



SMART TEST SERIES

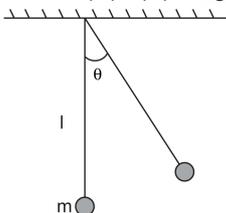
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Name:		Subject:	Physics-11
Roll # :		Unit(s):	1,
Class:	Inter Part-I	Test:	Type 4 - SQs + LQs Test - Marks=40
Date:		Time:	

Q.1 Write short answers of the following questions.

(15x2=30)

- (i) Write two differences between base and derived quantities?
- (ii) **How many meters are there in one light year? (Speed of light = $3 \times 10^8 \text{ ms}^{-1}$).**
- (iii) **What is meant by Random errors? How error may occur?**
- (iv) Define random error and systematic error.
- (v) Given that $V = (5.2 \pm 0.1)$ volt. Find its percentage uncertainty.
- (vi) **What will be the percentage uncertainty in a radius of a small sphere measured as 2.25 cm by a vernier calliper with least count 0.01 cm?**
- (vii) The length, breadth and thickness of a sheet are 3.233 m, 2.105 m and 1.05 cm respectively. Calculate the volume of the sheet correct upto the appropriate significant digits.
- (viii) The diameter and length of a metal cylinder measured with the help of vernier callipers of least count 0.01 cm are 1.22 cm and 5.35 cm. Calculate the volume V of the cylinder and uncertainty in it.
- (ix) How can the total uncertainty be found in the final results for multiplication and division?
- (x) How can the total uncertainty be found in the final results for multiplication and division?
- (xi) **Check the correctness of relation $F = ma$.**
- (xii) What are the dimensions units of $\left[\frac{F \times \ell}{m}\right]^{1/2}$?
- (xiii) Write the dimensions of: i) Angular Momentum ii) Torque
- (xiv) Derive the dimensions of coefficient of viscosity and pressure.
- (xv) Derive a relation for the time period of a simple pendulum of fig 1 using dimensional analysis. The various possible factors on which the time period T may depend are: (i) Length of the pendulum (l) (ii) Mass of the bob (m) (iii) Angle θ which the thread makes with the vertical (iv) Acceleration due to gravity (g)



Q.2 Write long answers of the following questions.

(5x2=10)

2. The length and width of rectangular plate are measured to be 15.3 cm and 12.80 cm respectively. Find the correct area of the plate.