

CALCULATIONS

The volume of the given hollow tube is:

$$V = \frac{\pi}{4} (d_e + d_i)(d_e - d_i) l$$

or, $V = \dots \dots \dots$

or, $V = \dots \dots \dots (\text{cm}^3)$

And

The density of the given plate is:

$$\rho = \frac{m}{V}$$

or, $\rho = \dots \dots \dots$

or, $\rho = \dots \dots \dots (\text{Gram cm}^{-3})$

PERCENTAGE ERROR

For density of pure aluminum:

Standard value, $SV = 2.7 \text{ gram cm}^{-3}$

Observed value, $OV = \dots \dots \dots \text{ gram cm}^{-3}$

$$\% \text{ error} = \left| \frac{SV - OV}{SV} \right| \times 100 \%$$

= $\dots \dots \dots$

= $\dots \dots \dots$

RESULT

The length, external and internal diameter of given hollow tube has been found to be $\dots \dots \dots$, $\dots \dots \dots$, and $\dots \dots \dots$ respectively. Also, the volume and density of given hollow tube has been found to be $\dots \dots \dots$ and $\dots \dots \dots$ respectively.

CONCLUSIONS

The length, external and internal diameter of given hollow tube has been found experimentally by using vernier callipers.

Also, the volume and density of the tube has been calculated with $\dots \dots \dots$ % error in density.

SOURCES OF ERROR

1. The length and diameter of the tube may not be uniform.
2. The error could be due variable pressure applied to the jaws.
3. The divisions on the scales of the calliper may not be uniform.
4. Error could be due to the defect of vision and due to carelessness of the experimenter

PRECAUTIONS

1. The jaws of the calliper should be pressed gently and equally in each measurement.
2. Zero error should be properly checked.
3. Observations should be taken at different points on the test plate.