

CHAVAKALI HIGH SCHOOL

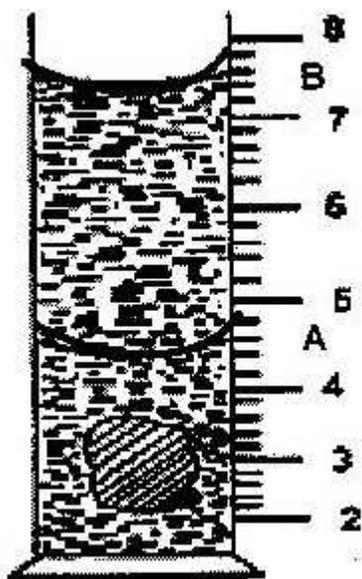
P.O. BOX 144 MARAGOLI TEL: 0734425200/

EMAIL: chavahigh@yahoo.co.uk



PHYSICS FORM ONE HOLIDAY ASSIGNMENT 2020

The figure shows a measuring cylinder which contains water initially at level A.



A solid mass 11g is immersed in the water, the level rises to B.

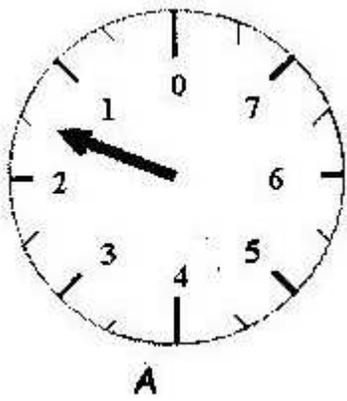
Determine the density of the solid. (Give your answer to 1 decimal point)

2. A butcher has a beam balance and masses 0.5 kg and 2 kg. How would he measure 1.5 kg of meat on the balance at once?

3. The number of molecules in 18cm^3 of a liquid is 6×10^{23} . Assuming that the diameter of the molecules is equivalent to the side of a cube having the same length as the molecule. Determine the diameter of the molecule.

4. Determine the density in kg/m^3 of a solid whose mass is 40g and whose dimensions in cm are $30 \times 4 \times 3$

5. Record as accurately as possible the masses indicated by the pointer in figures A.



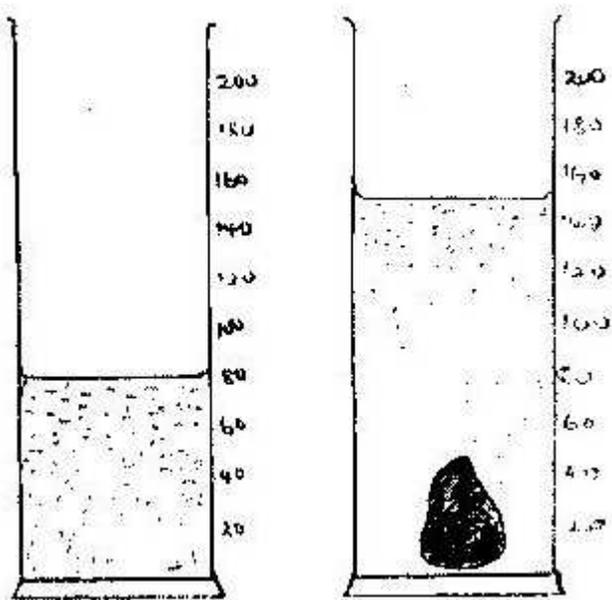
6. Figure 1 shows the reading on a burette after 55 drops of a liquid have been used.



If the initial reading was at 0cm mark, determine the volume of one drop.

(2 marks)

7. Fig. 1 shows the change in volume of water in a measuring cylinder when an irregular solid is immersed in it.



Given that the mass of the solid is 567g, determine the density of the solid in gcm^{-3} . (Give your answer correct to 2 decimal places.)

8. A thin wire was wound 30 times closely over a boiling tube. The total length of the windings was found to be 9.3 mm. Calculate the radius of the wire.

9. (a) Given that a kilogram of copper contains about 10^{25} atoms and that density of copper is about 9000kg/m^3

/ estimate the diameter of the copper atom?

(b) State the assumption made in (9a) above.

10. The density of concentrated Sulphuric acid is 1.8gcm^{-3} . Calculate the volume of 3.6kg of the acid.

11. 1600 cm^3 of fresh water of density 1 g/cm^3 are mixed with 1400cm^3 of seawater of density 1.25g/cm^3 . Determine the density of the mixture

12. in an experiment to determine the density of sand using a density bottle the following measurements were recorded

Mass of empty density bottle -43.2g

Mass of density bottle full of water-66.4g

Mass of density bottle with some sand -67.5g

Mass density bottle +sand + filled up with water -82.3g

Use the data above to determine the:

- Mass of water that completely filled the bottle
- Volume of water that completely filled the bottle
- Volume of the density bottle
- Mass of sand
- Mass of water that filled the space above the sand

- f) Volume of sand
- g) Density of sand

14. A one meter rod is used to estimate the exact height of a tree the data below were obtained

Length of the rod –100cm

Length of the shadow of the rod -50cm

Length of the shadow of the tree-450cm

Determine the length of the tree in meters'