



# ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION



Sub: Physical Science

Class: 8

Date: 22.04.20

Duration: 40 min

Worksheet Solution 14

Full Marks: 15

## PHYSICAL QUANTITIES AND MEASUREMENT/ DENSITY OF SOLIDS

Choose the Correct options:

- The density of an object is
  - (a) The mass divided by the volume  $D = m/v$**
  - (b) The volume divided by the mass  $D = v/m$
  - (c) The same as its weight
  - (d) The same as the size of the object
- State the SI unit of density.
  - (a)  $\text{kg m}^{-3}$**
  - (b)  $\text{g cm}^{-3}$
  - (c)  $\text{g cc}^{-1}$
  - (d)  $\text{mole L}^{-1}$
- If two objects have the same volume but one has a greater mass, the one with greater mass
  - (a) Has a lower density
  - (b) Has a higher density**
  - (c) Will float
  - (d) Will sink
- If two objects have the same volume but one is made up of smaller and heavier atoms, the one with small heavy atoms will
  - (a) Be larger than the other
  - (b) Be less dense than the other
  - (c) Be more dense than the other**
  - (d) Float
- If you cut a wooden block in half, each half would have
  - (a) Half the density of the original piece
  - (b) Twice the density of the original piece
  - (c) The same density as the original piece**
  - (d) No density at all
- Express  $\text{g cm}^{-3}$  as  $\text{kg m}^{-3}$ 
  - (a)  $1000 \text{ g cm}^{-3} = 1 \text{ kg m}^{-3}$
  - (b)  $1 \text{ g cm}^{-3} = 1000 \text{ kg m}^{-3}$**
  - (c)  $15 \text{ g cm}^{-3} = 125 \text{ kg m}^{-3}$
  - (d)  $75 \text{ g cm}^{-3} = 100 \text{ kg m}^{-3}$
- A cube of edge 5 cm has density  $8 \text{ g cm}^{-3}$ . Find its mass.
  - (a) 1 kg**
  - (b) 120 g
  - (c) 40 g
  - (d) 125 g
- The density of a block of wood is  $0.8 \text{ g cm}^{-3}$ . Find the volume of a block whose mass is 320 g.
  - (a)  $300 \text{ cm}^3$
  - (b)  $400 \text{ cm}^3$**
  - (c)  $500 \text{ cm}^3$
  - (d)  $800 \text{ cm}^3$

9. The area of cross section of a cylindrical metal block is  $20 \text{ cm}^2$ . If the mass of the block is  $5 \text{ kg}$  find the height of the cylinder. Given that density of the block is  $12.5 \text{ gcm}^{-3}$ .
- (a)  $25 \text{ cm}$
  - (b)  $24 \text{ cm}$
  - (c)  **$20 \text{ cm}$**
  - (d)  $15 \text{ cm}$
10. In the water displacement method for finding volume
- (a) You subtract the final volume from the initial volume
  - (b) **You subtract the initial volume from the final volume**
  - (c) You add the initial and final volumes
  - (d) You divide the final volume by 2
11. If two objects have the same mass but different volumes
- (a) **The one with the larger volume has the lower density**
  - (b) They must have the same density
  - (c) The one with the larger volume has the higher density
  - (d) The one with the larger volume is twice as dense
12. If the density of water is  $1 \text{ gram/cm}^3$ , this means that the mass of  $100 \text{ cm}^3$  of water should be
- (a)  **$100 \text{ grams}$**
  - (b)  $50 \text{ grams}$
  - (c)  $1000 \text{ grams}$
  - (d)  $1 \text{ gram}$
13. Density is a characteristic property of a substance. This means that the density of water
- (a) Changes depending on the volume
  - (b) **Stays the same regardless of the volume**
  - (c) Is greater for a greater mass of water
  - (d) Is less for a smaller mass of water
14. To find the mass of water in a graduated cylinder, you could
- (a) Take the total mass of the water and graduated cylinder and subtract the mass of the water
  - (b) **Take the total mass of the water and graduated cylinder and subtract the mass of the graduated cylinder**
  - (c) Add the mass of the water to the mass of the graduated cylinder
  - (d) Take the total mass of the water and graduated cylinder and divide the mass by two
15. An irregular solid of mass  $36 \text{ g}$  displaces  $120 \text{ ml}$  of a liquid from an Eureka can. What is the density of the solid?
- a)  $0.35 \text{ g cm}^{-3}$
  - b)  $0.6 \text{ g cm}^{-3}$
  - c)  **$300 \text{ kg m}^{-3}$**
  - d)  $30 \text{ kg m}^{-3}$