

Physical Quantities and measurement

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8)

1)

a) volume = 10 cm^3 [as $1 \text{ m} = 100 \text{ cm}$]
mass = 103 g/cm^3 [Assignment = 1000 kg/m^3]

$$V = 10/100 = 0.10 \text{ m}^3$$

$$d = \frac{m}{V}$$

$$d = \frac{0.10}{0.103} = 1.03$$

$$= 1.03 \text{ kg/cm}^3$$

2) mass of wood = 150 g

$$V = 200 \text{ cm}^3$$

$$D = \frac{m}{V}$$

$$= \frac{150}{200} = 0.75 \text{ g/cm}^3 = \text{C.G.S}$$

$$\text{S.I unit} = 0.75 \times 1000 = 750 \text{ kg/m}^3$$

4) Density - it the mass per unit volume of the substance

R.D = density of substance to density of water (1)

5)

The density of an object determines whether it will float or sink in another substance. An object will float if it is less dense than a liquid. Place and vice versa.

5) When a body displaces a weight of water equal to its own weight it floats.

6)

a)

The Buoyant force is the same in each case as the weight of Body is the same in each case and buoyant force is equal to the weight of liquid displaced.

b)

The liquid A has the least density as the body immerses the maximum.

c)

liquid C has the highest density as the body immerses the least.

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