INDIAN SCHOOL NIZWA - WORKSHEET

PHYSICS

CH: 2 UNITS AND

MEASUREMENT

Name: _____ Date:_____ Class: XI Sec: _A__

1. Which of the following is the most precise device for measuring g length:
   a) A vernier calliper with 20 divisions on the vernier scale?
   b) A screw gauge of pitch scale 1mm and 100 divisions on the circular scale?
   c) An optical instrument that can measure length to within a wave length of light?
2. State the number of significant figures in the following :
   a) 0.007 b)3.66 x 10^4 kg c) o.0234 gcm^{-3} d) 5.0390
3. Write the order of magnitude of the following:
   a) Velocity of light b) Par sec c) 1 AU
4. Choose the correct formula for the displacement (y) of a particle executing periodic motion:
   (i) Y = r sin (2π/T)t
   (ii) Y = r sin vt
   (iii) Y = r sin (2π/r) t
   (iv) Y = r sin (2π / v)t.
   Where T , r, v and t stand for time – period , amplitude , velocity and time respectively.
5. A photon is quantum of radiation with energy E = hν, where ν is the frequency and h is the Plank's constant. Find the dimension of h.
6. If force (F), velocity (V) and time (T) are chosen as basic units, how will be the dimension of mass represented?
7. Check the correctness of the equation by dimensional analysis, λ = h/mv, where the letters have their usual meaning.
8. Each side of a cube is measured to be 7.203. What is the total surface area and the volume of the cube to approximate significant figures?
9. The length, breadth and thickness of a block of wood were measured with the help of a meter scale. The result after calculating the errors are as given below. Find the percentage error in the volume of the block.
   l = 15. 12±0.01 cm, b = 10.15 ±0.01 cm and h = 5.28 ±0.01 cm.
10. Check the correctness of the equation V = (F/M) where V is the velocity, F is the tension and M is mass per unit length.
11. If $X = a + bt + ct^2$, where x is in the metres and t in seconds, what are units of a , b and c?
12. E, m,l and G denote energy , mass , angular momentum and gravitational constant respectively. Determine the dimension of EL^2/m^5G^2. Given the dimension of angular momentum , [l] = $[ML^2T^{-1}]$.