

C

Numericals:

↳ The density of air is $1.28 \text{ g litre}^{-1}$.

Express it in:

Ans, g cm^{-3} .

It is the density of air is 1.28 g/litre

$$\text{It is in } \text{g cm}^{-3} = \frac{1.28}{1000} = 0.00128 \text{ g cm}^{-3}$$

6 kg m^{-3}

Ans, The density of air is 1.28 g/l i.e.

$$\frac{1.28 \text{ g}}{\text{litre}} = \frac{1.28 \times 1000}{1000} = 1.28 \text{ kg/m}^3$$

2, The dimensions of a hall are $10 \text{ m} \times 7 \text{ m} \times 5 \text{ m}$. If the density of air is 1.1 kg m^{-3} . Find the mass of air in the hall.

Ans, The dimension of the hall is $10 \text{ m} \times 7 \text{ m} \times 5 \text{ m}$

which is $V = 350 \text{ m}^3$

Density of air (D) = 1.1 kg m^{-3}

$$M = V \times D = 350 \times 1.1 = 385 \text{ kg}$$

3, The density of aluminium is 2.7 g cm^{-3} . Express it in kg m^{-3} .

Ans, Density of aluminium = 2.7 g cm^{-3}

$$\text{In } \text{kg m}^{-3} \text{ it will be} = \frac{2.7 \times 1000}{10}$$

$$= 2700 \text{ kg/m}^{-3}$$

4, The density of alcohol is 600 kg m^{-3} . Express it in g cm^{-3} .

Ans, Density of alcohol = 600 kg/m^{-3}

In g/cm^3 density of alcohol will be

$$\frac{600}{1000} = 0.60 \text{ g/cm}^{-3}$$

5, A piece of zinc of mass 438.6 g has a volume of 86 cm^3 . Calculate the density of zinc.

Ans, Mass of zinc = 438.6 g (M)

Volume of zinc = 86 cm^3 (V)

$$\text{Density} = \frac{M}{V} = \frac{438.6}{86} = 5.1 \text{ g/cm}^{-3}$$

6, A piece of wood of mass 150 g has a volume of 200 cm^3 . Find the density of wood in
a, C.G.S unit

Ans, Mass of the wood = 150 g (M)

Volume of the wood = 200 cm^3

$$\text{Density in C.G.S unit} = \frac{M}{V} = \frac{150 \text{ g}}{200 \text{ cm}^3}$$

$$= \frac{0.75 \text{ g}}{\text{cm}^3}$$

b, S.I unit

Ans, In S-I system the density of wood
 $= 0.75 \times 1000$
 $= 750 \text{ kg/m}^3$