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**CLASS IX ATOMS AND MOLECULES**

**Fill In the Blanks:-**

1. During a chemical reaction, the sum of the \_\_\_\_\_\_\_\_\_ of the reactants and products remain unchanged.
2. In a pure chemical compound, elements are always present in a \_\_\_\_\_\_\_\_ proportion by mass.
3. Clusters of atoms that act as an ion are called \_\_\_\_\_\_\_\_\_\_ ions.
4. In ionic compounds, the charge on each ion is used to determine the \_\_\_\_\_\_\_\_of tye compound.
5. The Avogadro constant \_\_\_\_\_\_\_\_\_ is defined as the umber of atoms in exactly \_\_\_\_\_\_\_\_ of crbon-12
6. Mass of 1 mole of a substance is called its \_\_\_\_\_\_\_\_\_\_.
7. The abbreviation used for length names of elements are termed as their \_\_\_\_\_\_\_.
8. A chemical formula is also known as a \_\_\_\_\_\_\_\_.
9. Those ions which are formed from single atoms are called \_\_\_\_\_\_\_\_\_.
10. Ionic compounds are formed by the combination between \_\_\_\_\_\_\_\_ an \_\_\_\_\_\_.
11. The valency of an ion is \_\_\_\_\_\_\_\_\_ to the charge on the ion.
12. Mole is a link between the \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.
13. The SI unit of amount of a substance is \_\_\_\_\_\_\_\_\_\_.

**True / False:**

1. Formula mass of Na2ONa2O is 62 amu.
2. Those particles which have more or less electrons than the normal atoms are called ions.
3. Formula for sulphur dioxide is SO3SO3.
4. Molar mass of ethyne (C2H2C2H2) is 26 g/mol.
5. 22 gm of CO2CO2 consists of 1 mole.
6. Number of molecules in 32 gram of oxygen is 6.02×10236.02×1023.
7. Water is an atom.
8. Formula for sulphur dioxide is SO2SO2.
9. Clusters of atoms that act as an ion is called polyatomic ion.
10. Mass of 1 mole of a substance is called its formula mass.
11. In a pure chemical compound, elements are always present in a definite proportion by mass.

**Very Short Answer Questions:**

1. Define term mole.
2. What is Avogadro's Number?
3. What is gram atomic weight?
4. What is the difference between CO2CO2 and 2CO22CO2?
5. Name the following compounds PC3PC3 and SO2SO2.
6. In the smallest whole-number ratio must N and O atoms combine to make dinitrogen to tetroxide N2O4N2O4? What is the mole ratio of the elements in this compound?
7. How many moles of sodium atoms correspond to 1.56×10211.56×1021 atoms of sodium?
8. What is the relationship between the formula weight of a substance and its molar mass?
9. How many grams of silver are in 0.263 mol of g?
10. How many atoms are 1.00×10−91.00×10−9 g of lead?
11. How many grams of iron are needed to combine with 25.6g of O to make Fe2O3Fe2O3?
12. What is the mass of 4 moles of aluminum atoms? ( Atomic mass of AI = 27u)
13. Calculate the mass of 6.022×10226.022×1022 atoms of He.
14. Calculate the number of moles in 3.011×10223.011×1022 molecules of carbon dioxide.
15. A sample of 45.8g of H2SO4H2SO4 contains how many moles of H2SO4H2SO4?
16. What s the mass in grams of 5 moles of Fe?
17. How many moles of NaCI are present in 20 gm of the substance?
18. How many grams of O is present in 50 gm of CaCO3CaCO3?
19. How many grams of CO2CO2 are present in 0.1 mole CO2CO2?
20. Describe the difference between the mass of a mole of oxygen atoms (O) and the mass of a mole of oxygen molecules (O2O2).
21. What do you understand by the term Formula unit?