QUESTIONS

VERY SHORT ANSWER TYPE QUESTIONS

1. Name two laws of Chemical combination.
2. What is atomicity.
3. State law of conservation of mass.
4. State law of constant proportion.
5. Calculate molecular mass of CO_2.
   (At. mass of C = 12 *u,* At. Mass of O = 16u)
6. In what form do atoms of noble gases occur in nature.
7. Define molecular mass.
8. What do you understand by term 1 mole.
9. Write the chemical symbols of nitrogen gas and oxygen gas.
10. Name the elements by reading the given symbols.
    Na, K, Ar, Nc, N, Mg, Al, Ca.

SHORT ANSWER TYPE QUESTIONS

1. Write the chemical formulae of-

   (a) Calcium chloride
   (b) Magnesium bicarbonate
   (c) Aluminum sulphate
   (d) Sodium carbonate
   (e) Lead Nitrate
   (f) Calcium Phosphate
   (g) Iron (II) sulphide
   (h) Mercury (I) chloride.

2. Write the molecular formulae of all the compounds that can be formed by the combination of following ions.

   Cu^{2+}, Na^{+}, Fe^{3+}, Cl^{-}, SO_4^{2-}, PO_4^{3-}

3. Write the cations (Positively ions) and anions (negatively changed ions) **Present** (If any) in the following compounds.

(a) NaCl (c) NH_4NO_3

(b) H_2 (d) $Ca(HCO_3)_2$

4. Give the formulae of the compounds formed from the following sets of elements

(a) Calcium and fluorine (d) Sulphur and Oxygen

(b) Nitrogen and Hydrogen (e) Carbon and Oxygen

(c) Nitrogen and Oxygen (f) Carbon and Chlorine

5. Classify each of the following on the basis of their atomicity.

(a) F_2 (b) NO_2 (c) CH_4 (d) P_4 (e) H_2O_2

(f) P_4O_{10} (g) O_3 (h) HCl (i) He (j) Ag

6. Calculate the number of moles of magnesium present in a magnesium ribbon weighing 12 gm. Molar atomic mass of Magnesium is 24 gm/mol.

7. write postulates of Daltion's atomic theory (atleast three).

8. what is the difference between the molecules of an element and the molecule of a compound? Give one example of each.

9. What is the difference between 2H and H_2? (atleast 2 dif.)

10. (a) what would be gm atomic mass of 5 moles of chlorine?

(b) Calculate the gm atomic mass of one atom of oxygen.

(gm at. mass of oxygen = 16 gm.)

LONG ANSWER TYPE QUESTIONS

1. Verify by calculating that 5 moles of CO_2 and 5 moles of H_2 do not have the same mass.

[Hint : molar mass of CO_2 = 44 g and molar mass of H_2O = 18 g]

2. If you take 5 moles of carbon atoms in a container and your friend take 5 moles of sodium atoms in another container of same weight.
   [Hint : molar mass of carbon = 12 gm. molar mass of sodium = 23 gm]
   (a) Whose container will be heavier?
   (b) Whose ontainer has more number of atoms?
3. Which has more number of atoms?
   100 gm of N_2 or 100 gm of Ammonia NH_3

$$\left[\text{Hint : No. of atoms} = \frac{\text{mass}}{\text{molar mass}} \text{X } 6.022 \text{ X } 10^{23}\right]$$

4. Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water, What mass of oxygen gas would be required to react completely with 3 gm of Hydrogen gas?
5. (a) Which postulate of Dalton's atomic theory is the result of the law of conservation of mass?
   (b) Which postulate of Dalton's atomic theory can explain the law of constant

Objective Type Questions

1. Which of the following statements is not true about an atom?
   a. Atoms are not able to exist independently
   b. Atoms are the basic units from which molecules and ions are formed
   c. Atoms are always neutral in nature
   d. Atoms aggregate in large numbers to form the matter that we can see, feel or touch
2. The chemical symbol for nitrogen gas is
   a, Ni
   b. N_2
   c. N^+
   d. N

3. The Chemical symbol for sodium is
   a. So
   b. Sd
   c. NA
   d. Na
4. Which of the following correctly represents 360 g of water?
   i. 2 moles of water.
   ii. 20 moles of water
   iii. 6.022 x 1023 molecules of water
   iv. 1.2044 x 1025 molecules of water
   a. i.
   b. i.and iv
   c. ii and iii
   d. ii and iv
5. Give the formulae of the formed from the following sets of elements
   a. Calcium and fluorine
   b. Hydrogen and sulphur
   c. Nitrogen and hydrogen
   d. Carbon and chlorine
   e. Sodium and oxygen
   f. Carbon and oxygen
6. Write the molecular formulae for the following compounds
   a. Copper (II) bromide. .....
   b. Aluminium (III) nitrate. .....
   c. Calcium (II) phoshate .....
   d. Iron (III) sulphide .....
   e. Mercury (II) chloride .....
   f. Magnesium (II) chloride .....

7. Write the molecular formulae of the compounds that can be formed by the combination of following ions

   a. Cu^{2+} and Cl^{-} .....

   b. Na^{+} and NO_3- .....

   c. Fe^{3+} and SO_4^{2-} .....

   d. Fe^{3+} and Cl^{-} .....

8. classify each of the following on the basis of their atomicity.

Elements	Atomicity
F_2	
NO_3	
N_2O	
P_4	
H_2O_2	
He	
Ag	
CH_4	
P_4O_{10}	

9. Fill in the blanks

   a. In a chemical reaction, the sum of the masses of the reactants and product remains unchanged. This is called .....

   b. A group of atoms carrying a fixed charge on them is called .....

   c. The formula unit mass of $Ca_3(PO_4)_2$ is .....

   d. Formula of sodium carbonate is ..... and that of ammonium sulphate is .....