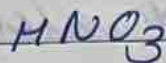




d) Nitric acid



Hydrogen,  
Nitrogen, Oxygen

4. The valency of aluminium is 3. Write the valency of other radicals present in the following compounds.

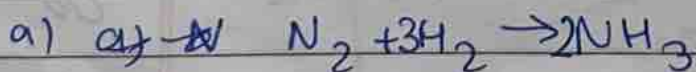
a) Aluminium chloride -  $\text{AlCl}_3$   
Chloride -  $\text{Cl}^-$

b) Aluminium oxide -  $\text{Al}_2\text{O}_3$   
Oxide -  $\text{O}^{2-}$

c) Aluminium nitride -  $\text{AlN}_3$   
Nitride -  $\text{N}^{3-}$

d) Aluminium sulphate -  $\text{Al}_2(\text{SO}_4)_3$   
Sulphate -  $\text{SO}_4^{2-}$

5. Balance the following equation



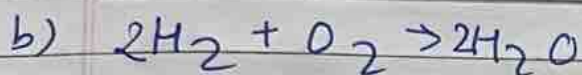
$$\text{N} = 2$$

$$\text{H} = 6$$

$$\text{N} = 2 \times 2$$

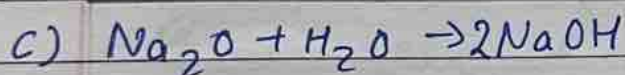
$$\text{H} = 2 \times 6$$

∴ The balanced chemical equation is  $N_2 + 3H_2 \rightarrow 2NH_3$



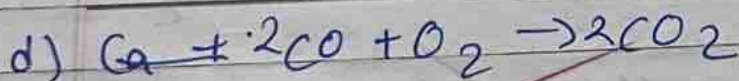
H	2 4	2 4
O	2	2

∴ The balanced chemical equation  $2H_2 + O_2 \rightarrow 2H_2O$



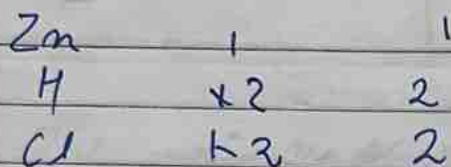
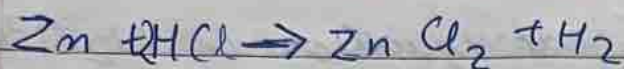
Na	2	2
O	1+1	2
H	2	2

∴ The balanced chemical equation  $Na_2O + H_2O \rightarrow 2NaOH$



<del>C</del>	<del>2</del>	<del>2</del>
<del>O</del>	<del>2+2</del>	<del>4</del>

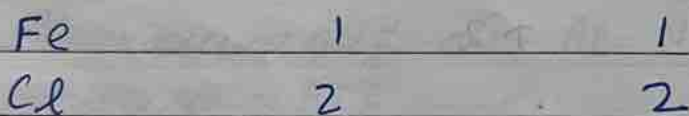
∴ The balanced chemical equation is  $2CO + O_2 \rightarrow 2CO_2$



$\therefore$  The balanced chemical equation is  $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$

12. Write the balanced chemical equation for the following word equation.

a) Iron + Chlorine  $\rightarrow$  Iron(II) chloride

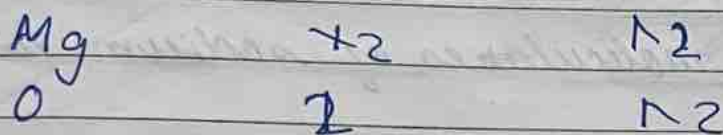
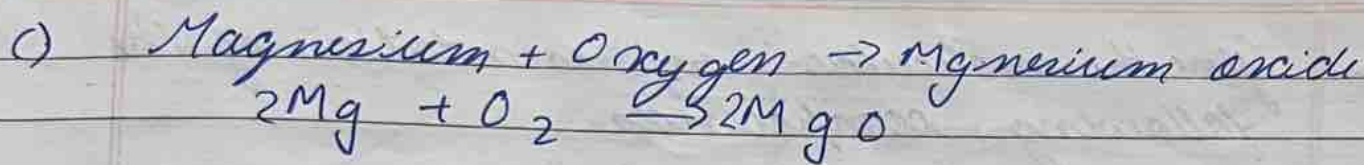


$\therefore$  The balanced chemical equation is  $\text{Fe} + \text{Cl}_2 \rightarrow \text{FeCl}_2$

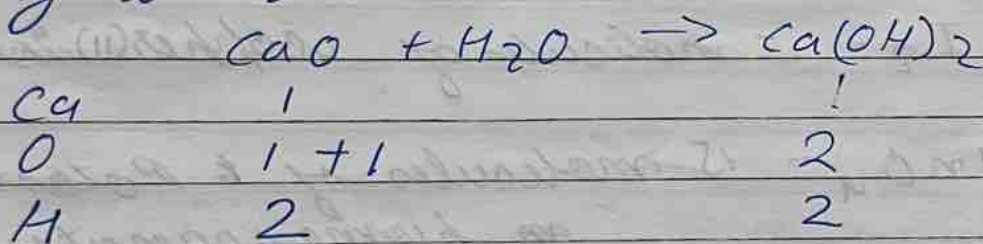
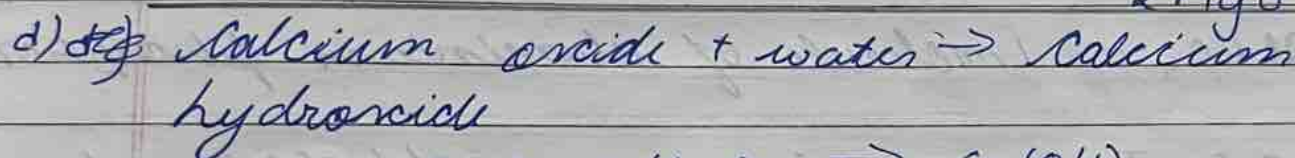
b) Magnesium + dil. sulphuric acid  $\rightarrow$  Magnesium sulphate + hydrogen



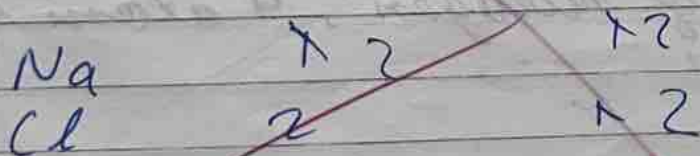
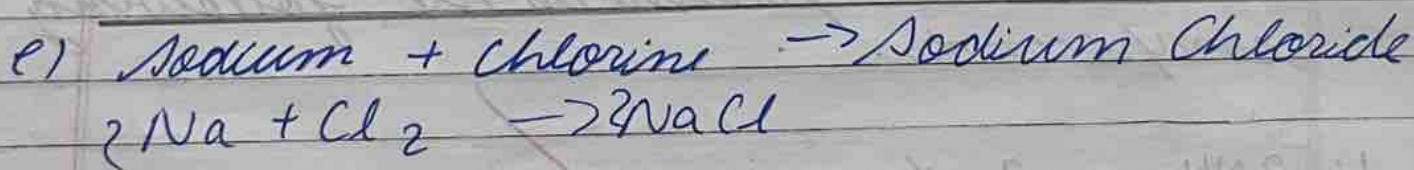
~~Mg~~



$\therefore$  The balanced chemical equation is  $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$



$\therefore$  The balanced chemical equation is  $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$



$\therefore$  The balanced chemical equation is  $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$

2/5/23

I Give the molecular representation of the following compounds

- 1)  $2\text{NaNO}_3$  - 2 molecules of sodium nitrate
- 2)  $10\text{K}_2\text{ZnO}_2$  - 10 molecules of Potassium Zincate
- 3)  $\text{AlPO}_4$  - 1 molecule of aluminium phosphate
- 4)  $5\text{CuI}_2$  - 5 molecules of copper(II) Iodide
- 5)  $15\text{KMnO}_4$  - 15 molecules of Potassium permanganate.

II State the number of atoms of each element present in the following compounds.

1.  $3\text{NH}_3$  - 3 atoms of nitrogen, 9 atoms of Hydrogen
2.  $5\text{Cu}_3\text{AlO}_3$  - 15 atoms of copper  
5 atoms of aluminium  
15 atoms of oxygen

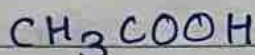
3.  $\text{Fe}(\text{MnO}_4)_2^-$  1 atom of Iron  
2 atoms of manganese  
8 atoms of oxygen

9

## Revision

1 Calculate the relative molecular mass of the following compounds

a. Acetic acid



$$= 12 + 3 \times 1 + 12 + 16 + 16 + 1$$

$$= 60 \text{ amu}$$

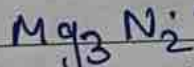
b. Cupric nitrate



$$= 63.5 + 2 \times 14 + 6 \times 16$$

$$= 187.5 \text{ amu}$$

c. Mg<sub>3</sub>N<sub>2</sub> Magnesium nitride



$$= 3 \times 24 + 14 \times 2$$

$$= 100 \text{ amu}$$

Derive the molecular formula

