Chemistry Study Materials for Class 11 (NCERT Based Questions with Answers)

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(Chapter -01)Some Basic Concept of Chemistry

One Mark questions with answers

1. What is the significant figure in 1.050×10^4?

   Ans. Four

2. What is the S.I. unit of Density?

   Ans. Kg m^{-3}

3. What do mean by Mole fraction?

   Ans. Mole Fraction is the ratio of number of moles of one component to the total number of moles (solute and solvents) present in the solution. It is expressed as 'x'.

4. Round off up to 3 significant figure (a) 1.235 (b) 1.225

   Ans. (a) 1.24 (b) 1.22

5. What is AZT?

   Ans. Azidothymidine.

6. What is limiting reagent?

   Ans. The reactant which gets consumed first or limits the amount of product formed is known as **limiting reagent**

7. What is the relation between temperature in degree Celsius and degree Fahrenheit?

   Ans. $$°F = \frac{9}{5}(°C) + 32$$

8. Define one mole?

   Ans. One mole is the amount of a substance that contains as many particles as there are atoms in exactly 12 g of the carbon-12.

9. Calculate the formula mass calcium chloride.

Ans. Formula mass of $CaCl_2$= 40+2 x35.5=40+71 = 111 u

10. What is the law called which deals with the ratios of the volumes of the gaseous reactants and products?

Ans. Gay Lussac's law of gaseous volumes.

Two Marks questions with answers

1. Give the two points of differences between homogeneous and heterogeneous mixtures.

Ans.

Homogeneous mixture	Heterogeneous mixture
1.Homogeneous mixtures have the same composition throughout the sample.	1. Heterogeneous mixtures consist of two or more parts (phases), which have different compositions.
2. The components of such mixtures cannot be seen under a powerful microscope.	2. These mixtures have visible boundaries of separation between the different constituents and can be seen with the naked eye

2. Copper oxide obtained by heating copper carbonate or copper nitrate contains copper and oxygen in the same ration by mass. Which law is illustrated by this observation? State the law.

Ans. **Law of Definite Proportions** This law states that: A chemical compound always consists of the same elements combined together in the same ratio, irrespective of the method of preparation or the source from where it is taken.

3. Write the empirical formula of the following:(a) N_2O_4 (b) $C_6H_{12}O_6$ (c)H_2O (d)H_2O_2

Ans. (a)NO_2 (b) CH_2O (c) H_2O (d) HO

4. Briefly explain the difference between precision and accuracy.

Ans. Precision refers to the closeness of various measurements for the same quantity. However, accuracy is the agreement of a particular value to the true value of the result.

5. Define the law of multiple proportions. Explain it with one example.

Ans. When two elements combine to form two or more compounds, then the different masses of one element, which combine with a fixed mass of the other, bear a simple ratio to one another. For example- carbon combines with oxygen to form two compounds CO and CO_2.

Compound	CO	CO_2
Mass of C	12	12
Mass of O	16	32

Masses of oxygen which combine with a fixed mass of carbon (12g) bear a simple ratio of 16:32 or 1:2.

6. Chlorine has two isotopes of atomic mass units 34.97 and 36.97. The relative abundance of the isotopes is 0.755 and 0.245 respectively. Find the average atomic mass of chlorine.

Ans. Average atomic mass = 34.97 x 0.755 +36.97 x 0.245 = 35.46 u

7. Calculate the percentage composition of water.

Ans. Mass % of an element = $\frac{\text{mass of that element in the compound} \times 100}{\text{Molar mass of the compound}}$

Molar mass of water = 18.02 g

Mass % of hydrogen = $\frac{2 \times 1.008 \times 100}{18.02}$

= 11.18

Mass % of oxygen = $\frac{16.00 \times 100}{18.02}$ = 88.79

8. State the number of significant figures in each of the following:

(i) 208.91 (ii) 0.00456 (iii) 453 (iv) 0.346

Ans. (i) 208.91 has five significant figures. (ii) 0.00456 has three significant figures.

(iii) 453 has three significant figures. (iv) 0.346 has three significant figures.

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