Topic Name : Unit & Measurement Test-2
Test Duration : 60 minutes
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Instructor: Vikas Sharma Sir

Target: JEE Main & Advanced | NEET
Marking Scheme: +4 & -1
Test Platform: premiumvikas.com
Result Declaration: 10am,3rd May 2020

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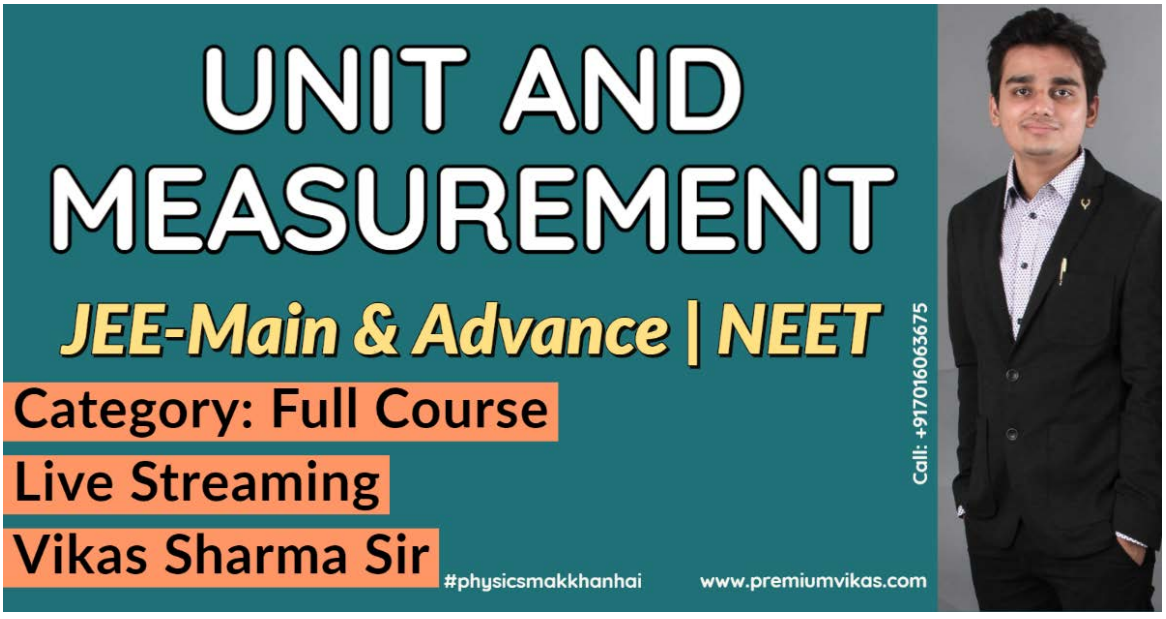

1. The dimension of the modulus of rigidity, is
(a) $[ML^{-2}T^{-2}]$ (b) $[MLT^{-2}]$
(c) $[ML^{-1}T^{-1}]$ (d) $[ML^{-1}T^{-2}]$

2. One nanometre is equal to
(a) 10^{-7} cm (b) 10^{9} cm
(c) 10^{-9} cm (d) 10^{-6} cm

3. What is the dimensional formula for the gravitational constant?
(a) $[M^{-1}L^{3}T^{-2}]$ (b) $[M^{-1}L^{3}T^{-1}]$
(c) $[M^{-2}L^{3}T^{-2}]$ (d) $[M^{-2}L^{-1}T^{-3}]$

4. Light year is the unit of
(a) velocity (b) time
(c) intensity of light (d) distance

5. Electron-volt (eV) is unit of
(a) energy (b) charge
(c) current (d) potential

6. The dimension of Plank's constant is
(a) $[ML^{2}T^{-1}]$ (b) $[ML^{3}T^{-1}]$
(c) $[ML^{-2}T^{-1}]$ (d) $[M^{0}L^{-1}T^{-3}]$

7. The dimensions of angular velocity, is
(a) $[M^{0}L^{0}T^{-1}]$ (b) $[M^{2}L^{0}T^{-1}]$
(c) $[MLT^{-2}]$ (d) $[ML^{2}T^{-2}]$

8. How many significant figures are there in 30.00?
(a) 2 (b) 4
(c) 3 (d) 1

9. Dimensions $[ML^{-1}T^{-1}]$ are related to
(a) torque (b) work
(c) energy (d) coefficient of viscosity

10. What is the dimensional formula of gravitational constant G?
(a) $[M^{-1}L^{3}T^{-2}]$ (b) $[M^{-2}L^{3}T^{-2}]$
(c) $[M^{-1}L^{2}T^{-2}]$ (d) $[M^{-1}L^{3}T^{-1}]$

11. A body of mass 20.00 g has volume 5.0 cm^3. The maximum possible error in the measurement of mass and volume respectively are 0.01 and 0.1 cm^3. The percentage error in the density will be nearest to
(a) 1% (b) 2%
(c) 11% (d) 25%

12. Speed in kilometre per hour in SI unit is represented by
(a) KMPH (b) $Kmhr^{-1}$
(c) Kmh^{-1} (d) kilometre/hour

13. Dimension of resistivity is
(a) $[ML^{2}T^{-2}I^{-1}]$ (b) $[ML^{3}T^{-3}I^{-2}]$
(c) $[ML^{3}T^{-2}I^{-1}]$ (d) $[ML^{2}T^{-2}I^{-2}]$

14. SI unit of velocity is
(a) m/s (b) $m\ sec^{-1}$
(c) mhr^{-1} (d) m/hr

15. The heat produced in a long wire is charactrised by resistance, current and time through which the current passes. If the errors in measuring these quatities are respectively 1%, 2% and 1%, then total error in calculating the energy produced is
(a) 4% (b) 6%
(c) 4/3% (d) 8%

16. What is the dimensional formula for the gravitational constant?
(a) $[M^{-1}L^{3}T^{-2}]$ (b) $[M^{-1}L^{3}T^{-1}]$
(c) $[M^{-2}L^{3}T^{-2}]$ (d) $[M^{-2}L^{-1}T^{3}]$

17. Length cannot be measure by
(a) fermi (b) micron
(c) debye (d) light year

18. The dimension of torque is
(a) $[MT^{-2}]$ (b) $[ML^{-1}T^{-1}]$
(c) $[ML^{3}T^{-2}]$ (d) $[ML^{3}T^{-3}]$

19. Using mass (M), length (L), time (T) and current (A) as fundamental quantities, the dimension of permeability is
(a) $[M^{-1}LT^{-2}A]$ (b) $[M^{-}L^{2}T^{-2}A^{-1}]$
(c) $[MLT^{-2}A^{-2}]$ (d) $[M^{-}LT^{-1}A^{-1}]$

20. Using mass (M), length (L), time (T) and current (A) as fundamental quantities, the dimension of permittivity is
(a) $[ML^{-2}T^{2}A]$ (b) $[M^{-1}L^{-3}T^{4}A^{2}]$
(c) $[MLT^{-2}A]$ (d) $[ML^{2}T^{-1}A^{2}]$

21. "Parsec" is the unit of
(a) time (b) distance
(c) frequency (d) angular acceleration

22. Dimension of electrical resistance is
(a) $[ML^2T^{-3}A^{-1}]$ (b) $[ML^2T^{-3}A^{-2}]$
(c) $[ML^3T^{-3}A^{-2}]$ (d) $[ML^{-1}L^3T^3A^2]$

23. The magnetic moment has dimensions of
(a) $[LA]$ (b) $[L^2A]$
(c) $[LT^{-1}A]$ (d) $[L^2T^{-2}A]$

24. Which of the following physical quantities do not have same dimensions?
(a) Pressure and stress
(b) Tension and surface tension
(c) Strain and angle
(d) Energy and work

25. In an electrical circuit containing L, C and R which of the following does not denote the dimensions of frequency?
(a) LC (b) $\frac{1}{\sqrt{LC}}$
(c) $\frac{1}{RC}$ (d) $\frac{R}{L}$

26. Lumen is the unit of
(a) luminous flux (b) luminosity
(c) illumination (d) quantity of light

27. Which of the following is matched wrongly?
(a) Oil drop experiment → Millikan
(b) Dual nature of light → de Brogile
(c) Uncertainty principle → Heisenberg
(d) None of these

28. The dimensions of specific resistance is
(a) $[ML^2T^{-2}A^{-1}]$ (b) $[ML^3T^{-3}A^{-2}]$
(c) $[ML^3T^{-2}A^{-1}]$ (d) $[ML^2T^{-2}A^{-2}]$

29. The dimensional formula of Planck's constant is
(a) $[ML^2T^{-1}]$ (b) $[ML^2T^{-2}]$
(c) $[ML^0T^{-2}]$ (d) $[MLT^2]$

30. If the energy, $E = G^p h^q c^r$, where G is the universal gravitational constant, h is the Planck's constant and c is the velocity of light, then the values of p, q and r are, respectively
(a) –1/2, 1/2 and 5/2 (b) 1/2, –1/2 and –5/2
(c) –1/2, 1/2 and 3/2 (d) 1/2, –1/2 and –3/2

31. Which of the following pairs does not have same dimensions?
(a) Impulse and momentum
(b) Moment of inertia and moment of force
(c) Angular momentum and Planck's constant
(d) Work and torque

32. What is the dimensions of magnetic field B in terms of C (= coulomb), M, L, T?
(a) $[M^1L^1T^{-2}C]$ (b) $[M^1L^0T^{-1}C^{-1}]$
(c) $[M^1L^0T^{-2}C]$ (d) $[M^1L^0T^{-1}C]$

33. Dimensional formula of ΔQ, heat supplied to the system is given by
(a) $[M^1L^2T^{-2}]$ (b) $[M^1L^1T^{-2}]$
(c) $[M^1L^2T^{-1}]$ (d) $[ML^1T^{-1}]$

34. Dimensional formula of angular momentum is
(a) $[ML^2T^{-1}]$ (b) $[M^2L^2T^{-2}]$
(c) $[ML^2T^{-3}]$ (d) $[MLT^{-1}]$

35. The pressure on a square plate is measaured by measuring the force on the plate and the length of the sides of the plate by using the formula $p = \frac{F}{l^2}$. If the maximum errors in the measurement of force and length are 4% and 2% respectively, then the maximum error in the measurement of pressure is
(a) 1% (b) 2%
(c) 8% (d) 10%

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