

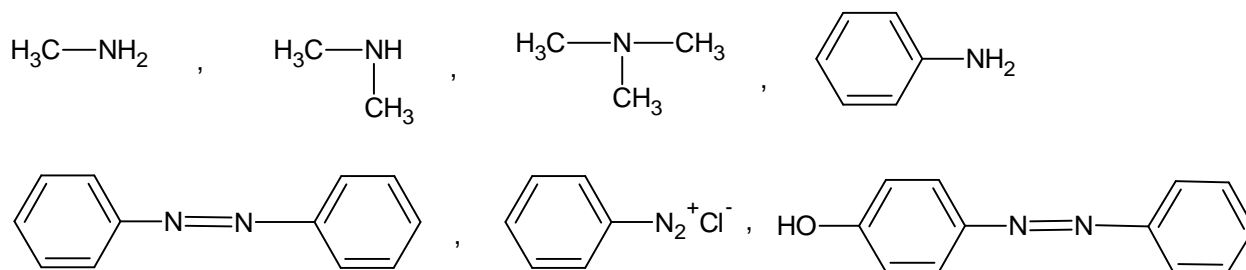
SINGLE CORRECT OPTION TYPE

- In the estimation of nitrogen by Kjeldahl's method, 2.8 gm of an organic compound required 20 millimole of H_2SO_4 for the complete neutralisation of NH_3 gas evolved. The percentage of nitrogen in the sample is
(A) 20% (B) 10% (C) 40% (D) 30%
- 0.3 gm of platinichloride of an organic diacidic base left 0.09 gm of platinum on ignition. The molecular weight of the organic base is
(A) 120 (B) 240 (C) 180 (D) 60
- 0.5 gm of an organic substance containing phosphorous was heated with conc. HNO_3 in the Carius tube. The phosphoric acid thus formed was precipitated with magnesia mixture (MgNH_4PO_4) which on ignition gave a residue of 1.0 gm of magnesium pyrophosphate ($\text{Mg}_2\text{P}_2\text{O}_7$). The percentage of phosphorous in the organic compound is
(A) 55.85% (B) 29.72% (C) 19.18% (D) 20.5%
- An organic compound containing sulphur is estimated by Carius method in which fuming HNO_3 is used to convert S into
(A) SO_3^{2-} (B) SO_4^{2-} (C) SO_3 (D) SO_2
- In Liebig's method for the estimation of C and H, if the compound also contains halogens, which of the following is kept near the exit of the combustion tube?
(A) silver wire (B) PbCrO_4 (C) both (A) and (B) (D) Cu gauge
- In Liebig's method for the estimation of C and H, if the compound also contains both halogens and S, which of the following is kept near the exit of the combustion tube?
(A) silver wire (B) PbCrO_4 (C) both (A) and (B) (D) Cu gauge
- In Liebig's method for the estimation of C and H, if the compound also contains N, which of the following is kept near the exist of the combustion tube?
(A) silver wire (B) PbCrO_4 (C) both (A) and (B) (D) Cu gauge
- A compound (60 gm) on analysis gave C = 24gm, H = 4gm, and O = 32gm. Its empirical formula is
(A) $\text{C}_2\text{H}_2\text{O}$ (B) $\text{C}_2\text{H}_4\text{O}_2$ (C) CH_2O (D) CH_2O_2
- Prussian blue colour in the detection of nitrogen in Lassaigne's test is due to the formation of
(A) $\text{Fe}_2[\text{Fe}(\text{CN})_6]$ (B) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ (C) $\text{Fe}_3[\text{Fe}(\text{CN})_6]_2$ (D) $\text{Fe}[\text{Fe}(\text{CN})_6]$
- Violet colour in the detection of sulphur with sodium nitroprusside is due to the formation of
(A) $\text{Na}_3[\text{Fe}(\text{CN})_5\text{NOS}]$ (B) $\text{Na}_4[\text{Fe}(\text{CN})_5\text{NOS}]$
(C) $\text{Na}_4[\text{Fe}(\text{CN})_4\text{NOS}]$ (D) $\text{Na}_2[\text{Fe}(\text{CN})_5\text{S}]$
- An organic compound containing N, S and O as extra elements is fused with metallic sodium and then extracted with distilled water. Which species is not present in the Lasaigne's extract?
(A) NO_3^- (B) CN^- (C) CNS^- (D) S^{2-}

12. The Lassaigne's extract is boiled with dil. HNO_3 before testing for halogens because
 (A) AgCN is soluble in HNO_3 (B) silver halides are soluble in HNO_3
 (C) NaCN and Na_2S are decomposed by HNO_3 (D) Ag_2S is soluble in HNO_3
13. Liquid benzene (C_6H_6) burns in oxygen according to $2\text{C}_6\text{H}_6(\text{l}) + 15\text{O}_2(\text{g}) \rightarrow 12\text{CO}_2(\text{g}) + 6\text{H}_2\text{O}$
 How many litres of O_2 at STP are needed for complete combustion of 39 gm of liquid benzene?
 (A) 11.2 litres (B) 74 litres (C) 84 litres (D) 22.4 litres
14. A compound which does not give a positive test in Lassaigne's test for nitrogen is
 (A) glycine (B) hydrazine (C) urea (D) phenyl hydrazine
15. The catalyst used in Kjeldahl's method for the estimation of nitrogen is
 (A) copper (B) magnesium (C) mercury (D) sodium
16. The concentration of C = 85.45% and H = 14.55% is not obeyed by the formula:
 (A) C_4H_8 (B) C_2H_4 (C) C_2H_6 (D) CH_2
17. The Prussian blue colour obtained during the test of nitrogen by Lassaigne's test is due to the formation of
 (A) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ (B) $\text{Fe}_2[\text{Fe}(\text{CN})_6]$ (C) $\text{Fe}_3[\text{Fe}(\text{CN})_6]_4$ (D) $\text{Na}_4[\text{Fe}(\text{CN})_6]$
18. Black precipitate in the detection of sulphur with lead acetate and acetic acid is due to the formation of
 (A) Pb_2S (B) PbS (C) PbS_2 (D) PbSO_4
19. Blood-red colour in the detection of both N and S in Lassaigne's extract is due to the formation of
 (A) $\text{Fe}(\text{CNS})_2$ (B) $\text{Fe}(\text{CNS})_3$ (C) $\text{K}_4[\text{Fe}(\text{CN})_6]$ (D) $\text{K}_3[\text{Fe}(\text{CN})_6]$
20. Yellow precipitate in the detection of phosphorous when an organic compound is heated with Na_2O_2 and then boiled with conc. HNO_3 followed by the addition of ammonium molybdate is due to the formation of:
 (A) $(\text{NH}_4)_3 \cdot \text{PO}_4 \cdot 12\text{MoO}_3$ (B) $(\text{NH}_4)_3 \cdot \text{PO}_4 \cdot 6\text{MoO}_3$
 (C) $(\text{NH}_4)_3 \cdot \text{PO}_4 \cdot 12\text{MoO}_2$ (D) $(\text{NH}_4)_3 \cdot \text{PO}_4 \cdot 6\text{MoO}_2$

INTEGER TYPE

21. How many of the following compounds give Lassaigne's test (in "N" detection)



22. How many of the following compounds are coloured?
 $\text{Na}_3[\text{Fe}(\text{ONS Na})(\text{CN})_5]$; $(\text{NH}_4)_3 \text{PO}_4 \cdot 12\text{MoO}_3$; $(\text{NH}_4)_2 \text{MoO}_4$; $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$; $\text{Fe}(\text{OH})_2$
23. 0.2 g of an organic compound was analysed by Kjeldahl's method. Ammonia evolved was absorbed in 60 ml $\frac{\text{N}}{5} \text{H}_2\text{SO}_4$. Unused acid required 40 ml of $\frac{\text{N}}{10} \text{NaOH}$ for complete neutralisation. Find the percentage of nitrogen in the compound.

24. 0.5264 g of silver bromide is obtained from 0.5124 g of an organic compound. Calculate the percentage of bromine in the compound.
25. 0.49 g of the chloroplatinate of a diacid base gave on ignition 0.195 g of platinum. Calculate the molecular mass of the base.

KEY

1. A	2. B	3. A	4. B	5. A
6. B	7. D	8. B	9. B	10. B
11. A	12. C	13. C	14. B	15. C
16. C	17. A	18. B	19. B	20. A
21. 4	22. 4	23. 56	24. 43.71	25. 80

** Wish You^{all} all the Best **