56 The mass of 5l water is 5kg.

Ans: mass = 5kg = 5000g

Volume = 5l = 5000 cm^3

Density = $\frac{M}{V} = \frac{5000g}{5000 cm^3} = 1 g/cm^3$ (Ans)

3. How does the density of water change when heated from 0 to 4 degree celcius ?

Ans:

It increases this is called ~~anomalous~~ anomalous behaviour of water as it happens it highest at this temperature ie - 4°celcius this will happens due to hydrogen bonding present in water. This is the phenomenon which helps fishes survive in water during the winter when the top layers of water is at 0°c while water having 4°c temperature high density one is at the bottom in liquid state.

4. How density will change with temperature?

Ans) Density changes with temperature because volume changes with temperature as we heat something, the volume usually increases because the faster moving molecules are further apart. Since volume is in a denominator, increasing the volume decreases the density.

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Home assignment

1Q Define the term Density of a Substance?

Ans: Density of a Substance defined as the mass per unit of volume of the material

It is given of = $\frac{\text{mass}}{\text{volume}}$

2Q State the S.I and C.G.S unit of it show they are Related?

Ans: The SI unit of density is kg/m^3. The C.G.S unit of density is g/cm^3 or $g\,cm^{-3}$

Relationship between kg/m^3 and g/cm^3

$1\,kg = 1000\,g$

$1\,m^3 = 100\,cm^3 = 100 \times 100 \times 100\,cm^3$

$1\,g/cm^3 = \frac{1\,g}{1\,cm^3}$

$= \frac{1}{1000}\,kg$

$= \frac{1}{1000000}$

$= 1000\ kgm^{-3}$

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Home assignment

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It is given of $\rho = \frac{\text{mass}}{\text{volume}}$

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$1g/cm^3 = \frac{1g}{1cm^3}$

$= \frac{1}{1000} kg$

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