CHAPTER # 1: MEASUREMENTS

1. The branch of physics which deals with the ultimate particles of which the matter is composed is:
   a) Plasma physics
   b) Atomic physics
   c) Nuclear physics
   d) Particle physics

2. The branch of physics which deals with atomic nuclei is called
   a) Acoustics
   b) Thermodynamics
   c) Magnetism
   d) Nuclear physics

3. Silicon is abundantly obtained from:
   a) Water
   b) Metal
   c) Sand
   d) Stones

4. The number of base units are:
   a) Three
   b) Five
   c) Seven
   d) Nine

5. Which of the following is a derived quantity:
   a) Force
   b) Mass
   c) Length
   d) Time

6. Which of the following is SI base unit?
   a) gram
   b) slug
   c) Newton
   d) kilogram

7. Which one of the following is not a unit of length:
   a) Angstrom
   b) Micron
   c) Radian
   d) Light year

8. Which is not a base unit in SI units?
   a) Kilogram
   b) Joule
   c) Ampere
   d) Kelvin

9. An example of derived unit is
   a) Candela
   b) Ampere
   c) Coulomb
   d) Mole

10. Candela is the SI unit of
    a) Charge
    b) Luminous intensity
    c) Power
    d) Refractive index

11. An alternate unit to $kgms^{-1}$ is
    a) Js
    b) Ns
    c) Nm
    d) N

12. The SI units of pressure in terms of base units are
    a) $kg\ m^{-1}\ s^{-2}$
    b) $kg\ m^{-1}\ s^{-3}$
    c) $kg\ m\ s^{-2}$
    d) $kg\ m^2\ s^{-2}$

13. The SI unit of plane angle is
    a) Steradian
    b) Radian
    c) Degree
    d) Candela

14. Steradian is the angel which lies in:
    a) One dimension
    b) Two dimensions
    c) Three dimensions
    d) None

15. The SI unit of the solid angle is
    a) Degree
    b) Steradian
    c) Revolution
    d) Radian

16. The solid angle subtended at the center of sphere by an area of its surface equal to the square of radius of the sphere is called:
    a) Degree
    b) Radian
    c) Minute
    d) Steradian

17. SI unit of pressure is
    a) $N\ m^2$
    b) $N^2\ m$
    c) $N\ m^{-2}$
    d) $N^{-2}\ m$

18. Which is a derived unit:
    a) Candela
    b) Ampere
    c) Kelvin
    d) Newton

19. The unit of force is   and its symbol is   which is the correct pair?
    a) Newton, n
    b) Newton, N
    c) newton, n
    d) newton, N

20. Which one is the correct representation of the unit of pressure?
    a) Newton/Meter^2
    b) newton/meter^2
    c) Newton/meter^2
    d) Newton/Meter^2

21. Which of the following is least multiple:

   a) Pico
   b) Femto
   c) Nano
   d) Atto

22. Which one is the highest power multiple?

   a) giga
   b) mega
   c) kilo
   d) deca

23. The prefix pico is equal to

   a) 10^{-6}
   b) 10^{-12}
   c) 10^{-18}
   d) 10^{-11}

24. The SI unit of intensity of light is:

   a) Mole
   b) Kelvin
   c) Candela
   d) Ampere

25. 0.0023 can be expressed in scientific notation as:

   a) 23×10^{-4}
   b) 0.23×10^{-2}
   c) 2.3×10^{-3}
   d) None

26. 1024 can be written in scientific notation as

   a) 1.024×10^{3}
   b) 2^{10}
   c) 0.000976
   d) 1/0300097

27. Error occurs due to negligence and inexperience of a person is:

   a) Systematic Error
   b) Random Error
   c) Personal Error
   d) None

28. Error in measurement may occur due to

   a) Inexperience of a person
   b) The faulty apparatus
   c) Inappropriate method
   d) Due to all reasons in a, b and c

29. In any measurement the significant figures are

   a) All accurately known and all doubtful digits
   b) Only accurately known digits
   c) Only doubtful digits
   d) All accurately know digits and the first doubtful digit

30. Number of significant figures in 0.0173 are:

   a) Three
   b) Four
   c) Five
   d) Two

31. A student added three figures 72.1, 3.32 and 0.003. The correct answer regarding the rules of the addition of the significant figures will be

   a) 75.423
   b) 75.42
   c) 75.4
   d) 75

32. If the reading is taken with measuring scale whose minimum division is 1mm, then the correct reading is:

   a) 0.2145 m
   b) 0.21 m
   c) 0.214 m
   d) None

33. 75.560 is round off as:

   a) 75.6
   b) 75.7
   c) 76.00
   d) None

34. Zero to the right of non zero digits are:

   a) Significant
   b) Not significant
   c) May or may not be significant
   d) None

35. What is the number of significant figures in the measurement recorded as $8.70 \times 10^{4} \ kg$?

   a) 1
   b) 3
   c) 4
   d) 7

36. Zero is not significant only if it

   a) Lies to the left of a significant digit
   b) is between two digits
   c) is to the right of a significant digit
   d) is before the decimal point

37. Significant figures in 0.000846 are

   a) Six
   b) Four
   c) Seven
   d) Three

38. The sum of the three numbers, 2.7543, 4.10 and 1.273, up to correct decimal places is

   a) 8.1
   b) 8.13
   c) 8.1273
   d) 8.127

39. 73.650 rounded off up to one decimal is

   a) 73.6
   b) 73.7
   c) 74.00
   d) 73.65

40. Absolute uncertainties are added in following operations:

   a) Multiplication
   b) Division
   c) Subtraction
   d) None

41. An accurate measurement is one which has less

   a) Precision
   b) Absolute uncertainty
   c) Fractional uncertainty
   d) None

42. If $x_1 = 10.5 \pm 0.1\ cm$ and $x_2 = 26.8 \pm 0.1\ cm$, then $x = x_2 - x_1$ is given as:

   a) $16.3 \pm 0.1\ cm$
   b) $16.3 \pm 0.2\ cm$
   c) $16.1 \pm 0\ cm$
   d) $16.3 \pm 0\ cm$

43. Smaller is the least count of the instrument, more is the measurement:

   a) Accurate
   b) Precise
   c) Accurate and precise
   d) None of these

44. Which is a correct record for the diameter of wire when measured my a screw gauge of least count 0.001 cm:

   a) 2.3 cm
   b) 2.31 cm
   c) 2.312 cm
   d) 2.3124 cm

45. Which one of the following is not regarded as a fundamental quantity in Physics?

   a) Length
   b) Mass
   c) Time
   d) Weight

46. The dimensions of torque are:

   a) $[ML^{-1}T]$
   b) $[ML^2T^{-1}]$
   c) $[ML^2T^{-2}]$
   d) $[ML^{-2}T^2]$

47. Dimensions for acceleration due to gravity is

   a) $[MLT^{-2}]$
   b) $[MLT]$
   c) $[LT^{+2}]$
   d) $[M^0LT^{-2}]$

48. As $F_d = 6\pi\eta rv$, the dimension of coefficient of viscosity η is

   a) $[ML^{-1}T^{-1}]$
   b) $[MLT^{-1}]$
   c) $[ML^{-2}T^{-1}]$
   d) $[ML]$

49. $[M^0L^0T^{-1}]$ refers to quantity

   a) Velocity
   b) Time period
   c) Frequency
   d) Force

50. The dimension of the following pair is not the same

   a) work & energy
   b) work and torque
   c) Momentum & impulse
   d) Mass & moment of inertia

51. Unit of G is ?

   a) $Nm^2\ kg^2$
   b) $N\ m^2\ kg$
   c) $N\ m^2\ kg^2$
   d) None

52. The dimension of force is

   a) MLT^1
   b) MLT^2
   c) ML^1T
   d) ML^1T^2

53. ML^1T^2 is the dimension of

   a) Force
   b) Pressure
   c) Momentum
   d) Energy

54. A light year is a unit for

   a) Time
   b) Distance
   c) Velocity
   d) Time period

55. The dimensional formula for the quantity light year is:

   a) $[LT^{-1}]$
   b) $[T]$
   c) $[ML^2T^{-2}]$
   d) $[L]$

56. The dimensions of stain are

   a) $[MLT^2]$
   b) $[ML^2T]$
   c) $[M^0\ L^0\ T^0]$
   d) $[M^1L^1T^1]$

57. How many years in one second?

   a) 3.1×10^6 years
   b) 3.1×10^{-7} years
   c) 3.1×10^{-8} years
   d) 3.1×10^{-9} years

Q. No.	Ans.	Q. No.	Ans.	Q. No.	Ans.