

FORM ONE PHYSICS SCHEMES THIRD TRIAL

1. What is meant by the term 'basic quantities' (1 mk)

Basic quantities are quantities that cannot be obtained from any other physical quantity apart from the original state

2. Define length and state its SI unit (1 mk)

Length is the actual distance between two given points in space. Length is measured in metres (m)

3. Name two types of errors and state how each is minimized when measuring the length of objects. (4 mks)

4. Describe how you would estimate the thickness of one paper in a given book if you are provided with a metre ruler only (3 mks)

measure the thickness of like 100 sheets of paper in a book, then the number (answer) you get divide it with the number of sheets (100) thus you will get the thickness of one sheet.

$\frac{\text{total thickness}}{\text{Total number of sheets}}$

Total number of sheets

State three limitations of using the displacement method when determining the volume of an irregular solid

-do not show the exact volumes since the solid has stable state

-due to the irregularity of the shape the method may not be suitable since some solid may take in water thus giving wrong results

-Some solid such as paper and other that float in water may give varying result

(3 mks)

5. wire of radius 6 mm and length 400 is melted into a sphere. Calculate the radius of the sphere in centimeters.

6. Convert 5 g/cm^3 to the SI unit. (2 mks)

$$1\text{g/cm}^3 = 1000\text{kg/m}^3 \quad 5\text{g}\times 1000\text{kg} \\ = 5000\text{kg/m}^3$$

7. Using the following masses and volumes of substances, calculate their densities in SI unit.

a) 200 mg, 0.0004m^3 (2 mks)

$$1\text{mg} = 0.000001\text{kg} \quad 200 \times 0.000001 = 0.0002\text{kg}$$

200mg =?

$$\frac{0.0002}{0.0004}$$

0.5kg/m³

b) 0.86 kg, 1000000 mm^3 (2 mks)

8. 100 cm^3 of water is mixed with 50 cm^3 of concentrated acid of density 1.2 g/cm^3 . Assuming no change in volume, find the average density of the mixture. (Take density of water = 1.0 g/cm^3) (4 mks)

Density of water = 1gcm^{-3} volume of acid= 50cm^3 mass of mxt=

$$60\text{g}+100\text{g}=160\text{g}$$

Volume of water = 100cm^3 mass of acid = $50\text{cm}^3 \times 1.2\text{gm}^3$ vol of acid + vol

water = $100\text{cm}^3 + 50\text{cm}^3$

Mass of water = $100\text{cm}^3 \times 1\text{gm}^{-3} = 60\text{gm}$

150cm

Density of mixture 160g

Volume of mixture 150cm³

= 1.067gm^3

9. A density bottle weighs 70 g when filled with water and 94 g when filled with a liquid A. Find the density of liquid A given that the density of water is 1000 kg/m^3 .

10. State four effects of forces (4 mks)

-force can stop a moving object or slow it down

-force changes the shape of an object

-force can also change the direction of a moving object

-it also makes a stationary object move

11. State three types of forces that act between objects that are not in contact (3 mks)

-magnetic force

-Gravitational force

-electrostatic force

12. Describe two types of molecular forces (4 mks)

-the force of attraction between molecules of the same substances is known as cohesion force

, here molecules are held tightly held together. In the other hand molecules of different

substances are also held together by a force called adhesion force.

13. State three areas of application of capillary rise. (3 mks)

-mercury barometer

Fotrin barometer

-used in a manometer

14. Distinguish between mass and weight and state SI units (4 mks)

Mass is the quantity of matter contained in an object and is measured in kg)while weight is the measure of an object's pull of gravity on an object ,measured in Newton's(N)

15. Differentiate between vector quantities and scalar quantities (2 mks)

Vector quantities are quantities that has a magnitude as well as direction while scalar quantities are quantities that only have magnitude but they do not have direction. Students may give examples in each