

**CHAPTER - ORGANIC COMPOUNDS CONTAINING NITROGEN  
COMPOUNDS  
(TRUE/FALSE TYPE)**

1. Amines act as Lewis bases. (True)
2. In aqueous solution, trimethylamine is more basic than methylamine. (False)
3. p- Bromoaniline is formed when aniline is treated with bromine water. (False)  
(2, 4, 6-Tribromoaniline is formed)
4. Azo dye test can be used to distinguish aromatic primary amines from aliphatic primary amines (True)
5. Catalytic reduction of carbylamines always gives primary amines. (False)  
(give secondary amines)
6. Secondary amines evolve  $N_2$  with nitrous acid. (False)
7. Acetanilide is less basic than aniline. (True)
8. Gabriel phthalimide synthesis is used for the preparation of aromatic primary amines. (False)
9. Tertiary amines dissolve in nitrous acid to form corresponding salts. (True)
10. N-Methylbenzamide on heating with aqueous solution of NaOH and  $Br_2$  gives n-methylaniline. (False)

**(TWO OR THREE MARKS QUESTIONS)**

1. Which is more basic, aliphatic amines or ammonia and why?
2. Why do primary amines have higher boiling point than tertiary amines?
3. Out of ammonia ( $NH_3$ ) and  $C_2H_5NH_2$  which is more basic and why?
4. What is carbylamine reaction ?
5. Write a short note on diazotisation.
6. Write short note on Gabriel Phthalimide synthesis.
7. Why do primary amines have higher boiling point than tertiary amines
8. Aniline dissolves in aqueous HCl. Why?
9. Arrange the following in increasing order of base strength in gas phase:  $(C_2H_5)_3N$ ,  $C_2H_5NH_2$ ,  $(C_2H_5)_2NH$
10. Out of  $CH_3NH_2$  and  $CH_3OH$ , which has higher boiling point ?

11. Why secondary amines are more basic than primary amines
12. Why methylamine has less boiling point than methanol ?
13. How will you convert Aniline to benzene diazonium chloride ?
14. How will you convert benzene diazonium chloride to bromobenzene ?
15. Give one example of Gattermann reaction.

**(THREE MARKS QUESTIONS)**

1. Write a Hinsberg's test to distinguish between 1°, 2° and 3° amines.
2. Write the reaction of benzene diazonium chloride with. (i) water (ii) KI (iii) CuCN
3. Write the reaction of benzene diazonium chloride with. (i) CuBr/HBr (ii) CuCl/HCl (iii) Aniline
4. Write the reaction of benzene diazonium chloride with. (i) HNO<sub>2</sub> (ii) Fluoro boric acid (iii) Phenol
5. Write short note on coupling reactions.
6. Give reasons : (i) Aniline does not undergo Friedal-Crafts reaction. (ii) Aromatic primary amines cannot be prepared by Gabriel's phthalimide synthesis. (iii) Aliphatic amines are stronger bases than ammonia
7. Arrange the following in increasing order of boiling points : (CH<sub>3</sub>)<sub>3</sub>N, C<sub>2</sub>H<sub>5</sub>OH, C<sub>2</sub>H<sub>5</sub>NH<sub>2</sub>
8. Write the reaction involved in the Hoffmann bromamide degradation reaction.
9. Write the reactions involved in the following : (i) Hofmann bromamide degradation reaction (ii) Diazotisation (iii) Gabriel phthalimide synthesis
10. Give reasons : (i) (CH<sub>3</sub>)<sub>2</sub>NH is more basic than (CH<sub>3</sub>)<sub>3</sub>N in an aqueous solution. (ii) Aromatic diazonium salts are more stable than aliphatic diazonium salts.
11. Give reasons for the following: (i) Aniline does not undergo Friedal-Crafts reactions. (ii) (CH<sub>3</sub>)<sub>2</sub>NH is more basic than (CH<sub>3</sub>)<sub>3</sub>N in an aqueous solution. (iii) Primary amines have higher boiling point than tertiary amines
12. Arrange the following in increasing order of boiling points : (CH<sub>3</sub>)<sub>3</sub>N, C<sub>2</sub>H<sub>5</sub>OH, C<sub>2</sub>H<sub>5</sub>NH<sub>2</sub>
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14. Write the reactions involved in the following : (i) Hofmann bromamide degradation reaction (ii) Diazotisation (iii) Gabriel phthalimide synthesis
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16. Give reasons for the following: (i) Aniline does not undergo Friedal-Crafts reactions. (ii) (CH<sub>3</sub>)<sub>2</sub>NH is more basic than (CH<sub>3</sub>)<sub>3</sub>N in an aqueous solution. (iii) Primary amines have higher boiling point than tertiary amines
17. How will you convert the followings: (i) Nitrobenzene into aniline, (ii) Ethanoic acid into methanamine (iii) Aniline into N-phenylethanamide (write the chemical equations involved)

18. Give reasons : (i) Aniline does not undergo Friedal-Crafts reaction.  
(ii) Aromatic primary amines cannot be prepared by Gabriel's phthalimide synthesis.  
(iii) Aliphatic amines are stronger bases than ammonia.
19. Write the reaction involved in the Hoffmann bromamide degradation reaction.
20. Give one chemical test to distinguish between the compounds of the following pairs : (i)  $\text{CH}_3\text{NH}_2$  and  $(\text{CH}_3)_2\text{NH}$  (ii) Aniline and Ethanamine (b) Why aniline does not undergo Friedel-Crafts reaction ?
21. (a) Write the reactions involved in the following : (i) Hofmann bromamide degradation reaction (ii) Diazotisation (iii) Gabriel phthalimide synthesis
22. Give reasons : (i)  $(\text{CH}_3)_2\text{NH}$  is more basic than  $(\text{CH}_3)_3\text{N}$  in an aqueous solution.
23. Aromatic diazonium salts are more stable than aliphatic diazonium salts
24. Write the chemical equations involved in the following reactions: (i) Hoffmann- bromoamide degradation reaction (ii) Carbylamines reaction
25. How will you convert the followings: (i) Nitrobenzene into aniline, (ii) Ethanoic acid into methanamine (iii) Aniline into N-phenylethanamide (write the chemical equations involved)  
(a) How will you distinguish between the following pairs of compounds : (i) Aniline and Ethanamine (ii) Aniline and N-methylaniline (b) Arrange the following compounds in decreasing order of their boiling points : Butanol, Butanamine, Butane