D.A.V. PUBLIC SCHOOL, NEW PANVEL

Plot No. 267, 268, Sector-10, New Panvel,
Navi Mumbai-410206 (Maharashtra).
Phone 022-27468211, 27482276
E-mail – davnewpanvel@gmail.com, www.davnewpanvel.com

2025-2026

Subject : Physics **Std.- XI** **Worksheet:1**

CHAPTER : Units and Measurement

1. Write the significant figures i)0.02308 ii) 123000 iii) 4.700 iv) 287.5
2. Which is the most accurate clock?
3. What are the limitations of dimensional analysis?
4. Write the dimensionless physical quantity.
5. In the given equation y = sin(wt-kx), where x-distance,t- time .Obtain the dimensional formula for w and K?
6. Write the dimension of all physical quantity

   a) Planck's constant b) torque c)coefficient of viscosity.
7. The moon is observed from two diametrically opposite points A and B on the earth. The angle θ subtended at the moon by the two directions of observations is $1^0 54'$. If the diameter of the earth is 1.276×10^7m. What is the distance of the moon from the earth?
8. Dimensional formula of magnetic flux density (B) can be calculated from the ration F= q v B sinθ, where F is force, q is charge, v is velocity and θ is an angle. Find dimension of(B).
9. Consider a simple pendulum, having a bob attached to a string, which oscillates under the action of the force of gravity. Suppose that the period of oscillation of the simple pendulum depends on its length (l), mass of the bob (m) and acceleration due to gravity (g). Derive the expression for its time period using the method of dimensions.
10. Find the expression for viscous force F acting on a tiny steel ball of radius r moving in a viscous liquid of viscosity (n) with a constant speed v by the method of dimensional analysis.
11. How can SONAR, RADAR and LASER be used to measure distance?
12. What is the total atomic volume in m^3 of a mole of hydrogen atom if radius of hydrogen atom is allow 0.5 Å ?
13. The force is given in terms of time t and displacement y by the equation: F=A cos By + C sin Dt
    Write the dimensions of $\frac{D}{B}$?

D.A.V. PUBLIC SCHOOL, NEW PANVEL

Plot No. 267, 268, Sector-10, New Panvel,
Navi Mumbai-410206 (Maharashtra).
Phone 022-27468211, 27482276
E-mail – davnewpanvel@gmail.com, www.davnewpanvel.com

2025-2026

Subject : Physics **Std.- XI** **Worksheet:2**

.....

CHAPTER : **Units and Measurement**

MCQ

1 . The quantity having the same unit in all system of unit is
(a) mass (b) time (c) length (d) temperature

2. .Amongst the following options, which is a unit of time?
(a) Light year (b) Parsec (c) Year (d) None of these

3. Which of the following measurements is most precise?
(a) 5.00 mm (b) 5.00 cm (c) 5.00 m (d) 5.00 km

4. The numbers 5.355 and 5.345 on rounding off to 3 significant figures will give

(a) 5.35 and5.34 (b) 5.36 and 5.35 (c) 5.35 and5.35 (d) 5.36 and5.34

5. Which two of the following five physical parameters have the same dimensions?

I. Energy density II. Refractive index III. Dielectric constant IV. Young's modulus V. Magnetic field
(a) I and IV (b) III and V (c) I and II (d) I and V

6. If the unit of force and length are doubled, the unit of energy will be
(a) 1/2 times (b) 2 times (c) 4 times (d) 1/4 times

7. Give that the displacement of a particle is given by $x = A^2 \sin^2 kt$, where t denotes the time. The unit of k is

(a) radian (b) metre (c) hertz (d) second

8. In a particular system, the unit of length, mass and time are chosen to be 10 cm, 10 g and 0.1 s respectively. The unit of force in this system will be equivalent to

(a) 0.1 N (b) 1 N (c) 10 N (d) 100 N

9. The unit of thermal conductivity is :

(a) $J\ m^{-1}\ K^{-1}$ (b) $W\ m\ K^{-1}$ (c) $W\ m^{-1}\ K^{-1}$ d) J m K

10. If force (F) , velocity (v) and time (T) are taken as fundamental units, then the dimensions of mass are

(a)$[FvT^{-1}]$ (b)$[FvT^{-2}]$ (c)$[Fv^{-1}T^{-1}]$ (d)$[Fv^{-1}T]$

11. Dimension of L/R is

(a) [T] (b) [L] (c) [LT] (d) [MLT]