CBSE TEST PAPER-01

CLASS - XI PHYSICS (Physical World & Measurement)
Topic: - Physical World & Measurement

1. If $x = at + bt^2$ where x is in meters and t is in seconds. What are the units of a and b? [1]

2. Fill ups. [1]
   (i) $3.0 m/s^2$ = ---------- km/hr^2
   (ii) $6.67\ 10^{-11} Nm^2/kg^2$ = ---------- $g^{-1}cm^3s^{-2}$

3. Write S.I unit of luminous intensity and temperature? [1]

4. Calculate the time taken by the light to pass through a nucleus of diameter 1.56×10^{-16} m. (speed of light is 3×10^8 m/s) [2]

5. If force (F) acceleration (A) and time (T) are taken as fundamental units, then find the dimension of energy. [2]

6. Two resistances $R_1 = 100 \pm 3\Omega$ and $R_2 = 200 \pm 4\Omega$ are connected in series. Then what is the equivalent resistance? [2]

7. If velocity, time and force were chosen the basic quantities, find the dimensions of mass? [2]

8. Young's modulus of steel is 19×10^{10} N/m^2. Express it in dynes cm^2. Here dynes are the C.G.S unit of force. [3]

9. The velocity υ of water waves may depend on their wavelength λ density of water ρ and the acceleration due to gravity g. Find relation between these quantities by the method of dimension? [3]

10. The force acting on an object of mass m traveling at velocity υ in a circle of radius r is giving by $F = \frac{m\upsilon^2}{r}$ [3]
    The measurements recorded as m $m = 3.5kg \pm 0.1kg$
    $\upsilon = 20m/s \pm 1m/s$ $\quad r = 12.5m \pm 0.5m$
    Find the maximum possible (1) fractional error (2) % error in the measurement of force. How will you record the reading?