PHYSICS   CHAPTER 1

1. **SI units of solid angle is**
    (a) radian   (b) revolution
    (c) degree   (d) steradian

2. **Which one of the followings is not the SI unit of length?**
    (a) angstrom   (b) micron
    (c) radian   (d) parsec

3. **Which one of the followings is not the SI unit?**
    (a) kg   (b) mol
    (c) °C   (d) cd

4. **Which one of the followings is not the fundamental SI unit?**
    (a) kelvin   (b) ampere
    (c) poise   (d) metre

5. **Candela is the SI unit of**
    (a) charge   (b) luminous intensity
    (c) power   (d) refractive index

6. **1.2 kgm^{-3} when changed to gcm^{-3} reads**
    (a) 1.2×10^{-1} (b) 1.2×10^{-2}
    (c) 1.2×10^{-3} (d) 1.2×10^{-4}`

7. **Radius of a proton is equal to**
    (a) 1.2×10^{-13} cm   (b) 1.2×10^{-13} m
    (c) 1.2×10^{-14} m   (d) 1.2×10^{-10} m

8. **Which one of the followings represents the longest length?**
    (a) 1.24×10^{4} mm   (b) 1.24×10^{4} m
    (c) 1.24×10^{2} km   (d) 1.24×10^{3} dm

9. **Steradian is the angle subtended in**

(a) two dimensions
(b) three dimensions
(c) both in two and three dimensions
(d) none of these

10. **The absolute uncertainty in the measurement 15.4 cm is**
(a) 0.1 cm (b) 0.01 cm
(c) 0.05 cm (d) 0.5 cm

11. **The fractional uncertainty in a measurement is defined as**
(a) measured value – zero error
(b) $\dfrac{\text{measured value}}{\text{error}}$
(c) error × measured value
(d) $\dfrac{\text{error}}{\text{measured value}}$

12. **The fractional uncertainty in measurement 15.4 cm is**
(a). 0.006 (b) 0.0006
(c) 0.003 (d) none of these

13. **Which instrument is suitable for measuring the length of a metal bar about 10 cm long?**
(a) Screw gauge (b) Vernier Calliper
(c) Metre rod (d) External jaws of a calliper

14. **A metre rod is used to measure a length. The correct order of accuracy of the instrument is**
(a) 1 cm (b) 0.05 cm
(c) 0.01 cm (d) 0.1 cm

15. **A micrometer screw gauge is used to measure the diameter of a glass rod. The correct order of accuracy of the instrument is**
(a) 1 mm (b) 0.1 mm
(c) 0.01 mm (d) 0.0001mm

16. **Which one of the followings is not suitable for the measurement of time?**
(a) simple pendulum (b) pulse rate
(c) ticker timer (d) vibrating mass-spring system

17. **A simple pendulum can be used as a clock because**
(a) its time period is 1 s
(b) its time period is constant

(c)   its period of oscillation is same every where

(d)   it does not stop oscillating

18.   One giga means
(a) 10^9 (b) 10^{-9}
(c) 10^{-12} (d) 10^{12}

19.   One femto equals
(a) 10^{15} (b) 10^{12}
(c) 10^{-12} (d) 10^{-15}

20.   One micrometer equals
(a) 10^{-3} m   (b) 10^{-6} m
(c) 10^{-5} m   (d) 10^6 m

21.   An error of observation arising out of the negligence on the part of the person is called
(a) random error   (b) systematic error
(c) personal error   (d) common error

22.   Use of faulty apparatus introduces an error called
(a) experimental error   (b) designing error
(c) random error   (d) systematic error

23.   Random error can be corrected by
(a)   taking an observation carefully
(b)   using a precise instrument
(c)   taking several observations
(d)   calibrating the instrument

24.   Causes of systematic error in an instrument are
(a) unknown   (b) known
(c) arbitrary   (d) none of these

25.   Significant figures in a measured value indicate
(a)   the reading on an instrument
(b)   doubtful numbers
(c)   quantity which is reasonably reliable
(d)   accurate numbers

26.   The number of significant figures in the value 0.09810 are
(a) 4   (b) 3

(c) 6   (d) 5

27. **The number of significant figures in the value 1.90×10^{-31} are**
    (a) 34   (b) 28
    (c) 3   (d) 2

28. **The dimensions of weight are equal to the dimensions of**
    (a) weight density   (b) mass density
    (c) pressure   (d) force

29. **When rounded off to three significant figures, the value 6.735 should be written as**
    (a) 6.73   (b) 6.70
    (c) 6.74   (d) none of these

30. **9.845 is to be rounded off to three significant figures. The value should be written as**
    (a) 9.84   (b) 9.85
    (c) 9.80   (d) none of these

31. **Given $[q] = [M] [L^{-1}] [T^{-1}]$; v, A and t represent velocity, area and time respectively, which of the followings is true?**
    (a) $q = A \dfrac{\Delta v}{\Delta t}$ (b) $q = A \dfrac{\Delta t}{\Delta v}$

    (c) $q = \dfrac{1}{A} \dfrac{\Delta v}{\Delta t}$ (d) none of these

32. **Given $F = \dfrac{a}{t} + bt^2$ where F denotes force and t time, the dimensions of a and b are respectively**
    (a), $[MLT^{-1}]$ and $[MLT^{-4}]$ (b) $[LT^{-1}]$ and $[T^{-2}]$
    (c) $[T]$ and $[T^{-2}]$ (d) $[LT^{-2}]$ and $[T^{-2}]$

33. **The dimensions of angular displacement are**
    (a) $[L]$ (b) $[LT^{-1}]$
    (c) $[L^2]$ (d) $[L^0]$

34. **Which of the following quantities is not dimensionless?**
    (a) angle   (b) stress
    (c) Young's modulus   (d) relative density

35. **The dimensional formula for energy per unit area per second is**
(a) $[MT^{-1}]$ (b) $[MLT^{-1}]$
(c) $[ML^2T^{-1}]$ (d) $[MT^{-3}]$

36. **Use of dimensional analysis involves in**
(a)   finding the units of a quantity
(b)   deriving a mathematical formula
(c)   checking the correctness of an equation
(d)   all of these

37. **Numbers carry**
(a) no dimensions   (b) arbitrary dimensions
(c) dimensions but no units   (d) all of these

38. **Only those terms can be added or subtracted which have**
(a) different dimensions   (b) same dimensions
(c) no dimensions   (d) none of these

39. **The dimensions of angular velocity are**
(a) $[LT^{-1}]$ (b) $[T^{-1}]$
(c) $[L^2T^{-1}]$ (d) none of these

40. **The travel time of light from Earth to the moon (average distance = 3.86 $\times$ 10^8 m) is about**
(a) 8 seconds   (b) 1.20 seconds
(c) 1.20 minutes   (d) 12 seconds

Key to Test Chapter 1

1	**d**	21	**a**
2	**c**	22	**d**
3	**c**	23	**c**
4	**c**	24	**b**
5	**b**	25	**c**
6	**c**	26	**a**
7	**c**	27	**c**
8	**c**	28	**d**
9	**b**	29	**c**
10	**a**	30	**a**
11	**d**	31	**d**
12	**a**	32	**a**
13	**b**	33	**d**
14	**d**	34	**b**
15	**c**	35	**d**
16	**b**	36	**d**
17	**b**	37	**a**
18	**a**	38	**b**
19	**d**	39	**b**
20	**b**	40	**b**