Daily Tutorial Sheet-10	Level - 2

116.(D) Consider 1 L (1000 mL) of soln.

$$\text{Molarity} = \frac{1000}{36.5} \times 1.095 \times \frac{30}{100} = 9\text{M}$$

117.(C) Dilute it 5 times.

118.(B) $\text{Weight of } H_2O = \frac{(100 - 92)}{100} \times 100\text{g} = 8\text{g}$

119.(A)

	$2SO_2$	+ O_2	$\longrightarrow$ $2SO_3$
Initially	20 moles	15 moles	-
Finally	10 moles	10 moles	10 moles

120.(C) Meq HCl = (1 × x) × 20 = 20x

Meq $NaHCO_3$ + Meq Na_2CO_3 = (0.1 ×1) × 10 + (0.2 × 2) × 5 = 3

$\Rightarrow \quad 20x = 3 \quad \Rightarrow \quad x = 0.15$ M

121.(B) Let clay be 100x grams originally.

Then, A.T.Q

$$\frac{50x}{100x - 8} = \frac{50}{100} \text{ For silica.}$$

$$x = \frac{52}{25}.$$

$$\%\text{ age of water} = \frac{100x - 8}{100x - 8} \times 100 = 6.4\%$$

122.(D) $\frac{n_H \times W_H}{n_0 \times W_0} = \frac{12.5}{87.5} \Rightarrow \frac{1 \times W_H}{1 \times W_O} = \frac{1}{7} \quad \Rightarrow 7W_H = W_O$

Atomic weight of oxygen of this H-scale will be 7

123.(C) 1.68 ppb of Hg

$$\text{Grams of water} = 15 \times 0.998 \times 10^3$$

$$\text{Grams of Hg in this sample} = \frac{gw}{10^9} \times 1.68$$

$$\text{Atoms of Hg} = \frac{gw}{10^9} \times \frac{1.68}{200} \times N_A = 7.57 \times 10^{16}$$

124.(D) $\text{Number of molecules of sodium} = \frac{1.15 \times 10^{-3}}{23} \times 6 \times 10^{23}$

$$\text{Length in metre} = 0.2 \times 5 \times 6 \times 10^{18} \times 10^{-9} \times 2$$

$$\text{Length in miles} = 0.000621 \times \text{Length in metres}$$

125.(C) $\text{Density} = \frac{M_{Au}}{\frac{4}{3}\pi r^3 \times N_A}$