Class 9 CBSE Test paper Solved Chapter 3: Atoms and Molecules-2

1. Avogadro's number represents the number of atoms in

(a) 12g of C_{12} (b) 320g of sulphur

(c) 32g of oxygen (d) 12.7g of iodine

2. The number of moles of carbon dioxide which contain 8 g of oxygen is

(a) 0.5 mol (b) 0.20 mol

(c) 0.40 mol (d) 0.25 mol

(3) The total no of ions present in 111 g of $cacl_2$ is

(a) One mole (b) Two mole

(c) Three mole (d) Four moles

(4) Which of the following weighs the most?

(a) one g-atom of nitrogen (b) One mole of water

(c) One mole of sodium (d) One molecule of H2So4

(5) 5.0 litre of 0.4 M H_2SO_4 Contains-

(a) 2.0 Mole Of H2So4 (b) 0.4 mole H2So4

(c) 5.0 mole H2So4 (d) 2.0 moles H2O

Ans: (1) a (2) d (3) c (4) c (5) a

1. Find the ratio by mass of the combining elements in the compound – C_2H_5OH.

Solution: C = 2 x 12 = 24; H = 6 x 1 = 6 ; O = 1 x16 = 16

C : H : O =24 : 6 : 16 = 12 : 3 : 8

2. Give the formula of the compound formed by the elements calcium and fluorine.

Solution: Ca^{+2} F^{-1} CaF_2

3. What is the acid radical present in sodium peroxide?

Solution: The acid radical present in sodium peroxide (Na_2O_2) is peroxide radical (O_2^{-2})

4. Carbon and silicon have the same valency. What is the formula of sodium silicate?

Solution:

Valency of silicon and carbon is 4.

The formula of sodium silicate is Na^{+1} SiO_3^{-2} = Na_2SiO_3

5. What is the ratio by number of atoms in mercurous chloride?

Solution: Formula of mercurous chloride is HgCl.

Ratio of the atoms of Hg and Cl in HgCl is 1: 1.

6. Name the element whose Latin name is Stibium.

Solution:

(Latin: stibium);

Mercury (Latin: hydragyrum);

Gold (Latin: aurum);

Lead (Latin: plumbum).

7. What is the valency of a sulphide ion?

Solution: Valency of sulphide ion So_4^{-2} is —2 eg.H_2SO_4

8. How many atoms of oxygen are present in 50g of CaCO3?

Solution:

Molecular mass of $CaCO_3$ = 40 + 12 + 3 X 16=100g

Atoms of oxygen are present in 100 g of CaCO = 3 x 6.022 x 10^{23} atoms

Atoms of oxygen are present in 50 g of CaCO = {(3 x 6.022 x 10^{23}) /100} x 50 atoms

= 9.033 X 10^{23}

9. How many molecules are present in 1 ml of water?

Solution: Molecular mass of H_2O =18gm also, Mass of 1 mole of water= 1gm

18gm of water contain = 6.022 x 10^{23} molecules

1gm of water contain = (6.022 x 10^{23})/18molecules = 3.34 x 10^{22}

10. What is the unit of measurement of atomic radius?

Solution: picometers (pm) or Angstroms (Å)