

- 1) The mass of a D. bottle =  $M_1$  g  
The mass of a D. bottle + water =  $M_2$  g  
The mass of a D. bottle + Alcohol =  $M_3$  g

$$\text{Mass of water} = M_2 - M_1 = 65\text{g} - 35\text{g} = 30\text{g}$$

$$\text{Mass of Alcohol} = M_3 - M_1 = 59\text{g} - 35\text{g} = 24\text{g}$$

- 2 Density bottle is a specific designed bottle which is used to determine the density of a liquid.

The glass bottle can store a fixed volume of a liquid. Generally the volume of bottle is 25 ml or 50 ml. The stopper has a narrow hole through it.

3) Density  $\rightarrow$  The density, of a substance is its mass per unit volume where  $D$  is the density,  $M$  is mass and  $V$  is volume, so  $D = \frac{M}{V}$

Relative density - The relative density of a substance is defined as the ratio of the density of the substance to the density of water.  
 $R.D = \frac{\text{Density of the Sub}}{\text{Density of water}}$

4) If it is told that relative density of ~~in~~ aluminium is 2.7, it means that a piece of iron aluminium of any volume has mass 2.7 times that of an equal volume of water.

- 5) The mass of D. bottle = 21.8g ( $M_1$ )  
 The mass of D. bottle + water = 41.8g ( $M_2$ )  
 The mass of D. bottle + liquid = 40.6g ( $M_3$ )  
 mass of bottle = 21.8g ( $M_1$ )  
 Mass of water = ( $M_2 - M_1$ ) (41.8 - 21.8)  
 Mass of liquid = ( $M_3 - M_1$ ) (40.6g - 21.8)

b So.

- Mass of bottle is = 21.8g ( $M_1$ )  
 mass of water is = 20g ( $M_2$ )  
 mass of liquid is = 18.8g ( $M_3$ )

~~Density of li~~

The mass of liquid = ( $M_3 - M_1$ ) = 18.8  
 The volume of liquid = ( $M_2 - M_1$ )  
 = 20  $\text{cm}^3$  ( $\text{vol}^m$ )

~~100~~  $D = \frac{18.8 \text{ g}}{20 \text{ cm}^3} = 0.94 \text{ g cm}^{-3}$