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(1) Write true or false for each statement

1. $1\ g\ cm^{-3} = 1000\ Kg\ m^{-3}$

Ans, ⊙ True

2. The density of water is maximum at 4° C.

Ans

3. The speed $5\ ms^{-1}$ is less than $25\ Km\ h^{-1}$

Ans→ True

4. The S.I. unit of speed is ms^{-1}

Ans True

~~2. Fill~~

2. Fill in the blanks

I. The S.I. unit of density is $Kg\ m^{-3}$

II. $1\ g\ cm^{-3} =$ 1000 $Kg\ m^{-3}$

III $36\ Km\ h^{-1} =$ 10 ms^{-1}

IV Distance travelled $d =$ ____ $\times$ time t

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3 Short Answer Type question

1. Define the term measurement?

Ans→ The process of associating numbers with physical quantities and phenomena.

2. Define the term length. What is its S.I unit?

Ans The length is the distance between two point. Its S.I unit is meter.

3 Define the term mass. What is its S.I unit?

The quantity of matter contained in the body is called mass. The S.I. unit of mass is Kilogram

4. How will you determine the volume of a cuboid? Write the formula you will use.

Ans Volume of a cuboid = length × breadth × height

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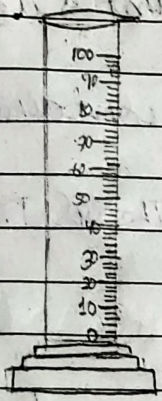
5. Name two devices which are used to measure the volume of an object Draw their neat diagrams.

Ans: Two devices that are used to measure the volume of an object are:

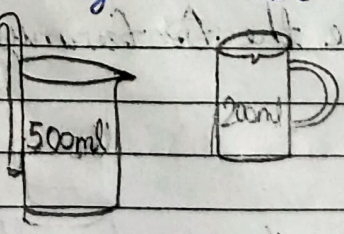
(i) Measuring cylinder and

(ii) Measuring beaker.

Measuring cylinder:-



Measuring beaker:-



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6. Find out the relation between m^3 and cm^3?

Ans: Cubic meter is equal to 1000000 cubic centimeters. To convert cubic meters to cubic centimeters, multiply the cubic meter value by 1000000.

7. The density of brass is 8.4 g cm^{-3}. ~~What is the formula you will use.~~ What do you mean by the statement?

Ans: This statement means one cubic centimetre volume of brass has mass of 8.4 g.

8. Arrang ~~the following~~ substances inorder of their increasing density: (a) iron (b) cork (c) brass (d) water (e) mercury

Ans: The increasing order of the density is:
cork, water, Iron, Brass, Mercury.

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9. How does the density of water changes when: (a) it is heated from 0°C to 4°C, (b) it is heated from 4°C to 10°C?

Ans When water is heated from 0°C, its volume decreases because its density increases and you can see this effect upto 4°C. Afterwards as the density decreases the volume increases.

10. A car travels with a speed 12 ms^{-1} while a scooter travels with a speed 36 Km h^{-1}. Which of the two travels faster?

Speed of car = 12 ms^{-1}. Speed of scooter = 36 Km h^{-1}. here 1 Km = 1000 m, 1 hr = 3600 s

So Speed of scooter = $36 \times 1000 \times 3600 = 10 ms^{-1}$

∴ Speed of car is more. car travels faster than scooter

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1: Find out the relation between m/s and km/h?

Ans: 1 (Kilometer/hour) = 1000 (meters) / 3600 (second) can also be express as 1 (Kilometer/hour) = 5/18 (~~meters/second~~ (meters/second); which is its simplified form. To convert km/h to m/s, directly multiply the given value of speed by the fraction 5/18

12 What is the S.I unit of volume and density? State other two smaller unit of volume?

Ans: The S.I. unit of volume is cubic meter. Two smaller units of volume are: cubic centimetre and cubic decimetre.

The S.I. unit of density is $\frac{Kg}{m^3}$

~~Two smaller unit of~~.

14. A rectan

13. Convert 72 km/h to m/s

Ans 72 Km/hr = 72 x 1000 / 3600 = 20 m/s

(14) A rectangular park is of length 30m and breadth 5 Km Find the area of the rectangular parke?

Ans Given

Length of the park = 50m

Breadth of the park = 30m

Area of the park = 50 x 30m

= 1500m

15. By what apparatus can we measure volume. Name any two.

Ans Measuring Measuring jar, Scales are used to measure the volume of an object.

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4. Long Answer Type Questions

I Describe the method in steps to find the area of an irregular lamina using a graph paper.

Ans (1) place the lamina over a graph paper.

(2) Draw its boundary line on graph paper with a pencil.

3. Remove the lamina and count, note the number of complete squares as well as the number of squares more than half within the boundary line

4. The area of the lamina is equal to the sum of the area of complete squares and the area of squares more than the half.

5. Let n be the total number of complete squares and more than half ~~area~~ or half square

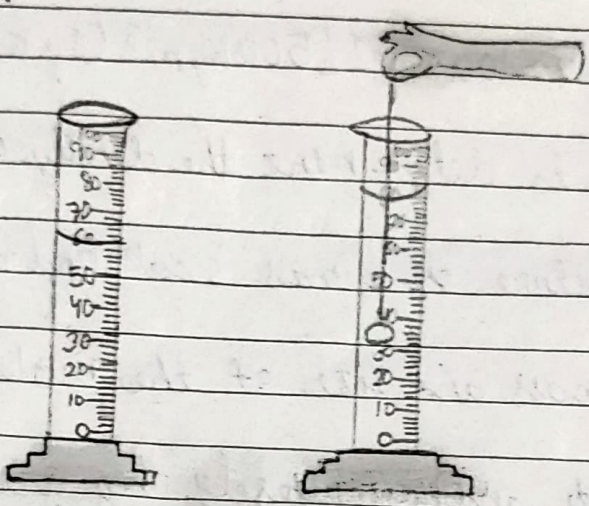
6. Area of lamina will be nx as area of one big square = $1cm^2$

II. How can you determine the volume of an irregular solid (say a piece of brass)? Describe in steps with neat diagrams

Ans: To measure the volume of a piece of stone:

1. Take a piece of ~~stone~~ brass, a measuring cylinder, fine thread of sufficient length and some water.
2. Fill it partially with water.
3. Note the reading of the water level very carefully
4. Now tie the piece of brass with a thread and dip it completely into water. We see that the level of water rises.
5. Note the reading of the new water level

6 II The difference in the initial and final water level reading's give us the volume of stone.



III The mass of a lead piece is 115g. When it is immersed into a measuring cylinder, the water level rises from 20ml mark to 30ml mark. Find: (i) The volume of the lead piece, (ii) The density of the lead in Kg m^{-3}.

Ans: (i) Given; M = 115g

$V_1 = 20ml$, $V_2 = 30ml$

Volume of lead piece $V = V_2 - V_1$

= 30 ml - 20ml

= 10ml or $10cm^3$

(ii) Density of lead piece $d = \frac{M}{V}$

$= \frac{115}{10cm^3} = 11.5 g.cm^{-3}$ $(1 g.cm^3 = 1000 kg^{-3})$

$= 11.5 \times 1000 = 11500 kgm^{-3}$ $(1 g.cm^{-3} = 1000 kg^{-3})$

IV. How to determine the density of a liquid?

Ans: The mixture of a mass scale and read its mass.

Ans: The mass and size of the molecules in a liquid and how closely they are packed together determine the density of the liquid. Just like a solid, the density of a liquid equals the mass of the liquid divided by its volume; $D = m/v$ The density of water is 1 gram per cubic centimeter.