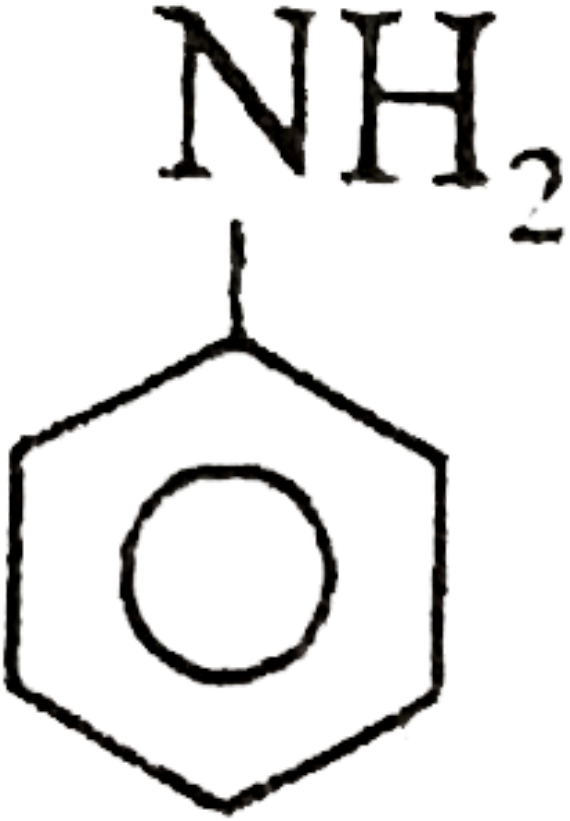
Exercise 4 Section 4 Section B Jee Main Previous Question

1. In this chemical reactions:



$\xrightarrow[HCl\,,278k]{NaNO_2}$ A $\xrightarrow{HBF_4}$ B the compounds 'A' and 'B'

respectively are

A. benzene diazonium chloride and fluorobenzene

B. nitrobenzene and chloeobenzene

C. nitrobenzene and fluorobenzene

D. phenol and benzene

Answer: A

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

A. 5

B. 4

C. 6

D. 2

Answer: A

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

A. Methylamine

B. Ammonia

C. Phosgene

D. Methylisocyanate

Answer: D

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4. An orgainc compound A upon reacting with NH_3 gives B On heating B give C. C in presence KOH reacts with Br_2 to yield $CH_3CH_2NH_2A$ is .

A. $CH_3CH_2CH_2COOH$

B. $CH_3\underset{\underset{CH_3}{|}}{CH} - COOH$

C. CH_3CH_2COOH

D.

Answer: C

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5. On heating an aliphatic primary amine with chloroform and enthanolic potassium hydrozide, the organic compound formed is

A. an alkanediol

B. an alkyl cyanide

C. an alkyl isocyanide

D. an alkanol

Answer:

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