SMART TEST SERIES

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Name:		Subject:	Physics-11
Roll # :		Unit(s):	1,
Class:	Inter Part-I	Test:	Type 3 - MCQs + SQs Test - Marks=30
Date:		Time:	

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (10x1=10)

1 Silicon is obtained from:
(A) Water (B) Metals ` (C) Wood (D) Sand

2 The branch of science which deals with the property of matter and energy is called:
(A) Chemistry (B) Biology (C) Geology (D) Physics

3 The quantities which are defined in terms of other physical quantities are called:
(A) base quantities (B) derived quantities (C) both (D) none of these

4 Light year is a unit of:
(A) Light (B) Time ` (C) Velocity (D) Distance

5 _____ is derived unit of:
(A) Newton (B) Amphere (C) Candela (D) Kelvin

6 The international system (SI) built up from
(A) base units (B) derived units (C) Supplementary units (D) All above

7 Time taken by light to reach from sun to earth is:
(A) 8 min. 20 sec (B) 10 min. 20 sec (C) 5 min. 20 sec (D) infinity

8 Significant figures in 0.0045 are:
(A) 1 (B) 3 (C) 4 (D) 2

9 A measurement taken by Vernier Calliper with least count as 0.01 cm is recorded as 0.45 cm, it has fractional uncertainity:
(A) 0.01 (B) 0.02 (C) 0.03 (D) 0.45

10 The dimension of the realtion (sqrt{frac{F×l}{m}}) are equal to the dimension of:
(A) Force (B) Momentum (C) Acceleration (D) Velocity

Q.2 Write short answers of the following questions. (10x2=20)

(i) **Define light year. How many meters are there in one light year if speed of light is 3 x 10^5 ms^{-1}?**

(ii) **Mass is a form of energy. How much energy is equivalent to one kg mass, according to Einstein's theory.**

(iii) How many micro seconds in one year?

(iv) **Define systematic errors. Explain how can we remove the effect of systematic error?**

(v) **What is meant by Random errors? How error may occur?**

(vi) **Using rules of significant figures, compute** $\frac{5.348\times10^{-2}\times3.64\times10^{4}}{1.336}$ **upto appropriate significant figures.**

(vii) **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?**

(viii) **Suggest one method of reducing the uncertainty in any timing experiment.**

(ix) 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.

(x) The speed v of sound waves through a medium may be assumed to depend on (a) the density ρ of the medium and (b) its modulus of elasticity E which is the ratio of stress to strain. Deduce by the method of dimensions, the formula for the speed of sound.