DPP – 4 [Percentage Composition]

Chapter: Some Basic Concepts of Chemistry

"The difference between average and confident students is assignment completion"

TYPE 1 : Percentage Composition

Q.1 **Find the percentage composition of each element present in glucose ($C_6H_{12}O_6$). The percentage of Carbon is**

(1) 40% (2) 53.33% (3) 6.67% (4) 20%

Q.2 **The percentage of Hydrogen in glucose ($C_6H_{12}O_6$) is**

(1) 40% (2) 53.33% (3) 6.67% (4) 13.33%

Q.3 **The percentage of Oxygen in glucose ($C_6H_{12}O_6$) is**

(1) 40% (2) 6.67% (3) 20% (4) 53.33%

Q.4 **Find the percentage of calcium in calcium carbonate ($CaCO_3$).**

(1) 40% (2) 12% (3) 48% (4) 60%

Q.5 **Which of the following has maximum percentage of oxygen by mass?** **[NCERT Pg. 18]**

(1) H_2O (2) CO_2 (3) $CaCO_3$ (4) C_2H_5OH

Q.6 **Which of the following has maximum percentage of nitrogen by mass?**

(1) Morphine: $C_{17}H_{19}NO_3$
(2) Heroin: $C_{21}H_{23}NO_5$
(3) LSD: $C_{20}H_{25}N_3O$
(4) Phencyclidine: $C_{17}H_{25}N$

Q.7 **Caffeine has a molecular weight of 194. It contains 28.9% by mass of nitrogen. Number of atoms of nitrogen in one molecule of caffeine is**

(1) 2 (2) 3 (3) 4 (4) 5

Q.8 **Number of Fe atoms in 100 g of Haemoglobin if it contains 0.33% Fe. (Atomic mass of Fe = 56)**

(1) 0.035×10^{23}
(2) 35
(3) 3.5×10^{23}
(4) 7×10^{8}

Q.9 Insulin contains 3.4% sulphur. The minimum molecular weight of insulin is

(1) 941.176
(2) 944
(3) 945.27
(4) None

Q.10 A giant molecule contains 0.25% of a metal whose atomic weight is 59. Its molecule contains one atom of that metal. Its minimum molecular weight is

(1) 5900
(2) 23600
(3) 11800
(4) $\frac{100 \times 59}{0.4}$

Q.11 Percentage of Se in peroxidase anhydrous enzyme is 0.5% by weight (at. wt. = 78.4). The minimum molecular weight of peroxidase anhydrous enzyme is

(1) 1.568×10^{4}
(2) 1.568×10^{3}
(3) 15.68
(4) 2.136×10^{4}

Q.12 A compound contains 0.5% of S. If the number of 'S' atoms present per molecule is 2, then the molecular mass of the compound is

(1) 1600
(2) 12800
(3) 6400
(4) 3200

TYPE 5 : Miscellaneous

Q.13 In a sample of calcium phosphate $Ca_3(PO_4)_2$, 0.432 mole of phosphorous is present. What is the amount of calcium phosphate present in the sample if the sample is 100% pure? [Ca = 40, P = 31, O = 16]

(1) 98 g (2) 120 g (3) 67 g (4) 34 g

Q.14 The crystalline salt $Na_2SO_4 \cdot xH_2O$ on heating loses 55.9% of its mass and becomes anhydrous. The formula of crystalline salt is

(1) $Na_2SO_4 \cdot {}_5H_2O$
(2) $Na_2SO_4 \cdot {}_7H_2O$
(3) $Na_2SO_4 \cdot {}_2H_2O$
(4) $Na_2SO_4 \cdot {}_{10}H_2O$

Q.15 There are two oxides of sulphur. They contain 50% and 60% of oxygen respectively by weight. The weight of sulphur which combine with 1 g of oxygen is in the ratio of

(1) 1 : 1 (2) 2 : 1 (3) 2 : 3 (4) 3 : 2

Q.16 Chlorophyll, the green pigment in plants has the molecular formula $C_{55}H_{72}MgN_4O_5$. If 0.012 g of Mg is available to a plant for chlorophyll synthesis, how many grams of carbon will be required to completely use up the magnesium? [C = 12, H = 1, Mg = 12, N = 14, O = 16]

(1) 0.33 g (2) 0.66 g (3) 0.99 g (4) 1.35 g