Q-1- What is the weight for the indium sample if you know that the percentage for the indium that precipitate in the form of In_2O_3 is (34.5%) , the gravimetric factor for the indium is(0.82) and the weight of the precipitate is (1g)? A.wt for In =114.8 , O=16.

Wt of In = G.F × Wt of In_2O_3

$$= \frac{A.Wt\ of\ In}{M.wt\ of\ In_2O_3} \times \frac{2}{1} \times 1\ g = \frac{114.8 \times 2}{114.8 \times 2 + 16 \times 3} = 0.82\ g$$

$$\% \ In = \frac{Wt\ of\ In}{Wt\ of\ Sample} \times 100 \implies 34.5\ /\ 100 = \frac{0.82}{Wt\ of\ sample}$$

Wt of Sample = 2.3 g

Q-2- If the weight of the lead sample is (3 g) was precipitated in the form of the PbSO4 and the weight of the precipitate is (2 g) ,what is the percentage for the precipitated substance in form of PbSO4 ? If you know that the atomic weights of Pb= 207.2, S = 32 And O = 16

Wt of Pb = G.F × Wt of Pb SO_4

$$= \frac{A.Wt\ of\ Pb}{M.Wt\ of\ PbSO_4} \times 2\ g = 1.36\ g \quad , \%Pb = \frac{Wt\ of\ Pb}{Wt\ of\ Sample} \times 100$$

$$\% \ Pb = \frac{1.36}{3} \times 100 = 45.5\ \%$$

Q-3- What is the gravimetric factor for the substance that have a weight (0.37 g) if you know that the weight of the precipitate is (0.5) grams?

Wt of Substance = G.F × Wt of precipitate

0.37 = G.F × 0.5 $\Longrightarrow$ **G.F = 0.74**

Q-4- Calculate the weight of the chloride ion that was precipitated on the form of the silver chloride if you know that the weight of the precipitate is (0.53 g) ,atomic weights of the silver (108) and the chlorine (35.5)?

Wt of Cl = G.F × Wt of AgCl

$$= \frac{\text{A.Wt of Cl}}{\text{M.Wt of AgCl}} \times 0.53\text{g}$$

= 0.13 g

Q-5- A sample of non-pure sulfate salt 4 g was precipitated in the form of barium sulphate after it was dissolved in (100 ml) of distilled water and added the precipitated agent.Calculate the molarity of the sulfate ion in the non -pure salt ,If you know that the weight of the precipitate is (2.5 g), Atomic weights for S= 32, O= 16 and Ba= 137.3?

Wt of SO4 = G.F × Wt of BaSO4

$$= \frac{\text{M.Wt of SO4}}{\text{M.Wt of BaSO4}} \times 2.5 \text{ g} \implies 1.02 \text{ g}$$

$$\text{M for SO4} = \frac{\text{Wt SO4}}{\text{M.Wt SO4}} \times \frac{1000}{\text{V(MI)}}$$

= 0.10