76.(B) Dolomite : $CaCO_3.MgCO_3$ (wt. of 1 mole = 184 g)

So, 10 g of dolomite contains : $CaCO_3 \Rightarrow \frac{10}{184}$ mole = 0.054 mole

$MgCO_3 \Rightarrow \frac{10}{184}$ mole = 0.054 mole

$\therefore$ Ca $\Rightarrow$ 0.054 mole or 0.108 g eq.

C $\Rightarrow$ 0.054 mole $\times 2$ = 0.108 mole

77.(B) $P_{O_2} = P_{Total} \times \chi_{O_2}$ (mole fraction of O_2)

$$\chi_{O_2} = \frac{n_{O_2}}{n_{O_2} + n_{N_2} + n_{CO_2}}$$

$$\chi_{O_2} = \frac{0.76 \times 10^{20}}{(0.76 + 0.50 + 6.08) \times 10^{20}} = \frac{0.76}{7.34}$$

$$P_{O_2} = P_{Total} \times \chi_{O_2} = 734 \times \frac{0.76}{7.34} = 76.0 \text{ mm of Hg.}$$

78.(C) $2KClO_3 \longrightarrow 2KCl + 3O_2\uparrow$

79.(B) $$\frac{\text{Eq. wt. of acid}}{\text{Eq. wt. of salt of Mg}} = \frac{\text{Weight of acid}}{\text{Weight of salt}}$$

Mg + 2HCl (monobasic acid) $\rightarrow MgCl_2 + H_2$

Let Equivalent weight of acid = Equivalent weight of H + Equivalent weight of acid radical

$\therefore$ Equivalent weight of salt of Mg = Equivalent of Mg + Equivalent weight of acid radical

$\therefore$ $$\frac{\text{Equivalent weight}}{\text{Equivalent weight of Mg salt}} = \frac{\text{Weight of acid}}{\text{Weight of Mg acid}}$$

$\Rightarrow$ $$\frac{\text{Equivalent weight of H} + \text{Equivalent weight of acid radical (E)}}{\text{Equivalent weight of Mg} + \text{Equivalent weight of acid radical (E)}} = \frac{1.0}{1.301}$$

$\Rightarrow$ $\frac{1+E}{12+E} = \frac{1.0}{1.301}$ $\quad\therefore\quad$ E = 35.54

$\therefore$ Equivalent weight of acid = Equivalent weight of H + Equivalent weight of acid radical

= 1 + 35.54 = 36.54

80.(A) 1 mol of O_2 = 4 eq. of O

22400 mL of O_2 = 4 eq. of O

46.6 mL of O_2 = $\frac{4}{22400} \times 46.6$ = 0.00832 eq.

Equivalent of metal = Equivalent of O

$$\frac{\text{Weight}}{\text{Equivalent weight}} = 0.00832$$

$\frac{0.1}{E} = 0.00832$ $\quad\therefore\quad$ $E = \frac{0.1}{0.00832} = 12.0$

81.(B) Density will be between 0.9 and 1.00 g/cm^3

82.(A) K_2SO_4 and K_2SeO_4 are isomorphous. K_2SeO_4

$\Rightarrow\ 39\times2+x+64=142+x$

$(142+x)\,g$ of $K_2SeO_4 \Rightarrow x\,g$ of Se

100 g of $K_2SeO_4 \Rightarrow \dfrac{x}{142+x}\times100$

$\therefore\quad \dfrac{x}{142+x}\times100=50 \quad\therefore\quad x=142$

83.(D) K_2MSO_4 and K_2SO_4 are isomorphous.

Valency of S and M should be same = 6

Atomic weight = Equivalent weight × Valency = 13.00 × 6 = 78

84.(A) Volume of H_2 at STP $= 24.62\times\dfrac{273}{300}=22.40\,mL$

22400 mL of H_2 at STP = 1 mole = 2 Equivalent of H_2

22.4 mL of $H_2 = \dfrac{2}{22400}\times22.4$ = 0.002 equivalent of H_2 = 0.002 equivalent of metal

$\therefore\quad \dfrac{\text{Weight}}{\text{Equivalent weight}}=0.002 \quad\Rightarrow\quad \dfrac{0.05}{0.002}=\text{Equivalent weight}=25$

85.(A) $Zn+2HCl \longrightarrow ZnCl_2+H_2$;

Moles of H_2 evolved = 2

$\therefore$ moles of HCl required = 4

$\therefore\quad \dfrac{V\times1.2\times0.365}{36.5}=4\ ;\quad V = 333.33$ mL