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# Questions:

## Multiple Choice Questions

1. Which of the following has the highest number of significant figures?
   (a) 0.007 $m^2$ (b) $2.64 \times 10^{24}$ kg (c) 0.0006032 $m^2$ (d) 6.3200 J
2. Which of the following pairs of physical quantities have same dimension?
   (a) force and power (b) torque and energy (c) torque and power (d) force and torque
3. The dimensional formula of Planck's constant h is
   (a) $[ML^2T^{-1}]$ (b) $[ML^2T^3]$ (c) $[MLT^{-1}]$ (d) $[ML^3T^{-3}]$
4. The dimensional formula for gravitational constant G is
   (a) $[ML^3T^{-2}]$ (b) $[M^{-1}L^3T^{-2}]$ (c) $[M^{-1}L^{-3}T^{-2}]$ (d) $[ML^{-3}T^2]$
5. 1 nano second is equivalent to _____.
   (a) $10^{-6}$s (b) $10^{-3}$s (c) $10^{-15}$s (d) $10^{-9}$s
6. One parallactic second is _____
   (a) $3.08 \times 10^{16}$ m (b) $1.49 \times 10^{11}$ m (c) $9.46 \times 10^{15}$ m (d) $1.66 \times 10^{-27}$ m
7. How many AU makes one metre?
   (a) $3.26 \times 10^{11}$AU (b) $1.496 \times 10^{11}$AU (c) $3.08 \times 10^{16}$ AU (d) $6.684 \times 10^{-12}$AU
8. The number of significant figures in 0.0006012 m is
   (a) 3 (b) 4 (c) 7 (d) 5
9. The number of significant figures in $2.64 \times 10^4$ kg is _____.
   (a) 2 (b) 4 (c) 5 (d) 3
10. How many $\mu$m present in one metre?
    (a) $10^{-6}$ $\mu$m (b) $10^6$ $\mu$m (c) $10^{-3}$ $\mu$m (d) $10^{-2}$ $\mu$m
11. The speed of an object v = 40 $ms^{-1}$. The same quantity of speed in $kmh^{-1}$ is _____.
    (a) 60 (b) 160 (c) 40 (d) 144
12. The value of $1^o$ is _____.
    (a) $1.745 \times 10^{-2}$ rad (b) $1.946 \times 10^{-11}$ rad (c) 3.6 rad (d) 3600 rad
13. What is the SI unit of linear momentum?
    (a) $ms^{-1}$ (b) $ms^{-2}$ (c) kg $ms^{-1}$ (d) kg $m^2$ $ms^{-1}$
14. A source having luminous intensity of one candela emits monochromatic radiation of frequency _____.
    (a) $5.4 \times 10^{14}$ Hz (b) $54 \times 10^{14}$ Hz (c) $4.5 \times 10^{14}$ Hz (d) $\frac{1}{683} Hz$
15. When a current of 1 ampere flowing through two parallel straight conductors. What amount of force per unit length acts between the conductors?
    (a) $1 \times 10^{-7}$N (b) $2 \times 10^{-7}$N (c) $3 \times 10^{7}$N (d) $4 \times 10^{-7}$N
16. One picofarad is equal to _____farad.
    (a) $10^{-18}$ (b) $10^{-12}$ (c) $10^{-6}$ (d) $10^{-24}$
17. The value of one Angstrom is _____.
    (a) $10^{10}$m (b) $10^{-10}$m (c) $10^{-8}$m (d) $10^{-15}$m
18. Inertia has the same unit as _____.
    (a) weight (b) force (c) mass (d) acceleration
19. Least count of metre scale _____.
    (a) 1 cm (b) 0.1 cm (c) 1 mm (d) 0.1 mm
20. Light year is used to measure _____.
    (a) distance between two stars (b) distance between two cities (c) distance between two electron (d) distance between two atoms
21. Which of the following is not the unit of time?
    (a) light year (b) astronomical unit (c) parsec (d) all the above
22. If A = 2.331cm and C = 2.1cm, then A + C = _____cm
    (a) 4.4 (b) 4 (c) 4.43 (d) 4.431
23. The sum of the numbers 436.32, 227.2 and 0.301 in appropriate significant figure is _____.
    (a) 663.82 (b) 663.8 (c) 664 (d) 6663.82
24. Which of the following digits are significant?
    (a) zero digits (b) zeros at the end without a decimal point (c) all zeros between two non-zeros digits, irrespective of the decimal point (d) all the above
25. Two quantities A and B have different dimensions which mathematical operation given below is physically meaningful?
    (a) A/B (b) A+B (c) A-B (d) A=B
26. The dimensional formula for relative density is _____.
    (a) $ML^{-3}$ (b) $M^oL^{-3}$ (c) $M^oL^oT^o$ (d) $M^oL^oT^{-1}$
27. Of the following_____ has dimensions.
    (a) strain (b) angle (c) gravitational constant (d) refractive index
28. _____ have the same dimensional formula.
    (a) Force and momentum (b) Density and linear density (c) Lightyear and wavelength (d) Stress and strain
29. Which of the following is dimensional constant?
    (a) Refractive index (b) Poisson's ratio (c) strain (d) gravitational constant
30. Identify the pair of physical quantities having the same dimensions.
    (a) Light year and period of a pendulum (b) Angular momentum and torque (c) Energy and Modulus of elasticity (d) Torque and work

31. The dimensions of $\frac{1}{\sqrt{\mu_0 \varepsilon_0}}$ are the same as those of _____.
(a) energy (b) acceleration (c) force (d) velocity

32. If E and B respectively, represent electric field and magnetic induction field, then the ratio $\frac{E}{B}$ has the dimensions of _____.
(a) angle (b) acceleration (c) velocity (d) displacement

33. The pair of quantities having same dimensions is _____.
(a) Impulse and Surface Tension (b) Angular momentum and Work (c) Work and Torque (d) Young's modulus and Energy

34. The damping force on an oscillator is directly proportional to the velocity, The units of the constant of proportionality are _____.
(a) $kgms^{-1}$ (b) $kgms^{-2}$ (c) $kgs^{-1}$ (d) kgs

35. Dimensional formula of self inductance is _____.
(a) $[MLT^{-2}A^{-2}]$ (b) $[ML^2T^{-1}A^{-2}]$ (c) $[ML^2T^{-2}A^{-2}]$ (d) $[ML^{-2}T^{-2}A^{-1}]$

36. TIle dimensional formula of torque is _____.
(a) $[ML^2T^{-2}]$ (b) $[MLT^{-2}]$ (c) $[ML^{-1}T^{-2}]$ (d) $[ML^{-2}T^{-2}]$

37. The dimensional formula of angular momentum is _____.
(a) $[ML^2T^{-2}]$ (b) $[ML^{-2}T^{-1}]$ (c) $[MLT^{-1}]$ (d) $[ML^2T^{-1}]$

38. The ratio of one nanometer to one micron is_____
(a) $10^{-3}$ (b) $10^{3}$ (c) $10^{-9}$ (d) $10^{-6}$

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

40. The dimensional formula for moment of inertia_____
(a) $ML^0T^{-2}$ (b) $ML^{-1}T^{-2}$ (c) $ML^{-2}T^{1}$ (d) $ML^2T^0$

41. Find odd one out_____.
(a) Newton (b) metre (c) candela (d) Kelvin

42. The smallest physical unit of time is_____.
(a) second (b) minute (c) microsecond (d) shake

43. The uncertainty contained in any measurement is_____.
(a) rounding off (b) error (c) parallax (d) gross

44. The unit of surface tension _____.
(a) $MT^{-2}$ (b) $Nm^{-2}$ (c) Nm (d) $Nm^{-1}$

45. $\frac{1}{12}$ of the mass of carbon 12 atom is_____.
(a) 1 TMC (b) mass of neutron (c) 1 amu (d) mass of hydrogen

46. Mass of an electron_____
(a) $10^{-34}$kg (b) $9.11\times10^{-34}$kg (c) $1.6\times10^{-31}$kg (d) $1.6\times10^{-27}$kg

47. Which of the following quantities is expressed as force per unit area?
(a) Pressure (b) Stress (c) Both (a) and (b) (d) None

48. The dimensional formula for heat capacity_____
(a) $[ML^2T^2]$ (b) $[M\,L^2\,K^{-1}]$ (c) $[M\,L^2\,T^2\,K^{-1}]$ (d) $[M\,L^2\,T^2\,K^{-1}]$

49. The triple point temperature of water is_____
(a) -273.16 K (b) 0 K (c) 273.16 K (d) 100 K

50. Unit of impulse_____
(a) $NS^2$ (b) NS (c) Nm (d) $Kgms^{-2}$

51. The ratio of energy and temperature is known as_____
(a) Stefen's constant (b) Boltzmann constant (c) Plank's constant (d) Kinetic constant

52. Dimensions $[M\,L^{-1}T^{-1}]$ are related to_____
(a) torque (b) work (c) energy (d) Coefficient of viscosity

53. Number of significant digits in 3256 _____.
(a) 1 (b) 2 (c) 3 (d) 4

54. Number of significant digits in 32005_____.
(a) 1 (b) 2 (c) 5 (d) 2

55. Number of significant digits in 2030_____.
(a) 1 (b) 2 (c) 3 (d) 4

56. Number of significant digits in 0.0342_____.
(a) 1 (b) 2 (c) 3 (d) 4

57. Number of significant digit in 20.00_____.
(a) 1 (b) 2 (c) 3 (d) 4

58. Number of significant digit in 0.030400_____.
(a) 6 (b) 5 (c) 4 (d) 3

59. Candella is the unit of
(a) plane angle (b) mole (c) luminous intensity (d) electric current

60. The S.I unit of gravitational potential is
(a) J (b) $J.Kg^{-1}$ (c) J.Kg (d) $J.Kg^2$

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