



CHEMISTRY

NCERT - NCERT CHEMISTRY(TELUGU)

DETECTION AND ESTIMATION OF ELEMENTS

Example

1. 0.30 g of a substance gives 0.88 g of carbon dioxide and 0.54 g water. Calculate the

percentage of carbon and hydrogen in it.



[Watch Video Solution](#)

2. 0.2004 g of glucose gave on combustion 0.2940 g of CO_2 and 0.1202 g of H_2O . Find the percentage composition.



[Watch Video Solution](#)

3. The ammonia evolved from 0.21 g of an organic compound by Kjeldahl method

neutralised 15 ml of N/20 sulphuric acid solution. Calculate the percentage of nitrogen.



[Watch Video Solution](#)

4. 0.35 g of an organic substance was Kjeldahlised and the ammonia obtained was passed into 100 ml of N/5 H_2SO_4 . The excess acid required 154 ml of N/10 $NaOH$ for neutralisation. Calculate the percentage of nitrogen in the compound.



[Watch Video Solution](#)

5. 0.316 g of an organic compound, after heating with fuming nitric acid and barium nitrate crystals in a sealed tube gave 0.466 g of the precipitate of barium sulphate. Determine the percentage of sulphur in the compound.

(Atomic masses : Ba = 137, S = 32, O = 16, C = 12, H = 1).



Watch Video Solution

6. 0.15 g of iodoform gave 0.2682 g of AgI.

Calculate the percentage of iodine.



[Watch Video Solution](#)

Problems Estimation Of Carbon And Hydrogen

1. 0.12 g of an organic compound gave on combustion 0.18 g of water and 0.11 g of CO_2 .

Calculate the percentage of C and H in the organic compound.



[Watch Video Solution](#)

2. An organic compound contains C, H and O. 0.2475 g of the organic compound yielded on combustion 0.4950 g of CO_2 and 0.2025 g of H_2O . Find the percentage composition of the organic compound.



[Watch Video Solution](#)

3. 0.2004 g of glucose gave on combustion 0.2940 g of CO_2 and 0.1202 g of H_2O . Find

the percentage composition.



Watch Video Solution

4. 0.2056 g of an organic compound gave on combustion 0.114 g of H_2O and 0.880 g of CO_2 . Find the percentage of hydrogen and carbon in the organic compound.



Watch Video Solution

5. On complete combustion, 0.246 g of an organic compound gave 0.198g of carbon dioxide and 0.1014g of water. Determine the percentage composition of carbon and hydrogen in the compound.



[Watch Video Solution](#)

Problems Estimation Of Nitrogen

1. 1.15 g of an organic compound was analysed by Kjeldahl's method and the ammonia produced was collected in 30 mL of normal HCl solution. The excess of acid consumed 18.4 mL of normal sodium hydroxide solution for back titration. Calculate the percentage of nitrogen in the substance.



Watch Video Solution

2. 0.80 g of a substance was digested with sulphuric acid and then distilled with an excess of caustic soda. The ammonia gas evolved was passed through 100 ml of $1N H_2SO_4$. The excess of the acid required 80 ml of 1N caustic soda solution for its complete neutralisation. Calculate the percentage of nitrogen in the organic compound.



[Watch Video Solution](#)

3. 0.36 g of a nitrogeous organic compound was Kjeldahlised and the ammonia liberated was exactly neutralised by 20 ml of 0.3 N H_2SO_4 . Calculate the percentage of nitrogen in the compound.



[Watch Video Solution](#)

4. 0.257 g of an organic substance was Kjeldahlised and ammonia evolved was absorbed in 50 mL of N/10 HCl which required

23.2 ml of N/10 NaOH for neutralization.

Determine the percentage of nitrogen in the compound.



[Watch Video Solution](#)

5. During estimation of nitrogen present in an organic compound by Kjeldahl's method, the ammonia evolved from 0.5 g of the compound in Kjeldahl's estimation of nitrogen, neutralized 10 mL of $1M H_2SO_4$. Find out the percentage of nitrogen in the compound.



Watch Video Solution

Problems Estimation Of Sulphur

1. 0.4037 g of an organic substance containing sulphur was heated with conc. nitric acid in a carius tube. On precipitation with $BaCl_2$, 0.1963 g of $BaSO_4$ was produced. Determine the percentage of sulphur in the compound.



Watch Video Solution

2. 0.316 g of an organic compound gives 0.466 g of barium sulphate by carius method. Calculate the percentage of sulphur?



[Watch Video Solution](#)

3. 0.530 g of an organic compound gave 0.90 g of $BaSO_4$ in carius determination of sulphur. Calculate the percentage of sulphur.



[Watch Video Solution](#)

Problems Estimation Of Halogens

1. 0.24 g of an organic compound gave 0.287 g of AgCl in the carius method. Calculate the percentage of chlorine in the compound.



[Watch Video Solution](#)

2. In Carius method of estimation of halogen, 0.15 g of an organic compound gave 0.12 g of AgBr. Find out the percentage of bromine in the compound.



[Watch Video Solution](#)

3. 0.301 g of an organic compound gave 0.282 g of silver bromide by carius method. Find the percentage of bromine.



[Watch Video Solution](#)

4. 0.196 g of an organic compound gave 0.22 g of CO_2 and 0.0675 g of H_2O . In carius determination, 0.3925 g of the substance gave

0.717 g of dry AgCl. Find the percentage composition of the substance.



[Watch Video Solution](#)

5. 0.25 g of an organic compound was found to produce 0.35 g of AgCl after heating with fuming HNO_3 and $AgNO_3$ in a sealed carius method. Determine the percentage of chlorine in the compound.



[Watch Video Solution](#)

Questions

1. 0.30 g of a substance gives 0.88 g of carbon dioxide and 0.54 g water. Calculate the percentage of carbon and hydrogen in it.



[Watch Video Solution](#)

2. 0.2004 g of glucose gave on combustion 0.2940 g of CO_2 and 0.1202 g of H_2O . Find the percentage composition.



[Watch Video Solution](#)

3. The ammonia evolved from 0.21 g of an organic compound by Kjeldahl method neutralised 15 ml of N/20 sulphuric acid solution. Calculate the percentage of nitrogen.



[Watch Video Solution](#)

4. 0.35 g of an organic substance was Kjeldahlised and the ammonia obtained was passed into 100 ml of N/5 H_2SO_4 . The excess

acid required 154 ml of N/10 $NaOH$ for neutralisation. Calculate the percentage of nitrogen in the compound.



[Watch Video Solution](#)

5. 0.316 g of an organic compound, after heating with fuming nitric acid and barium nitrate crystals in a sealed tube gave 0.466 g of the precipitate of barium sulphate. Determine the percentage of sulphur in the compound.

(Atomic masses : Ba = 137, S = 32, O = 16, C = 12, H = 1).



[Watch Video Solution](#)

6. 0.15 g of iodoform gave 0.2682 g of AgI.
Calculate the percentage of iodine.



[Watch Video Solution](#)

7. 0.12 g of an organic compound gave on combustion 0.18 g of water and 0.11 g of CO_2 .

Calculate the percentage of C and H in the organic compound.



[Watch Video Solution](#)

8. An organic compound contains C, H and O. 0.2475 g of the organic compound yielded on combustion 0.4950 g of CO_2 and 0.2025 g of H_2O . Find the percentage composition of the organic compound.



[Watch Video Solution](#)

9. 0.2004 g of glucose gave on combustion 0.2940 g of CO_2 and 0.1202 g of H_2O . Find the percentage composition.



[Watch Video Solution](#)

10. 0.2056 g of an organic compound gave on combustion 0.114 g of H_2O and 0.880 g of CO_2 . Find the percentage of hydrogen and carbon in the organic compound.



[Watch Video Solution](#)

11. On complete combustion, 0.246 g of an organic compound gave 0.198g of carbon dioxide and 0.1014g of water. Determine the percentage composition of carbon and hydrogen in the compound.



Watch Video Solution

12. 1.15 g of an organic compound was analysed by Kjeldahl's method and the ammonia produced was collected in 30 mL of

normal HCl solution. The excess of acid consumed 18.4 mL of normal sodium hydroxide solution for back titration. Calculate the percentage of nitrogen in the substance.



[Watch Video Solution](#)

13. 0.80 g of a substance was digested with sulphuric acid and then distilled with an excess of caustic soda. The ammonia gas evolved was passed through 100 ml of $1N\text{H}_2\text{SO}_4$. The excess of the acid required 80

ml of 1N caustic soda solution for its complete neutralisation. Calculate the percentage of nitrogen in the organic compound.



[Watch Video Solution](#)

14. 0.36 g of a nitrogeneous organic compound was Kejldahilised and the ammonia liberated was exactly neutralised by 20 ml of 0.3 N H_2SO_4 . Calculate the percentage of nitrogen in the compound.



[Watch Video Solution](#)

15. 0.257 g of an organic substance was Kjeldahlised and ammonia evolved was absorbed in 50 mL of N/10 HCl which required 23.2 ml of N/10 NaOH for neutralization. Determine the percentage of nitrogen in the compound.



Watch Video Solution

16. During estimation of nitrogen present in an organic compound by Kjeldahl's method,

the ammonia evolved from 0.5 g of the compound in Kjeldahl's estimation of nitrogen, neutralized 10 mL of $1M H_2SO_4$. Find out the percentage of nitrogen in the compound.



[Watch Video Solution](#)

17. 0.4037 g of an organic substance containing sulphur was heated with conc. nitric acid in a carius tube. On precipitation with $BaCl_2$, 0.1963 g of $BaSO_4$ was produced.

Determine the percentage of sulphur in the compound.



[Watch Video Solution](#)

18. 0.316 g of an organic compound gives 0.466 g of barium sulphate by carius method. Calculate the percentage of sulphur?



[Watch Video Solution](#)

19. 0.530 g of an organic compound gave 0.90 g of $BaSO_4$ in carius determination of sulphur. Calculate the percentage of sulphur.



Watch Video Solution

20. 0.24 g of an organic compound gave 0.287 g of AgCl in the carius method. Calculate the percentage of chlorine in the compound.



Watch Video Solution

21. In Carius method of estimation of halogen, 0.15 g of an organic compound gave 0.12 g of AgBr. Find out the percentage of bromine in the compound.



[Watch Video Solution](#)

22. 0.301 g of an organic compound gave 0.282 g of silver bromide by carius method. Find the percentage of bromine.



[Watch Video Solution](#)

23. 0.196 g of an organic compound gave 0.22 g of CO_2 and 0.0675 g of H_2O . In carius determination, 0.3925 g of the substance gave 0.717 g of dry AgCl. Find the percentage composition of the substance.



Watch Video Solution

24. 0.25 g of an organic compound was found to produce 0.35 g of AgCl after heating with fuming HNO_3 and $AgNO_3$ in a sealed carius

method. Determine the percentage of chlorine in the compound.



Watch Video Solution