



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) Define physics and give the names of its two main branches.
- (ii) **How many nano-seconds in one year?**
- (iii) **Why do we find it useful to have two units for the amount of substance, the kilogram and the mole?**
- (iv) **An old saying is, "A chain is only as strong as its weakest link." What analogous statement can you make regarding experimental date used in computation?**
- (v) **Mass is a form of energy. How much energy is equivalent to one kg mass, according to Einstein's theory.**
- (vi) Write any two points which should be kept in mind, while using units.
- (vii) **Name two major types of errors in measurement and also define them.**
- (viii) **What are significant figures?**
- (ix) **Is a zero significant or not? Explain.**
- (x) The length and width of a rectangular plate are measured to be 15.3cm and 12.80cm respectively, Find the area of the plate?
- (xi) **What do you know about precision and accuracy?**
- (xii) **Define Precision. Which instrument can measure precise value meter rod or vernier caliper?**
- (xiii) How do you assess the total uncertainty in the final result for multiplication and division?
- (xiv) If a precise measurement is also an accurate measurement. Explain your answer.
- (xv) Find the value of 'g' and its uncertainty using $T = 2\pi\sqrt{\frac{l}{g}}$ from the following measurements made during an

experiment Length of simple pendulum $l = 100 \text{ cm}$. Time for 20 vibrations = 40.2 s Length was measured by a metre scale of accuracy upto 1 mm and time by stop watch of accuracy upto 0.1 s.

Q.2 Write long answers of the following questions.

(5x2=10)

2. Derive a relation for time period of a simple pendulum using dimension analysis. The various possible factors on which time period "T" may depend are: (i) mass of the body (ii) Length of the pendulum (iii) angle " θ " that thread makes with vertical (iv) acceleration due to gravity.