ASSIGNMENT

SUB: SCIENCE   **CLASS -9**   **TOPIC: 3. ATOMS AND MOLECULES**

<u>**Answer all the questions:**</u>

A) Short Answer Questions:
1. What is the mass of one proton and 1 neutron?
2. Derive the chemical formula of – i. Aluminium Sulphate
                                                              ii. Calcium Carbonate
3. Define molecular mass of a compound. Find molecular mass of the compounds mentioned in question 2
4. What are polyatomic ions? Give two examples.
5. Give two drawbacks of Dalton's atomic theory.
6. Calculate the molecular mass of sulphuric acid and nitric acid.
7. What is meant by a molecule? Give examples.
8. State the Law of Constant Proportion. Who gave this Law?
9. What are ions? Explain different types of ion.
10. Write down the symbol of elements of Tungsten, Silver, Mercury, Tin and Lead

B) Long Answer Questions:
1. Write down the postulates of Dalton's Atomic Theory
2. Calculate the formula unit masses of ZnO, $Na2O$, $K2CO3$, given atomic masses of Zn = 65u, Na = 23u, K = 39 u, C =3 12 u, and O = 16 u.
3. (a) Give one point of difference between an atom and an ion.
   (b) Give one example each of a polyatomic cation and an anion.
   (c) Identify the correct chemical name of $FeSO3$: Ferrous sulphate, Ferrous sulphide, Ferrous sulphite.
   (d) Write the chemical formula for the chloride of magnesium

4. a) Calculate the number of molecules of $SO2$ present in 44 g of it.

   (b) If one mole of oxygen atoms weighs 16 grams, find the mass of one atom of oxygen in (grams).

   5. Calcium chloride when dissolved in water dissociates into its ions according to the following equation: $CaCl_2(aq) \rightarrow Ca^{2+}(aq) + 2Cl^-(aq)$ Calculate the number of ions obtained from CaCl2 when 222 g of it is dissolved in water.

C) Multiple Choice Questions:

1. The molecular formula of potassium nitrate is _____.

   (a) KNO_3
   (b) KNO
   (c) KNO_2
   (d) KON

2. 1 u or 1 amu means:

   (a) 1/12th mass of C-12 atoms
   (b) Mass of C-12 atom
   (c) Mass of O-16 atom
   (d) Mass of Hydrogen molecule

3. How many times an atom of sulphur is heavier than an atom of carbon?
(a) 32 times
(b) 12 times
(c) 8/3 times
(d) 12/32 times
4. The molecule having an atomicity of 4 is:
(a) Sulphate molecule
(b) Ozone molecule
(c) Phosphorus molecule
(d) Methane molecule
5. The total number of atoms present in Na_3PO_4 is
a) 8
b) 9
c) 7
d) 10