

ASPER
C11 LN Colony, Kolkata

ONLINE
Class 09 - Science

Time Allowed: 30 minutes

Maximum Marks: 30

1. In a reaction, 5.3 g of sodium carbonate reacted with 6 g of acetic acid. The products were 2.2 g of carbon dioxide, 0.9 g water and 8.2 g of sodium acetate. Show that these observations are in agreement with the law of conservation of mass. [2]
sodium carbonate + acetic acid \rightarrow sodium acetate + carbon dioxide + water
2. 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 g of hydrogen gas? [2]
3. Which postulate of Dalton's atomic theory is the result of the law of conservation of mass? [2]
4. Define the atomic mass unit. [2]
5. Why is it not possible to see an atom with naked eyes? [2]
6. Write down the formulae of: [2]
 - i. sodium oxide
 - ii. Aluminium chloride
 - iii. sodium Sulphide
 - iv. magnesium hydroxide
7. Write down the names of compounds represented by following formulae: [3]
 - i. $\text{Al}_2(\text{SO}_4)_3$
 - ii. CaCl_2
 - iii. K_2SO_4
 - iv. KNO_3
 - v. CaCO_3
8. What is meant by the term chemical formula? [2]
9. Calculate the molecular masses of H_2 , O_2 , Cl_2 , CO_2 , CH_4 , C_2H_6 , C_2H_4 , NH_3 , CH_3OH . [5]
10. Calculate the formula unit masses of ZnO , Na_2O , K_2CO_3 , given atomic masses of $\text{Zn} = 65 \text{ u}$, $\text{Na} = 23 \text{ u}$, $\text{K} = 39 \text{ u}$, $\text{C} = 12 \text{ u}$, and $\text{O} = 16 \text{ u}$. [5]
11. a. Calculate the relative molecular mass of water (H_2O). [2]
b. Calculate the molecular mass of HNO_3 .
12. Calculate the formula unit mass of CaCl_2 . [1]