Chemistry | Worksheet | Grade IX
Atoms and Molecules

1. Define atomicity. Write the atomicity of Sulphur and Phosphorus molecules.

2. The atomic number of three elements A, B and C are 9, 10 and 13 respectively. Which of them will form a cation?

3. How many times heavier is one atom of carbon than one atom of oxygen?

4. Differentiate between the actual mass of a molecule and gram molecular mass.

5. How many moles are present in 4 g of sodium hydroxide?

6. A sample of ammonia weighs 3.00 g. What mass of sulphur trioxide contains the same number of molecules as are in 3.00 g ammonia?

7. Does the solubility of a substance change with temperature? Explain with the help of an example.

8. Calculate the number of moles present in:

   (i) 3.011×10^{23} number of oxygen atoms.

   (ii) 60 g of calcium

   [Given that atomic mass of Ca = 40 u, Avogadro No. = 6.022×10^{23}]

9. Calculate the mass per cent of each element of sodium chloride in one mole of it.

10. Calculate the number of aluminium ions (Al^{3+}) in 0.056 g of alumina (Al_2O_3).

11. What is a mole? What is the unit of mole? How many molecules are there in a certain mass of a substance?

12. The difference in the mass of 100 moles each of sodium atoms and sodium ions is 5.48002 g. Compute the mass of an electron.

13. Calculate the ratio between the mass of one atom of hydrogen and mass of one atom of silver.

14. Compute the number of ions present in 5.85 g of sodium chloride.

15. The mass of one steel screw is 4.1 lg. Find the mass of one mole of these steel screws. Compare this value with the mass of the Earth (5.98×10^{24} kg). Which one of the two is heavier and by how many times?