



INDIAN SCHOOL NIZWA - WORKSHEET

PHYSICS

CH: 2 UNITS AND MEASUREMENT

Name: _____

Date: _____

Class: XI Sec: A

- Which of the following is the most precise device for measuring g length:
 - A vernier calliper with 20 divisions on the vernier scale?
 - A screw gauge of pitch scale 1mm and 100 divisions on the circular scale?
 - An optical instrument that can measure length to within a wave length of light?
- State the number of significant figures in the following :
 - 0.007
 - 3.66×10^4 kg
 - 0.0234 gcm⁻³
 - 5.0390
- Write the order of magnitude of the following:
 - Velocity of light
 - Par sec
 - 1 AU
- Choose the correct formula for the displacement (y) of a particle executing periodic motion:
 - $Y = r \sin (2\pi/T)t$
 - $Y = r \sin vt$
 - $Y = r \sin (2\pi/r) t$
 - $Y = r \sin (2\pi / v)t$.

Where T , r , v and t stand for time – period , amplitude , velocity and time respectively.
- A photon is quantum of radiation with energy $E = hv$, where v is the frequency and h is the Plank's constant. Find the dimension of h .
- If force (F), velocity (V) and time (T) are chosen as basic units, how will be the dimension of mass represented?
- Check the correctness of the equation by dimensional analysis, $\lambda = h/mv$, where the letters have their usual meaning.
- 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?
- 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.
 $l = 15.12 \pm 0.01$ cm, $b = 10.15 \pm 0.01$ cm and $h = 5.28 \pm 0.01$ cm.
- 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.
- If $X = a + bt + ct^2$, where x is in the metres and t in seconds, what are units of a , b and c ?
- 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 , $[l] = [ML^2T^{-1}]$