



INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CH: 3 Atoms &Molecules

Name: _____

Date: _____

Class: IX Sec: ____

Answer the following

1. In ammonia (NH_3) nitrogen and hydrogen are always present in the ratio 14:3 by mass.
 - i) State the law which explains the above statement.
 - ii) During the formation of NH_3 , What mass of hydrogen gas would be required to react completely with 42 g of nitrogen gas?
2. If 18 g of pure water is electrolysed 2g of hydrogen and 16 g of oxygen is obtained. Which law of chemical combination is illustrated by this?
3. Carbon and oxygen combine in the ratio 1:3 by mass to form carbon dioxide. What mass of oxygen gas would be required to react completely with 5 g carbon?
4. The ratio by mass for Mg and S in magnesium sulphide is given as 3:4. Calculate the ratio by number of atoms for MgS . (At.mass of Mg & S are 24 u & 32 u respectively)
5. Mass of one molecule of a substance is 4.48×10^{-23} g. What is its molar mass?
6.
 - i) Calculate the number of atoms in one gram of Zn. (At. Mass of Zn=65.37u).
 - ii) Give the weight of one atom of Zn.
7. Calculate the molecular mass of S_8 molecule. Also calculate the number of moles of S_8 in 25.6 g of the sample.
8. Calculate the percentage composition of glucose ($\text{C}_6\text{H}_{12}\text{O}_6$)
9. What mass of water will contain the same number of molecules as 8.0 g of ferrous oxide [FeO] ?
10. State which has more number of molecules and also calculate the number of molecules in the following : 10 gm of H_2 or 10 gm of N_2 (atomic mass of H = 1 u, N = 14 u)
11. Find the ratio by number of atoms for CaO . The ratio by mass values of Calcium and Oxygen is found to be 5 : 2. (Atomic Mass of Ca = 40 u and O = 16u).
12. Calculate the number of moles of iron in iron sheet containing 6.022×10^{22} atoms of iron.