



Chapter 1 Unit and Measurements

Assignment 5

Class 11

Prerna Edu

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DPP

DAILY PRACTICE PROBLEMS

CLASS : XITH
DATE :

SUBJECT : PHYSICS
DPP NO. : 5

Topic :- UNITS AND MEASUREMENTS

- What is the power of a 100 W bulb in CGS units?
a) 10^6 ergs^{-1} b) 10^7 ergs^{-1} c) 10^9 ergs^{-1} d) $10^{11} \text{ ergs}^{-1}$
- The number of particles given by $n = -D \frac{n_2 - n_1}{x_2 - x_1}$ are crossing a unit area perpendicular to x -axis in unit time, where n_1 and n_2 are the number of particles per unit volume for the values x_1 and x_2 of x respectively. Then the dimensional formula of diffusion constant D is
a) $[M^0 L T^0]$ b) $[M^0 L^2 T^{-4}]$ c) $[M^0 L T^{-3}]$ d) $[M^0 L^2 T^{-1}]$
- If C the restoring couple per unit radian twist and I is the moment of inertia, then the dimensional representation of $2\pi \sqrt{\frac{I}{C}}$ will be
a) $[M^0 L^0 T^{-1}]$ b) $[M^0 L^0 T]$ c) $[M^0 L T^{-1}]$ d) $[M L^2 T^{-2}]$
- The dimensions of electric potential are
a) $[ML^2 T^{-2} Q^{-1}]$ b) $[MLT^{-2} Q^{-1}]$ c) $[ML^2 T^{-1} Q]$ d) $[ML^2 T^{-2} Q]$
- Dimension of R is
a) $ML^2 T^{-1}$ b) $ML^2 T^{-3} A^{-2}$ c) $ML^{-1} T^{-2}$ d) None of these
- What is dimensional formula of thermal conductivity?
a) $[MLT^{-1} \theta^{-1}]$ b) $[MLT^{-3} \theta^{-1}]$ c) $[M^2 L T^{-3} \theta^{-2}]$ d) $[ML^2 T^{-2} \theta]$
- The temperature of a body on Kelvin scale is found to be X K. When it is measured by a Fahrenheit thermometer, it is found to be $X^\circ F$. Then X is
a) 301.25 b) 574.25 c) 313 d) 40
- Which of the following is the smallest unit
a) *Millimetre* b) *Angstrom* c) *Fermi* d) *Metre*
- Which one of the following does not have the same dimensions
a) Work and energy b) Angle and strain
c) Relative density and refractive index d) Planck constant and energy
- The physical quantity which is not a unit of energy is

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- a) Volt-coulomb b) MeV-sec c) Henry (ampere)² d) Farad-(volt)²
11. The dimensions of permittivity ϵ_0 are
a) $A^2T^2M^{-1}L^{-3}$ b) $A^2T^4M^{-1}L^{-3}$ c) $A^{-2}T^{-4}ML^3$ d) $A^2T^{-4}M^{-1}L^{-3}$
12. The values of two resistors are $R_1 = (6 \pm 0.3) \text{ k}\Omega$ and $R_2 = (10 \pm 0.2) \text{ k}\Omega$. The percentage error in the equivalent resistance when they are connected in parallel is
a) 5.125% b) 2% c) 3.125% d) 10.125%
13. The dimensional formula of magnetic induction B is
a) $[M^0AL^0T^0]$ b) $[M^0AL^{-1}T^0]$ c) $[M^0AL^2T^0]$ d) $[ML^2T^{-2}A^{-1}]$
14. The value of universal gas constant is $R = 8.3 \text{ J/K-mol}$. The value of R in atmosphere litre per Kelvin mol
a) 8.12 b) 0.00812 c) 81.2 d) 0.0812
15. A physical quantity is measured and its value is found to be nu where n = numerical value and u = unit. Then which of the following relations is true
a) $n \propto u^2$ b) $n \propto u$ c) $n \propto \sqrt{u}$ d) $n \propto \frac{1}{u}$
16. SI unit of permittivity is
a) $C^2m^2N^2$ b) $C^2m^{-2}N^{-1}$ c) $C^2m^2N^{-1}$ d) $C^{-1}m^2N^{-2}$
17. The work done by a battery is $W = \epsilon\Delta q$, where Δq change transferred by battery, ϵ = emf of the battery. What are dimensions of emf of battery?
a) $[M^0L^0T^{-2}A^{-2}]$ b) $[ML^2T^{-3}A^{-2}]$ c) $[M^2L^0T^{-3}A^0]$ d) $[ML^2T^{-3}A^{-1}]$
18. If $x = a - b$, then the maximum percentage error in the measurement of x will be
a) $\left(\frac{\Delta a + \Delta b}{a - b}\right) \times 100\%$ b) $\left(\frac{\Delta a}{a} - \frac{\Delta b}{b}\right) \times 100\%$
c) $\left(\frac{\Delta a}{a - a} + \frac{\Delta b}{a - b}\right) \times 100\%$ d) $\left(\frac{\Delta a}{a - a} - \frac{\Delta b}{a - b}\right) \times 100\%$
19. The unit of potential energy is
a) $g(\text{cm}/\text{sec}^2)$ b) $g(\text{cm}/\text{sec})^2$ c) $g(\text{cm}^2/\text{sec})$ d) $g(\text{cm}/\text{sec})$
20. The physical quantity having the dimensions $[M^{-1}L^{-3}A^2]$ is
a) Resistance b) Resistivity
c) Electrical conductivity d) Electromotive force