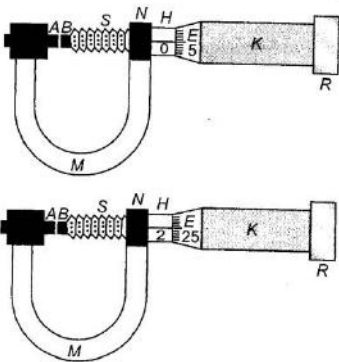


Topic :- UNITS AND MEASUREMENTS

- What is the area of a disc of radius 1.1 cm?
a) 3.8028571 cm^2 b) 3.8029 cm^2 c) 3.803 cm^2 d) 3.8 cm^2
- The physical quantity having the dimensions $[M^{-1}L^{-3}T^3A^2]$ is
a) Resistance b) Resistivity
c) Electrical conductivity d) Electromotive force
- Dimensions of magnetic field intensity is
a) $[M^0L^{-1}T^0A^1]$ b) $[MLT^{-1}A^{-1}]$ c) $[ML^0T^{-2}A^{-1}]$ d) $[MLT^{-2}A]$
- A spectrometer gives the following reading when used to measure the angle of a prism
Main scale reading : 58.5 degree
Vernier scale reading : 09 divisions
Given that 1 division on main scale corresponds to 0.5 degree. Total divisions on the vernier scale is 30 and match with 29 divisions of the main scale. The angle of the prism from the above data
a) 58.59 Degree b) 58.77 Degree c) 58.65 Degree d) 59 Degree
- Find the dimensions of electric permittivity
a) $[A^2M^{-1}L^{-3}T^4]$ b) $[A^2M^{-1}L^{-3}T^0]$ c) $[AM^{-1}L^{-3}T^4]$ d) $[A^2M^0L^{-3}T^4]$
- The radius of the sphere is $(4.3 \pm 0.1)\text{cm}$. The percentage error in its volume is
a) $\frac{0.1}{4.3} \times 100$ b) $3 \times \frac{0.1 \times 100}{4.3}$ c) $\frac{1}{3} \times \frac{0.1 \times 100}{4.3}$ d) $3 + \frac{0.1 \times 100}{4.3}$
- The dimensions of a rectangular block measured with calipers having least count of 0.01 cm are 5 mm \times 10 mm \times 5 mm. The maximum percentage error in the measurement of the volume of the block is
a) 5% b) 10% c) 15% d) 20%

8. In a new system of units, unit f mass is 10 kg, unit of length is 1 km and unit of time is 1 min. The value of 1 joule in this new hypothetical system is
 a) 3.6×10^{-4} new units b) 6×10^7 new units c) 10^{11} new units d) 1.67×10^4 new units
9. The wavelength associated with a moving particle depends upon power p of its mass m , q th power of its velocity v and r th power of planck's constant h . Then the correct set of values of p , q and r is
 a) $p = 1, q = -1, r = 1$ b) $p = 1, q = 1, r = 1$
 c) $p = -1, q = -1, r = -1$ d) $p = -1, q = -1, r = 1$
10. The circular scale of a screw gauge has 50 divisions and pitch of 0.5 mm. Find the diameter of sphere. Main scale reading is 2.



- a) 1.2 b) 1.25 c) 2.20 d) 2.25
11. The length of a cylinder is measured with a meter rod having least count 0.1 cm. Its diameter is measured with vernier callipers having least count 0.01 cm. Given that length is 5.0 cm. and radius is 2.0 cm. The percentage error in the calculated value of the volume will be
 a) 1% b) 2% c) 3% d) 4%
12. The energy (E), angular momentum (L) and universal gravitational constant (G) are chosen as fundamental quantities. The dimensions of universal gravitational constant in the dimensional formula of Planck's constant (h) is
 a) Zero b) -1 c) $\frac{5}{3}$ d) 1
13. Density of liquid in CGS system is 0.625 g cm^{-3} . What is its magnitude in SI system?
 a) 0.625 b) 0.0625 c) 0.00625 d) 625
14. Which of the following is dimensionless?
 a) $\frac{v^2}{rg}$ b) $\frac{v^2g}{r}$ c) $\frac{vg}{r}$ d) v^2rg
15. The unit of magnetic moment is
 a) TJ^{-1} b) JT^{-1} c) Am^{-2} d) Am^{-1}

16. The unit of reduction factor of tangent galvanometer is
a) *Ampere* b) *Gauss* c) *Radian* d) None of these
17. If pressure P , velocity V and time T are taken as fundamental physical quantities, the dimensional formula of force is
a) PV^2T^2 b) $P^{-1}V^2T^{-2}$ c) PVT^2 d) $P^{-1}VT^2$
18. Which of the following quantity is expressed as force per unit area
a) Work b) Pressure c) Volume d) Area
19. Which of the following cannot be regarded as an essential characteristic of a unit of measurement?
a) Inaccessibility b) Indestructibility
c) Invariability d) Reproducibility
20. If the unit of length and force be increased four times, then the unit of energy is
a) Increased 4 times b) Increased 8 times c) Increased 16 times d) Decreased 16 times

PE