

### Assignment 3 – August – ATOMS AND MOLECULES

1. Name the scientist who gave two important laws of chemical combination.
2. What is law of conservation of mass? Describe with an activity.
3. State the law of constant proportion. Give example.
4. Write the postulates of Dalton's atomic theory.
5. What is the difference between  $2N$  and  $N_2$ ?
6. What is the difference between an atom and molecule?
7. If 100g of water is decomposed, how many grams of oxygen and hydrogen are obtained?
8. Write symbols of: (a) copper (b) mercury (c) iron (d) silver (e) gold (f) argon  
(g) zinc (h) cobalt (i) lead (j) potassium (k) silicon
9. What is meant by valency of an element?
10. Give two examples each of:  
(a) Mono atomic molecule (b) tri atomic molecule (c) Di atomic molecule (d) poly atomic molecule
11. Write the chemical formula of: (a) Sodium oxide (b) calcium chloride (c) aluminium oxide  
(d) magnesium hydroxide (e) sodium carbonate
12. Find the mass of: (a) .2 moles of oxygen gas (b) 1.5 moles of water (c) 3 moles of neon  
(a) .5 moles of sodium (e) 2 moles of nitrogen element
13. Find the molecular mass of:  
(a)  $H_2S$  (b)  $HCl$  (c)  $NH_3$  (d)  $Cl_2$  (e)  $CH_3COOH$  (f)  $CH_3CHO$
14. How many moles are there in 200 g of Na?
15. Calculate the mass of 1 atom of nitrogen?
16. How many molecules are present in 10 g of  $H_2O$ ?
17. Find the formula unit mass of: (a)  $NaCl$  (b)  $FeO$  (c)  $NaHCO_3$  (d)  $CuSO_4$