



CHEMISTRY

PHYSICAL, INORGANIC, AND ORGANIC CHEMISTRY

NITROGEN CONTAINING COMPOUNDS

Organic Chemistry Nitrogen Containing Compounds

1. The positive carbylamine test is not given by

- A. aniline
- B. 2, 4 – dimethyl aniline
- C. *N* – methyl – *O* – methylene
- D. *p* – methyl benzylamine

Answer: C



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2. Which of the following compound gives secondary amine on reduction.

- A. Alkyl Nitrite
- B. Carbylamine
- C. Alkylcyanide
- D. secondary nitro compound

Answer: 2

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3. Hinsber's reagent is used to distinguish between

- A. 1° and 2° amine
- B. 2° and 3° amine
- C. 1° and 3° amine

D. All of these

Answer: 4

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4. The end product of the reaction,

Ethyl amine $\xrightarrow{HNO_2}$ (A) $\xrightarrow{PCl_5}$ (B) \xrightarrow{KCN} (C) (C) is,

A. Propanenitrile

B. Trethylamine

C. diethylamine

D. propylamine

Answer: 1

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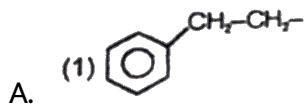
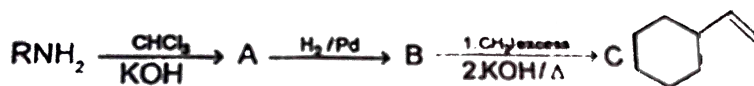
5. In which of the following reaction migration of alkyl group from ''C'' to ''N'' terminus is not occurring

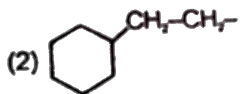
- A. Pinacol-Pinacolone rearrangement
- B. Curtius rearrangement
- C. Lossen Rearrangement
- D. Beckmann Rearrangement

Answer: 1

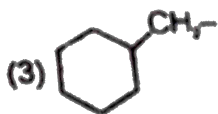
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6. The R in the given reaction sequence is —

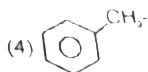




B.



C.

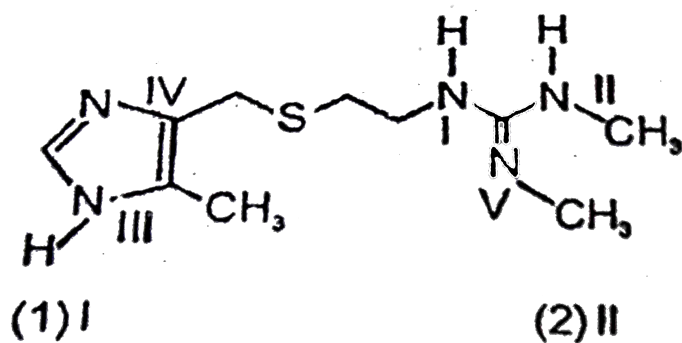


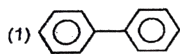
D.

Answer: 2

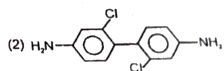
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7. Identify the product P formed in the given reaction sequence.

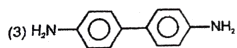




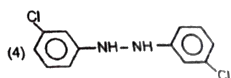
A.



B.



C.

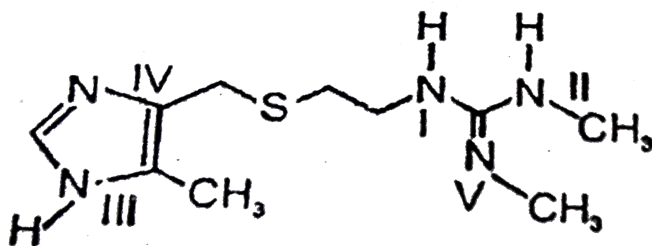


D.

Answer: 2

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8. The Cimetidine has several nitrogen atoms in its structure. Identify the most basic atom of given cimetidine derivative.



A. I

B. II

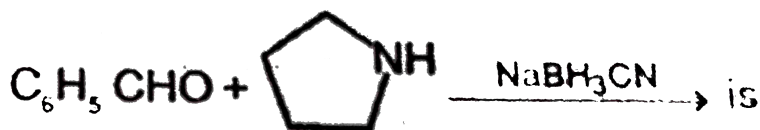
C. III

D. V

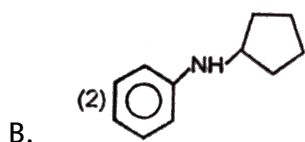
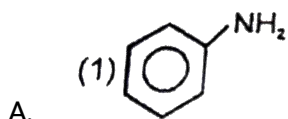
Answer: 4

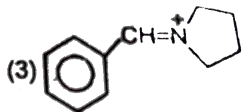
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9. The product of given reaction

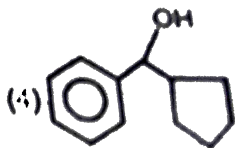


is





C.

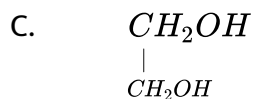
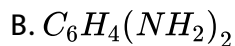
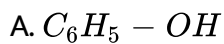


D.

Answer: C

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10. Which of the following is capable of forming a zwitter ion ?



Answer: 4



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11. *p* - chloroaniline and anilinium hydrogen chloride can be distinguished by

- A. Sandmeyer reaction
- B. Carbylamine reaction
- C. Hinsberg's reaction
- D. $AgNO_3$

Answer: D

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

- A. Suppress the concentration of free aniline for coupling

B. Suppress hydrolysis of phenol

C. Ensure a stoichiometric amount of nitrous acid

D. Neutralize the base liberated

Answer: 1

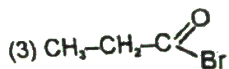
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13. Starting from propanoic acid, the following reaction were carried acid

$\xrightarrow{SOCl_2} X \xrightarrow{NH_3} Y \xrightarrow{Br_2 + KOH} Z$ What is the compound?

A. $CH_3 - CH_2 - Br$

B. $CH_3 - CH_2 - NH_2$



C.

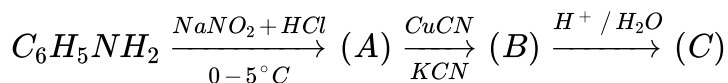
D. $CH_3 - CH_2 - CH_2 - NH_2$

Answer: 2

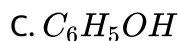
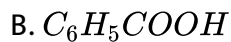
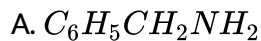


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14. In the reaction,



the product (C) is



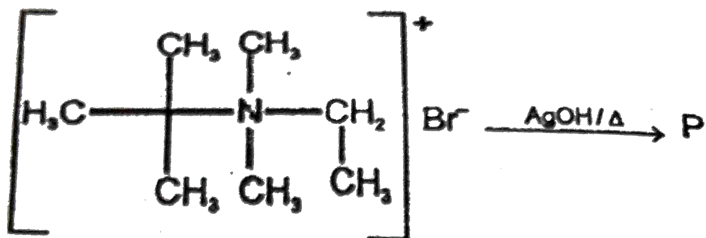
D. none of these

Answer: 2



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15. In the given reaction product P is :

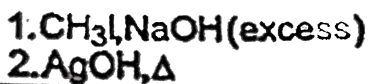
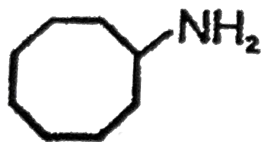


- A. 1 – Butane
- B. 2 – Butene
- C. 2 – Methylpropene
- D. Ethane

Answer: 4



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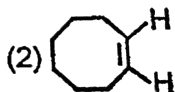
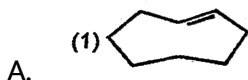


P

16.

P (major

product), P is



C. Phenylethene

D. Methylene Cycloheptane

Answer: 2



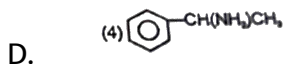
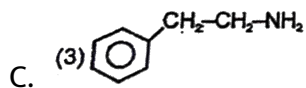
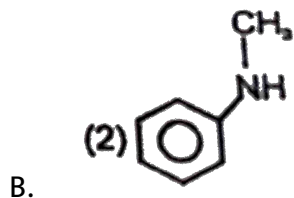
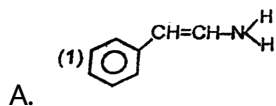
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17. Identify A, $\text{C}_6\text{H}_{11}\text{N}$, for which the given information is available .

(i) Baeyer reagent - No test (ii) $\text{Ph} - \text{SO}_2\text{Cl} \rightarrow$ acidic compound soluble

(ii) Dissolves in aq. HCl

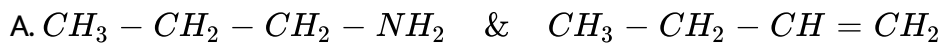
(iv) Optically active



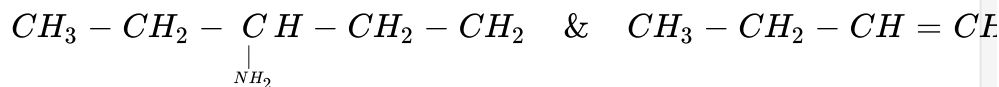
Answer: 4

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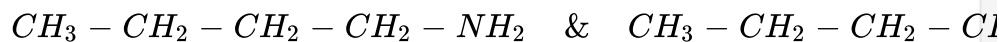
18. An optically inactive amine (*A*) is methylated with excess of CH_3I and there after reacted with $AgOH$ to form alkene (*B*). The alkene *B* after ozonolysis gives $HCHO$ and $CH_3CH_2CH_2CHO$. *A* and *B* in the reaction are respectively.



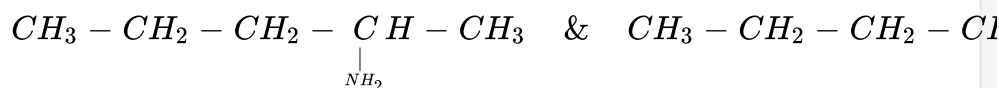
B.



C.



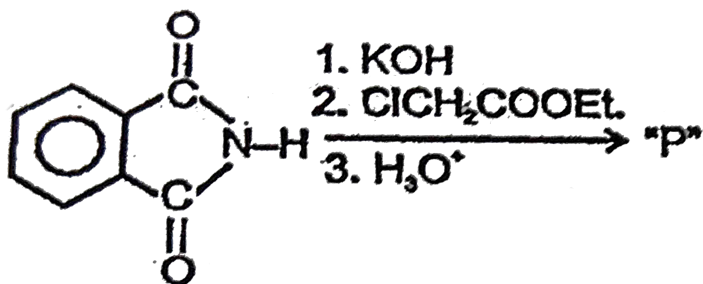
D.

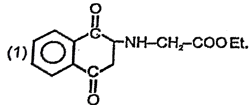


Answer: 3

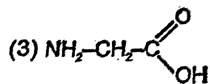
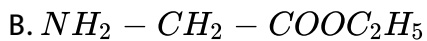
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19. The product P formed in the given reaction sequence is .

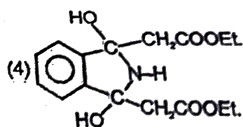




A.



C.



D.

Answer: C

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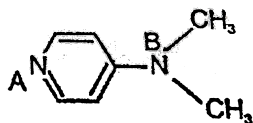
20. Identify the correct statement.



A.




B.



C.

A is more basic than B

D.

(4) In nicotine  N_2 is more basic than N_1

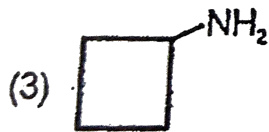
Answer: 3

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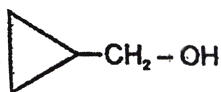
21. Which statement is incorrect.

A. Fluoro benzene can be synthesized in the laboratory from aniline by diazotisation followed by heating with BF_3

B. Quarternary Ammonium hydroxides having β - hydrogen atom give hlfmann elimination on pyrolysis.



C. on reaction with HNO_2 produces



D. Benzyl amine on reaction with $NaNO_2/HCl$ followed by β -

Naphthol in slight basic medium forms a coloured dyo.

Answer: 4

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22. What will be the major product when 2 - Aminopropane is treated with nitrous acid ?

A. 1 - Propanol

B. 2 - Propanol

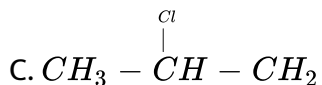
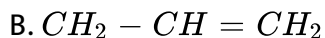
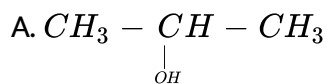
C. Propene

D. Cyclopropane

Answer: 2

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23. Which of the following product (s) will be obtained when isopropylamine is treated with sodium nitrite and hydrochloric acid ?



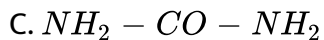
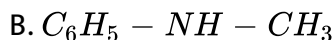
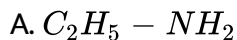
D. All of these

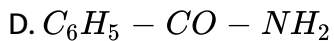
Answer: 4



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24. Which of the following compounds will give $N_2(g)$ on treatment with HNO_2



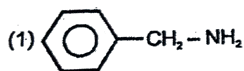


Answer: 1

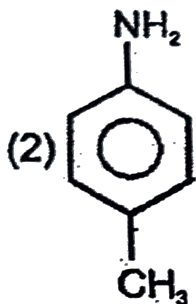
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25. Compound (x) ($m. f = C_7H_8N$), on reaction with $NaNO_2$ and conc. HCl at $0^\circ C$ followed by β - naphthol gives orange coloured dye.

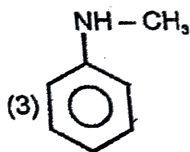
Compound (x) is :



A.



B.



C.

D. All of these

Answer: B

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26. Pyridine is less basic than triethylamine because .

A. Pyridine has aromatic character

B. Nitrogen in pyridine is sp^2 hybridised

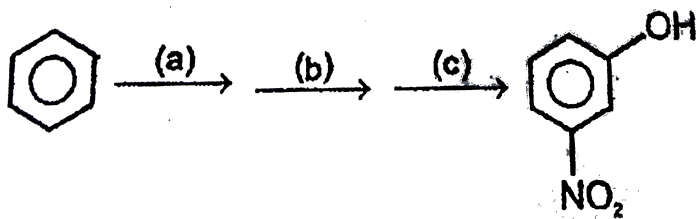
C. Pyridine is a cyclic system

D. In pyridine, lone pair of nitrogen is delocalised

Answer: B

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27. The reagents are



- A. $\xrightarrow{(a) \text{ Cl}_2 / \text{Fe}}$ $\xrightarrow{(b) \text{ HNO}_3 + \text{H}_2\text{SO}_4, \Delta}$ $\xrightarrow{(c) \text{ NH}_4\text{HS}}$
- B. $\xrightarrow{(a) \text{ HNO}_3 + \text{H}_2\text{SO}_4, \Delta}$ $\xrightarrow{(b) \text{ NH}_4\text{HS}}$ $\xrightarrow{(c) \text{ NaNO}_2 / \text{HCl} / \Delta \text{ boil}}$
- C. $\xrightarrow{(a) \text{ HNO}_3 + \text{H}_2\text{SO}_4}$ $\xrightarrow{(i) \text{ Cl}_2 / \text{Fe} \quad (ii) \text{ NaOH} / \Delta \quad (b)}$ $\xrightarrow{(c) \text{ Sn} / \text{HCl}}$

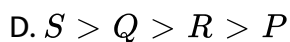
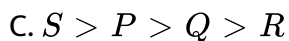
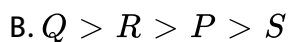
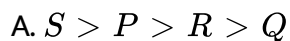
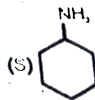
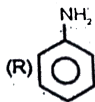
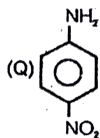
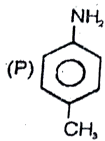
D. All are correct.

Answer: 2



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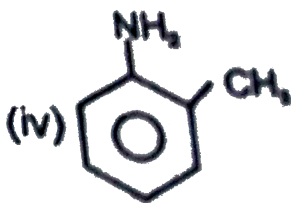
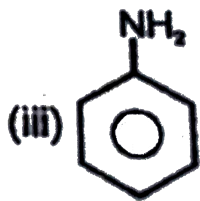
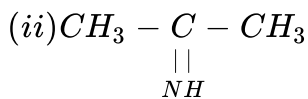
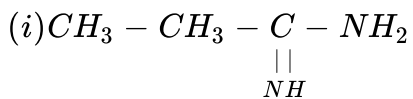
28. Arrange following Amines for rate of reaction with $CHCl_3 + KOH$?



Answer: 1

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29. Which of the following is correct order of basic strength for the given compounds ?



(3) $iv > ii > iii > i$

(4) $i > ii > iv > iii$

A. $I > ii > iii > iv$

B. $iv > iii > ii > i$

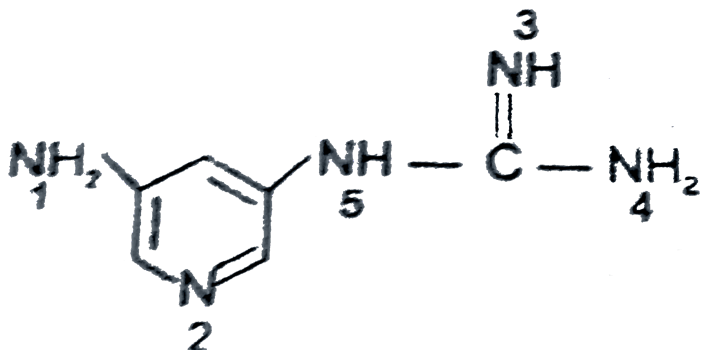
C. $iv > ii > iii > i$

D. $I > ii > iv > iii$

Answer: A

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30. Which nitrogen atom is most basic ?



A. 3

B. 4

C. 5

D. 2

Answer: 1

 Watch Video Solution