Unit 1: Units & Measurements (CO1)

1) ----- -----Is the branch of science deal with study of matter, energy and their transformation in nature.
   (a) physics   (b)chemistry   (c) biology   (d)math

2) -------- is basically a source of communication in engineering and science.
   (a)Measurement   (b)accuracy   (c)unit   (d) counting

3) Necessity of measurement in science--------------------------------
   (a)To identify varies laws, To verify varies laws   (b) number, Accuracy
   (c) time, mass   (d) measurement, development.

4) Necessity of measurement in engineering------------------------------
   (a) Accurate prediction of physical quantities, Quality assurance of product
   (b) Accurate prediction of chemical quantities, Quality assurance of product
   (c) Accurate prediction of biological quantities, Quality assurance of product
   (d) Accurate prediction of mathematical quantities, Quality assurance of product

5) The physical quantities which don't depend on any other quantities for its measurement are called ---
   (a)fundamental physical quantities   (b) Derived physical quantities
   (c) mathematical quantities   (d) chemical quantities

6) The physical quantities which depend on any other quantities for their measurement are called -------
   (a) fundamental quantities   (b) Derived physical quantities
   (c) mathematical quantities   (d) chemical quantities

7) The unit of fundamental physical quantity is called --------------
   (a) fundamental unit   (b) Derived unit   (c) magnitude   (d) quantity

8) The unit of Derived physical quantity is called --------------
   (a) Derived unit   (b) fundamental unit   (c) magnitude   (d) quantity

9) There are -------- fundamental physical quantity
   (a)7   (b)6   (c)5   (d)8

10) Length, mass, time are----------- quantities
   (a) fundamental physical quantities   (b) Derived physical quantities
   (c) mathematical quantities   (d) chemical quantities

11) Electric current, thermodynamic temperature, Amount of substance, luminous intensity are---- quantities
   (a) fundamental physical quantities   (b) Derived physical quantities
   (c) mathematical quantities   (d) chemical quantities

12). -------------, --------------- are supplementary physical quantity
   (a) Plane angle , solid angle   (b)length, time   (c)mass, current   (d) temperature, angle

13).Unit of Mass in SI system is----------
   (a)Kilogram   (b) second   (c) ampere   (d) candela

14) Unit of Time in SI system is--------------
   (a) second   (b) Newton   (c) Joule/s   (d)   Kilogram- meter

15) Unit of Electric current in SI system is-----------
   (a)Ampere   (b) Newton   (c) Joule/s   (d)   Kilogram- meter

16) Unit of thermodynamic temperature in SI system is------------
   (a)Kelvin   (b) Newton   (c) Joule/s   (d)   Kilogram- meter

17) Unit of Amount of substance in SI system is----------------
   (a)Mole   (b) radian   (c) steradian   (d) degree

18) Unit of luminous intensity in SI system is-----------------
   (a)Candela   (b) radian   (c) steradian   (d) degree

19) Unit of Plane angle in SI system is-------------------

(a)Radian   (b) dyne   (c) steradian   (d) degree

20) Unit of solid angle in SI system is-------------
          (a)Steradian   (b)radian   (c)dyne   (d)degree

21) Unit of area in SI system is-------------
          (a) square meter   (b)meter   (c) ampere   (d) tesla

22) The parameter used for calculating weight of the man is---------
          (a) Length   (b) Mass   (c) Time   (d) None of these

23) The quantity measured in Kelvin is ------------
          (a) length   (b) mass   (c) time   (d) temperature

24) The unit of acceleration in S.I. is--------
          (a) m/s   (b) km/h   (c) m/s^2 (d) km/h^2

25) The unit of force in C.G.S.is--------
          (a) pound force (b) Newton   (c) kg force   (d) dyne

26) Kilogram meter per second square is the unit of ----------
          (a) force   (b) pressure   (c) work   (d) velocity

27) The unit of work is-----------
          (a) Newton-meter (b) Newton   (c) Joule/s   (d) Kilogram- meter

28) The unit of plane angle is--------
          (a) degree Celsius (b) radian   (c) steradian   (d) degree

29) The length of the table is 3 meter, here 3 is the ----
          (a) standard   (b) unit   (c) magnitude   (d) quantity

30) Out of the fallowing which is not a requirement of standard unit------
          (a) is should be same for all quantities (b) it should be universally accepted
          (c) it should be well defined   (d) it should be fixed with time and place

31) Very small time intervals are accurately measure by
          (a) White dwarfs   (b) Quartz clocks   (c) Atomic clocks   (d) Pulsars

32) The........used for measurement of physical quantity is called unit of that quantity.
          (a) Quantity   (b) dimension   (c) time   (d) standard

33) A quantity which can be measured (computed, quantified or enumerated) is known as......
     (a) Fundamental quantity   (b) derived quantity
     (c) physical quantity   (d) mechanical quantity

34) Length of table is 3 meter. In this example, 3 is the ------------ and meter is the -------- of that quantity.
          a) Magnitude, standard b) number, Accuracy
          c) standard, Magnitude   d) unit, Magnitude

35) Any measurement consist of two parts
          a) Magnitude, standard   b) number, Accuracy
          c) time, mass   d) measurement, development.

36) Which of the following units is a fundamental unit?
          a) Mole   b) watt   c) lumen   d) joule

37) Which of the following units is a fundamental unit?
          a) Mass   b) watt   c) lumen   d) joule

38) Which of the following units is a fundamental unit?
          a) Meter   b) watt   c) lumen   d) joule

39) Which of the following units is a fundamental unit?
          a) time   b)watt   c)lumen   d)joule

40) Which of the following units is a fundamental unit?
          a) time   b)watt   c)lumen   d)joule

41) Which of the following units is a fundamental unit?
          a) kilogram   b)watt   c)lumen   d)joule

42) Which of the following units is a fundamental unit?
          a) ampere   b)watt   c)lumen   d)joule

43) Which of the following units is a fundamental unit?
          a) Kelvin   b) watt   c) lumen   d)joule

44) Which of the following units is a fundamental unit?

           a) candela   b)watt   c)lumen   d)joule

45) Which of the following units is a derived unit?

           (a) meter   (b) mole   (c) ampere   (d)watt

46) Which of the following units is a derived unit?

           (a) mole   (b) meter   (c) second   (d)lumen

47) Which of the following units is a derived unit?

           (a) kilogram (b) second   (c) Kelvin   (d)coulomb

48) Which of the following units is a derived unit?

           (a) second   (b) meter   (c) candela   (d) Henry

49) Which of the following units is a derived unit?

           (a) second   (b) meter   (c) ampere   (d) meter/second

50) Which of the following units is a derived unit?

           (a) second   (b) meter   (c) ampere   (d) Newton

51) Which of the following units is a derived unit?

           (a) second   (b) meter   (c) ampere   (d) ampere/meter

52) Which of the following units is a derived unit?

           (a) second   (b) meter   (c) ampere   (d) meter/second square

53) Which of the following units is a derived unit?

           (a) second   (b) meter   (c) ampere   (d) kilogram-meter/second

54) Which of the following units is a derived unit?

           (a) candela   (b) meter   (c) ampere   (d) candela/square meter

55) Which of the following units is a derived unit?

           (a) candela   (b) meter   (c) ampere   (d) tesla

56) Which of the following units is a derived unit?

           (a) candela   (b) meter   (c) ampere   (d) candela/square meter

57) Which of the following the fundamental quantity ......

           (a) length   (b) speed   (c) mass   (d) time

58) Out of the following the fundamental quantity is.......

           (a) Density   (b) pressure   (c) momentum   (d) time

59) Physical quantity which depends on one or more fundamental quantities for their measurement is called as.......

     (a) Fundamental quantity   (b) derived quantity

     (c) MKS quantity   (d) CGS quantity

60) Which of the following is not a fundamental unit?

           (a) meter   (b) kilogram   (c) Newton   (d) second

61) Out of the following the derived unit is....

           (a) meter   (b) kilogram   (c) Newton   (d) joule

62) Pascal is the S.I. unit of.....

           (a) force   (b) pressure   (c) density   (d) momentum

63) The system of units which are in use are......

     a) C.G.S., M.K.S., P.S.T. and S.I.   (b) C.G.S., M.K.S., V.I.T. and S.I.

     (c) C.G.S., M.K.S., P.S.T. and F.I.   (d) C.G.S., M.K.S., F.P.S. and S.I.

64) MKS means......

           (a) micro-kg-sec   (b) milli-kilo-s (c) m-kg-s   (d) micro-kilo-s

65) In M.K.S. system, the units of length, mass and time are.......

     (a) millisecond, kilohertz and second   (b) meter, kilogram and second

     (a) millisecond, kilobyte and second   (b) mile, kilogram and second

66) CGS means

           (a) calorie-grade-sec   (b) cm-g-sec   (c) calorie-g-sec   (d) cm-grade-sec

67) The units of length, mass and time are centimeter, gram and second which are used in the ....   system.

           (a) C.G.S.   (b) M.K.S.   (c) F.P.S.   (d) S.I.

68) FPS means.....

           (a) ft-lb-s   (b) farad-Pico-s   (c) femto-pound-s   (d) foot Pico-s

69) 1 gigahertz means.....

(a) 10^6 Hz   (b) 10^3 Hz   (c) 10^{12} Hz   (d) 10^9 Hz

70) 1 millimeter means.......

       (a) 10^{-2} m   (b) 10^{-3} m   (c) 10^{-6} m   (d) 10^{-9} m

71) 10^{-6} meter means....

       (a) 1mm   (b) 1 cm   (c) 1nm   (d) 1um

72) 1 nanometer equals to.....

       (a) 10^{-9} m   (b) 10^{-6} m   (c) 10^{-3} m   (d) 10^{-1} m

73) The SI unit of intensity is _____ ,

       (a) ^{0}c   (b) ^{0}k   (c) ^{0}F   (d) calorie

74) The SI unit of luminous intensity is_____ ,

       (a) ampere   (b) flux   (c) candela   (d) Weber

75) The SI unit of amount substance is_____ ,

       (a) Gram   (b) candela   (c) kilogram   (d) mole

76) The SI unit of solid angle is_____ ,

       (a) degree   (b) radian   (c) steradian   (d) degree Celsius

77) The SI unit of temperature gradient is_____ ,

       (a) ^{0}c/m   (b) ^{0}k/m   (c) m/^{0}k   (d) ^{0}c/cm

78) The unit of area in M.K.S. system is........

       (a) hectare   (b) meter square   (c) guntha   (d) square feet

79) centimeter per second is the unit of speed in.......

       (a) S. I. system   (b) F.P.S. system   (c) M.K.S. system   (d) C.G.S. system

80) The dimensions of a physical quantity are the ... to which fundamental units must be....to obtain the unit of a given Physical quantity

       (a) scales calibrated   (b) system, scaled   (c) powers, raised   (d) false

81) To decide dimensions of a physical quantity, the unit of time is expressed by....

       (a) 'S'   (b) 'l'   (c) 'M'   (d) 'T'

82) Dimensional formula for 'area' is.....

       (a) $[L^2M^0T^0]$ (b) $[L^2M^{-1}T^0]$ (c) $[L^0M^2T^1]$ (d) $[L^0M^0T^2]$

83) Dimensional formula for 'density' is.....

       (a) $[L^1M^{-3}T^0]$ (b) $[L^{-3}M^1T^0]$ (c) $[L^1M^0T^3]$ (d) $[L^3M^1T^0]$

84) Out of the following which physical quantity has dimensional formula $[L^{-1}M^1T^2]$?

       (a)   force   (b) acceleration (c) velocity   (d) density

85) The Dimensional formula for velocity is--------

       (a) $[L^1M^0T^1]$ (b) $[L^1M^2T^1]$ (c) $[L^{-1}M^1T^0]$ (d) $[L^1M^1T^{-1}]$

86) In the dimensional equation $[L^a,M^b,T^c]$___ $[^a,^b,^c,]$ are called

       (a) Dimensional formula   (b) dimensions

       (c) basic quantities   (d) derived   quantities

87) $[L^1M^0T^{-1}]$ are the dimensions of the quantity.....

       (a) acceleration   (b) density   (c) speed   (d) area

88) Dimensions of...and are same.

       (a) pressure, stress   (b) work, force   (c) velocity, acceleration   (d) Length, mass

89) Error is .....in a given measurement.

       (a) mistake   (b) accuracy   (c) uncertainty   (d) certainty

90) The difference between true value and measured value is known as.............

       (a) error   (b) precision   (c) mistake   (d) accuracy

91)_____cannot be eliminated but they can be minimized

       (a) errors   (b) mistake   (c) accuracy   (d) precision

92).An error caused due to faulty instrument is called ......

       (a) systematic error   (b)random error   (c)personal error   (d)constant error

93). For less error, measurement is

       (a) more accurate   (b)less accurate

(c) constant accurate (d) both (a) and (b)

94). What is the unit for measuring the amplitude of a sound?
(a) Decibel (b) Coulomb (c) Hume (d) Cycles

95). One nanometer is equal to,
(a) 10^{-6} m (b) 10^{-8} m (c) 10^{-9} m (d) 10^{-5} m

96). One fathom is equal to
(a) 6 feet (b) 6 meters (c) 60 feet (d) 100 cm

97). Light year is a measurement of
(a) Speed of airplanes (b) Speed of light
(c) Stellar distances (d) Speed of rockets

98). One kilometer is equal to how many miles?
(a) 0.84 (b) 0.5 (c) 1.6 (d) 0.62

99). 'Bar' is the unit of
(a) Temperature (b) Heat (c) Atmospheric pressure (d)Current

100) Nautical mile is a unit of distance used in
(a) Navigation (b) road mile (c) Astronomy (d) Measuring the boundaries

101) How many dynes are there in 1 gram weight?
(a) 900 (b) 375 (c) 981 (d) 250

102) Joule is the unit of (a) Temperature (b) pressure (c) Energy
(d) Heat

103) how many ergs are in 1 Joule (a) 10^2 (b) 10^4 (c) 10^6 (d) 10^7

104) . Very small time intervals are accurately measure by
(a) White dwarfs (b) Quartz clocks (c) Atomic clocks (d) Pulsars

105). Electric current is measure by
(a) Commentator (b) Anemometer (c) Ammeter (d) Voltmeter

106). One horse power is equal to
(a) 746 watts (b) 748 watts (c) 756 watts (d) 736 watts

107). Kilowatt is a unit to measure
(a) Work (b) Power (c) Electricity (d) Current

108). Kilohertz is a unit which measures
(a) Power used by a current of one ampere (b) Electromagnetic radio wave frequencies
(c) Voltage (d) Electric resistance

109). One Joule is equal to
(a) 10^2 ergs (b) 10^4ergs (c) 10^6ergs (d) 10^7ergs

110). Fathom is the unit of
(a) sound (b)Depth (c) Frequency (d)Distance

111) Light year is a unit of
(a) time (b) distance (c) sunlight intensity (d) mass

112). The dimensional formula for Planck's constant is
(a) [MLT] (b) $[ML^2T^{-1}]$ (c) $[M^2L^2T^{-1}]$ (d) $[ML^1T^{-1}]$

113). The surface tension of a liquid is 70 dyne/cm. In MKS system its value is
a) 70 N/m (b) 7×10^{-2} N/m (c) 7×10^2 N/m (d) 7×10^3 N/m

114). The dimensions of Kinetic energy is same as that of
(a) Force (b) Pressure c) Work (d) Momentum

115). At 4° C, the density of water is equal to
(a) 10^{-3} kg m^{-3} (b) 10^{-2} kg m^{-3} (c) 10 kg m^{-3} (d) 10^3 kg m^{-3}

116). One watt hour contains how many joules?
(a) 3.6×10^8 J (b) 3.6×10^2 J (c) 3.6×10^3 J (d) 10^{-3} J

117). Which of the following pairs has the same dimensions?
(a) Specific Heat and Latent Heat (b) Impulse and Momentum
(c) Surface Tension and Force (d) Moment of Inertia and Torque

118). Electron volt is a unit of
(a) Charge (b) Potential difference (c) Energy (d) Magnetic Force

119). There are 20 divisions in 4 cm of the main scale. The vernire scale has 10 divisions. The least

count of the instrument is

    (a) 0.05 cm   (b) 0.5 cm   (c) 5.0 cm   (d) 0.005 cm

120). $[ML^{-1}T^{-2}]$ is the dimensional formula of

    (a) force   (b) coefficient of friction   (c) modulus of elasticity   (d) energy

121) The dimensional formula of coefficient of viscosity is

    (a) $[MLT^{-1}]$ (b) $[M^{-1}L^2T^{-2}]$ (c) $[ML^{-1}T^{-1}]$ (d) none of these

122). On the basis of dimensional equation, the maximum number of unknown that can be found, is

    (a) one   (b) two   (c) three   (d) four

123). If v stands for velocity of sound, E is elasticity and d the density, then find x in the equation
$v = (d/E)^x$

    (a) 1   (b) ½   (c) 2   (d) -1/2

124). The multiplication of 10.610 with 0.210 up to correct number of significant figure is

    (a) 2.2281   (b) 2.228   (c) 2.22   (d) 2.2

125). The S.I. unit of universal gas constant is

    (a) Watt K-1mol-1   (b) N K-1mol-1   (c) JK-1mol-1   (d) erg K-1mol-1

126). Dimensional formula of thermal conductivity is

    (a) $ML^2T^{-3}\theta^{-1}$ (b) $ML^2T^{-2}\theta^{-4}$ (c) $ML^2T^{-2}\theta^{-1}$ (d) $MLT^{-3}\theta^{-1}$

127). Three measurements 7.1J, 7.2J and 6.7J are made as experiment the result with correct number
of significant figures is

    (a) 7.1 J   (b) 7.06 J   (c) 7.0 J   (d) 7J

128). Substances which larger masses are usually measured in

    (a) Kilograms   (b) grams   (c) tones   (d) metric tones

129). An instrument which gives a level of high accuracy than mechanical watch is

    (a) electronic stopwatch   (b)stop clock   (c)pendulum clock   (d)hour glass

130). In SI system unit of area is

    (a) meter   (b)square   (c) meter square   (d)meter cube

131). A single system on which all scientists all over the world agree for units of measurement is called

    (a) SI units   (b) International System of units   (c) both a and b   (d) universal system

132). Electronic stop watch gives a display of digital reading along with accuracy up to

    (a) 0.01s   (b) 0.1s   (c)0.10s   (d)1s

133).An average speed of an aero plane is equal to

    (a)300m/s   (b)100m/s   (c)500m/s   (d)50m/s

134). Unit of Force is Newton and its symbol is

    (a)N   (b) F   (c) A   (d)G

135). If symbol of unit is a capital letter still its unit name will start from   (a) small case letter   (b)capital letter   (c) italic letter   (d) bold letters

136).To change SI units by ten into smaller or bigger units they uses   (a) prefixes   (b)suffixes (c) symbols   (d) ratios

137). Mercury thermometer is used to measure exact

    (a) time   (b) length   (c)temperature   (d)pressure

138). First made instrument by Egyptians in year 800 BC for measuring time was

    (a) sundial   (b)compass   (c)stop watch   (d)pendulum clock

139). In SI system unit for speed is written as

    (a) meter   (b)meter/sec   (c)meter/hour   (d)km/sec

140). In science objective and precise observationsare mostly used which are   (a) qualitative   (b) quantitative   (c) both a and b   (d) respective141).Most common used instrument to measure length in laboratory is a (a) meter ruler   (b) half meter ruler   (c) both a and b   (d) vernier caliper

142). Higher speed is seen in an

    (a) faster moving object   (b) slower moving object   (c)constant moving object   (d)still object

143). An average speed is equal to total distance which is travelled divided by

    (a) taken time   (b)speed limit   (c)direction   (d)area

144). Types of balance includes

    (a) beam balance   (b)electronic balance   (c)both a and b   (d)natural balance

145). In old days methods of measuring were

    (a)Inaccurate   (b)correct   (c)accurate   (d)perfect

146).In our everyday life activities, we need

(a)estimations   (b) accurate measurements   (c) both a and b   (d) appearances

147). For very short intervals we mostly use
        (a)stop clocks   (b) stop watches   (c)both a and b   (d)wall clocks

148). Apparatus commonly used to measure volume of liquids is (a) measuring cylinder   (b)measuring tapes
(c) jar   (d) cylinder149).Standard meter is defined as distance which is travelled by light in 1/299792458 of a
        second   through   (a)vacuum   (b) space   (c) air   (d) water

150). Hour glass was used in past days to know
        (a)time   (b)length   (c)mass   (d)volume

151).Sonya is tall is observation which is
        (a)qualitative   (b) quantitative   (c) both a and b   (d)respective

152). Length of distance which is covered in specific time is called
        (a) distance   (b) displacement   (c) speed   (d) force

153).Special feature of a Vernier caliper is that it can measure up to   (a).0.1mm   (b)1mm   (c)2mm
            (d)0.10mm154). Sum of amount of matter in a substance is called its
        (a) mass   (b) weight   (c) length   (d) volume

155). Amount of 1 liter contains
        (a) 100ml   (b) 1000ml   (c) 10mm   (d)10kg

158). 10,000 m/sec is speed of a
        (a) aero plane   (b) rocket   (c) satellite signal   (d) car

159).Kilo means in SI is one
        (a) thousand   (b) hundred   (c) ten   (d) million

160) The errors due to sudden change in experimental conditions are called
        (a) instrumental errors   (b) systematic errors
        (c)random errors   (d) force errors

161). Smallest division which is found in a measuring tape is
            (a) 1mm   (b) 10mm   (c) 5mm   (d) 0mm

162). To measure shorter distances or lengths one can use
        (a) meter ruler   (b)half meter ruler   (c)both a and b   (d)Vernier caliper

163). Km are used to measure
        (a) shorter distance   (b)longer distances   (c)toys   (d)bottles

164). In equation form speed is written as
        (a) time=distance/speed   (b)distance=speed*time
        (c)speed=distance travelled/time taken   (d) all of them

165). Metric system is a system which is standard of
        (a) measurement   (b)living things   (c)experimenting   (d)analysis

166).Instrument which can be used to measure length includes
        (a) measuring tapes   (b) meter ruler   (c) Vernier caliper   (d) all of them

167). Vernier caliper helps in measuring
        (a) external diameter   (b)internal diameter
        (c) thickness and depth of narrow tubes   (d) all of them

168). Error which is most common in measurements is due to wrong placement of eye while taking readings is called
        (a) parallax error   (b)eye error   (c)common error   (d)free error

169). Volume of liquids can be measured by using different instruments which includes
        (a)cylinders   (b)volumetric flasks   (c)burettes or pipettes   (d)all of them

170). Road signs like 50 km/h are warning to drive in given
        (a)area   (b)speed limit   (c)direction   (d) distance

171). In SI system unit of volume is
        (a) meter square   (b) cubic meter   (c)meter   (d)kilometers

172). To measure shorter lengths with their accurate reading we use
        (a) measuring tapes   (b)meter ruler   (c)Vernier caliper   (d)all of them

173). Kilogram standard is kept in France which is a metal cylinder made of
        (a) platinum   (b)iridium   (c)both a and b   (d)iron

174). To measure mass instrument used is a
        (a)balance   (b)cylinder   (c)weight machine   (d)flask

175). Distances up to several hundred meters are measured by help of a
        (a)measuring tapes   (b)meter ruler   (c)Vernier caliper   (d)all of them

176). 0.1mm is accuracy of a
        (a)measuring tapes   (b)meter ruler   (c)Vernier caliper   (d)_a and b

177). In physics, a common instrument to measure diameter of a circle is known as
  (a)Rule (b)measuring tape (c)calipers (d)inch tape

178). A physical quantity consists of a
  (a)Analogical Magnitude (b)Numerical magnitude
  (c)Alphabetical Magnitude (d)Symbolic Magnitude

179). Range of Vernier calipers is
  (a)1 cm to 10 cm (b)1 cm to 5cm (c)1 cm to 6 cm (d)1 cm to 20 cm

180). Precision of micrometer screw gauge is
  (a)0.1 cm (b)0.01 mm (c)0.1 mm (d)0.01 m

181). Range of measuring tape is
  (a)1 meter (b) several meters (c) two meters (d)half meter

182). Precision of Vernier calipers is
  (a)1 mm (b)1 cm (c)0.1 mm (d)0.1 cm

183). Minimum length an instrument can measure is called its
  (a)accuracy (b)estimate (c)precision (d)limitations

184). SI unit for length is
  (a)centimeter (b)inches (c)meter (d)yards

185). The symbol to represent "Amount of Substance" is _____
  (a)A (b)K (c)cd (d)mol

186). Quantities other than base quantities are termed as
  (a)Derived quantities (b)Base quantities (c)Professional quantities (d)Energetic quantities

187). The reference standard used for the measurement of a physical quantity is called _____.
  (a) standard quantity (b) dimension (c) constant (d) unit

188). Which of the following is NOT a characteristic of a good unit?
  (a) It is invariable. (b) It is reproducible. (c) It is perishable. (d) It is easily available.

189). Units are classified into _____ groups.
  (a) 2 (b) 4 (c) 5 (d) 6

190). A set of fundamental and derived units is known as _____.
  (a) supplementary units (b) system of units
  (c) complementary units (d) metric units

191). The physical quantity having the same unit in all the systems of unit is _____.
  (a) length (b) time (c) mass (d) foot

192). S.I system of unit contains _____ supplementary unit.
  (a) 7 (b) 2 (c) many (d) 4

193). In which of following system, scientific data can be exchanged between different parts of the world?
  (a) M.K.S. (b) C.G.S. (c) F.P.S. (d) S.I.

194). Out of the following units, which is NOT a fundamental unit?
  (a) newton (b) second (c) pound (d) kg

195). Temperature can be expressed as a derived quantity in terms of
  (a) length and mass (b) mass and time
  (c) length, mass and time (d) none of these

196). Which of the following is NOT a derived unit?
  (a) joule (b) erg (c) dyne (d) mole

197). Which of the following is the CORRECT way of writing units?
  (a) 25 ms length (b) 30 Kg (c) 5 Newton (d) 10 N

198). To measure the distance of a planet from the earth _____ method is used.
  (a) echo (b) direct (c) parallax (d) paradox

199). The mass of the body depends only on
  (a) temperature (b) pressure.
  (c) quantity of matter contained in the body. (d) location of the body from the observer.

200) Which of the physical quantity remains same for all unit system ?
  (a) meter (b) second (c) ampere (d)| kilogram

201) Which type of errors cannot be controlled?
  (a) Random errors (b)Experimental errors
  (c) Instrumental errors (d) Systematic errors

202) How to minimize the errors in the measurement ?
  (a)Taking a large magnitude of the quantity to be measured

(b)taking large number of readings and find its mean value

(c) Using an instrument whose least count is small

(d] All of the above

203) The ratio of mean absolute error in the measurement of physical quantity to mean value is called

(a) absolute error   (b) relative error

(c) random error   (d) experimental error

204) A figure which is of some significance but it does not necessarily denote a certainly is called

(a) significant figure   (b) basic figure   (c)numbering figure   (d) decimal figure

205) The mass and volume of a plate are 4.237 kg and 2.51 m^3 respectively. Find density of plate in S.F.

(a) 1.688kg/m^3 (b) 1.69kg/ m^3 (c) 1.6880 kg/ m^3 (d) 1.6890 kg/ m^3

206) Which of the following is unit of length

(a) lunar month   (b) kelvin   (c)candela   (d) light year

207) Systametic error occured due to poor calibration of instrument that can be corrected by

(a) taking several readings   (b) replacing instruments

(c)taking mean values   (d) taking median of values

208) Error that occurs due to equally affected measurement is called

(a) random error   (b) systematic error   (c)frequent error   (d) precision

209) The percentage error in the distance 100 +5 cm is

(a) 5%   (b) 6%   (c)8%   (d) 20%

210) In an experiment to determine the density of a cube, the percentage error in the measurement of mass is 0.25% and the percentage error in the measurement of length is 0.50 % what will be the percentage error in the determination of its density ?

(a) 2.75%   (b) 1.75%   (c) 0.75%   (d) 1.25%

211) Which of the following numerical value have significant figure 4 ?

(a) 1.011   (b) 0.010   (c)0.001   (d) 0.100

212) What is the number of significant figures in 5.50 x 10°

(a) 2   (b) 7   (c) 3   (d) 4

213) The area of a rectangle of size 1.25cm x 2.245 cm in significant figure is

(a) 2.80625 cm^2 (b) 2.81 cm^2 (c) 2.806 cm^2 (d) 2.8062 cm^2

214)The significant figures in 500.5000 are

(a) 5   (b) 3   (c) 7   (d) 6

215) Addition of measurement 15.225 cm, 7.21 cm and 3.0 cm in significant figure is

(a) 25.43 cm   (b) 25.4 cm   (c) 25.435 cm   (d) 25.4350 cm .

216) The measured value of a resistance is 10.25 ohm, whereas its value of 10.22 ohm. What is absolute error of the measurement?

(a)0.01 ohm.   (b) 0.03 ohm.   (c)15.36 ohm.   (d) 10.26 ohm.

217)The multiplication of 10.610 with 0.210 upto correct number of significant figure is

(a) 2.2281   (b) 2.228   (c)2.22   (d) 2.2

218)The ratio of average absolute error to mean reading is called___

a)Average absolute error   b)Absolute error   c)Relative error   d)Relative error

219) Same person may get different readings because of human limitations,this comes under,

a)Instrumental error   b)Constant error   c)Random error   d)Personal error

220)Out of the following ,the most accurate instrument is,

a)Measuring tape   b)Meter scale   c)Vernier caliper   d)Micrometer screw gauge

221)A significant figure is defined as a figure in any place which is reasonably____

a)Non considerable   b)Meaninigless   c)Not important   d)Meaningful

222) A figure which has some significance but it does not necessarily denote a certainty is called,

a)Significant figure   b)Basic figure   c)Numbering figure   d)Decimal figure

223)The digits 1,2,3,4,5,6,7,8,9 are ___

    a)Not significant   b)Sometimes Significant   c)Always significant   d) All of the above

224) If distance between Mumbai to Pune by train is 90.5km,in this, zero is_____

   a)Not significant   b)Significant   c)May be significant   d)May not be significant

225) The number of significant figure in measurement of 2.34×10^{11}

   a)1   b)2   c)3   d)4

226) $200\mu F$ is equal to_____.

   a)$200 \times 10^{-9}F$ b)$200 \times 10^{6}F$ c)$200 \times 10^{-6}F$ d)$200 \times 10^{9}F$

227) $2000pF$ is equal to_____.

   a)$2000 \times 10^{6}F$ b)$2000 \times 10^{-6}F$ c)$2000 \times 10^{9}F$ d)$2000 \times 10^{-12}F$

228) Length of the table is 3 m. Convert this into mm

   a)3×10^{-3}mm   b)3×10^{3}mm   c)3×10^{-2}mm   d)3×10^{2}mm

229) 220cm is equal to ………..

   a)220×10^{-2}m   b)220×10^{2}m   c)220×10^{3}m   d)220×10^{-3}m

230) 10^{-6} meter means

   a)1mm   b)1cm   c)1nm   d)1μm

231) The Chakra Yantra is used to find out the right ascension and declination of _____ .
      a) Earth   **b)Planet**   c)Sun   d) Moon.

232) ……….. was the one of the popular Indian astronomer and Mathematician.
      a) Bhaskaracharya   b) Charudatta   c) Ram Dass   d) Rohidas

233)……….. developed and designed many astronomical instruments.

   a) Charudatta   b) Ram Dass   **c) Bhaskaracharya**   d) Rohidas

234) Bhaskaracharya wrote a book named ……………… in which he recorded astronomical observations.

   a) Yayati   b) Mrutunjay   **c) *Siddhānta-Śiromani***   *d)* Jayant Narlikar

235)……….. recorded very creditable observations like earth is a sphere and not flat, earth rotates around sun and much more.

   a) Ancient Indian Navy   **b) Ancient Indian experts**   c) Ancient Indian soldier   d) Ancient officer

236) …………..   which means disk machine.

   a) Dhanu Yantra   b) Chakra Yantra   c)Yasti Yantra   d)Phalak Yantra

237) ………………. instrument is a type of protractor used for angular marking of land and angular positioning of cities.

   a) Dhanu Yantra   **b) Chakra Yantra**   c)Yasti Yantra   d)Phalak Yantra

238) ………………was also used to measure time and to measure some astrological parameters like 'natta' and 'unnatta'.

   a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

239) ……….. is a ring instrument which measures the global co-ordinates of declination and the hour angle of a celestial object

      a) Yasti Yantra   b)Phalak Yantra   c) Dhanu Yantra   **d) The Chakra Yantra**

240) ……………….was used for finding boundaries of planets and stars using angular terms.

    a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

241) …………… is called disk machine

    a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

242) ……………….was used for determining the altitude.

    a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

243) ……………….was used for determining height of the place from sea level.

    a)Yasti Yantra   b)Phalak Yantra   **c) Chakra Yantra**   d) Dhanu Yantra

244) ……………….was used for determine longitude of planet

    a)Yasti Yantra   b)Phalak Yantra   **c) Chakra Yantra**   d) Dhanu Yantra

245) ……………….was used for determine Zenith distance of sun.

    a)Yasti Yantra   b)Phalak Yantra   **c) Chakra Yantra**   d) Dhanu Yantra

246) ……………….was used for determine average angular possition.

    a)Yasti Yantra   b)Phalak Yantra   **c) Chakra Yantra**   d) Dhanu Yantra

247) ……….. is a simple wooden disk having hole at the center.

    a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

248) Least count or the smallest division of Chakra Yantra is……………..

    a) 6^0 **b)5^0**   c) 2^0 c) 4^0

249) ………… means height point the sun reaches above our head

    a) nadir   **b)zenith**   c) ridian   d) declination

250) The Chakra yantra was used for measurement of

    a) Land marking   b) Time   c)angular position of cities   **d) all of the above**

251) The Chakra yantra is called ………

    a) phalaka machine   b) stick machine   **c)disk machine**   d) all of the above

252) 'Natta' and 'Unnatta' is used to calculate the

    a) mass   **b) time**   c) temperature   d) all of the above

253) In Chakra Yantra, the angle between the stick's shadow and the horizontal line is called…….

    a) time   b) Dhi   c) Natta   **d) Unnatta**

254) In Chakra Yantra, the angle between the stick's top point of disk and shadow of the stick……..

a) time   b) Dhi   **c) Natta**   d) Unnatta

255) The top point of a vertical line on a chakra yantra is called the……

a) head   b) tail   c) Natta   **d) Khardha**

256) 'Natta' and 'Unnatta' were measured by……….

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

257) …………..   which means disk Instrument.

a) Dhanu Yantra   **b) Chakra Yantra**   c)Yasti Yantra   d)Phalak Yantra

258) which of the following is unit of length…….

a) candela   **b)light year**   c)mole   d)lunar month

259) Dhanu Yantra is known as………yantra.

a) charka   **b)Chaapa**   c)circular   d) disk

260) Chaapa means a………

a) circle   b)squre   c)traingle   **d) semicircle**

261) Chaapa is a …….. word.

a) Marathi   b)Hindi   c)English   **d) Sanskrit**

262) Dhanu Yantra is known as………disk machine.

a) circle   b) squre   c)traingular   **d) semicircular**

263) ………………was used for measurement of vertical angle

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

264)……….was used for measurement of height of the terrestrial objects.

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

265)……….was used for measurement of diameter of moon.

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

266) ………..…was used for measurement of diameter of earth.

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

267) ………..…was used for measurement of circumference of earth.

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

268) ………..…was used for measurement of distance between moon and the earth.

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

269) Dhanu Yantra is half of the ………

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   d) Dhanu Yantra

270) ……………is used to measure height of the object using trigonometric formulae.

a) Chakra Yantra   b)Yasti Yantra   c)Phalak Yantra   **d) Dhanu Yantra**

271) Yasti Yantra was developed by the great mathematician and astronomer.

a) Charudatta   b) Ram Dass   **c) Bhaskaracharya**   d) Rohidas

272) Yasti Yantra is refered as……..

a) Chi   **b) Dhi**   c) Dahi   d) Ghi

273) …………… means a machine to be used with intelligence

a) Chakra Yantra   **b)Dhi Yantra**   c)Phalak Yantra   d) Dhanu Yantra

274) Yasti means a ……

a) Chakra   **b)Stick**   c)Phalak   d) Dhanu

275)………. Yantra is V shaped.

a) Chakra Yantra   **b)Dhi Yantra**   c)Phalak Yantra   d) Dhanu Yantra

276) Yasti Yantra is known as……….

a) Chakra Yantra   b) Cross staff   **c)Phalak Yantra**   d) Dhanu Yantra

278) ……………….has developed his unique method to calculate the height of terrestrial objects like trees and mountains.

a) Bhaskaracharya   b) Charudatta   c) Ram Dass   d) Rohidas

279)……………….instrument was used for land survey.

a) Chakra Yantra   **b)Yasti Yantra**   c)Phalak Yantra   d) Dhanu Yantra

280) An instrument consisted of a rectangular board with a pin and an index arm.

a) Chakra Yantra   b)Yasti Yantra   **c)Phalak Yantra**   d) Dhanu Yantra

281)……….. used to determine time from the sun's altitude.

a) Chakra Yantra   b)Yasti Yantra   **c)Phalak Yantra**   d) Dhanu Yantra

282) The hour angle of the sun was measured by………

a) Chakra Yantra   b)Yasti Yantra   **c)Phalak Yantra**   d) Dhanu Yantra

283)……….. used for finding position of celestial objects .

a) Chakra Yantra   b)Yasti Yantra   **c)Phalak Yantra**   d) Dhanu Yantra

284)……….. used for finding inclination of planets and stars.

a) Chakra Yantra   b)Yasti Yantra   **c)Phalak Yantra**   d) Dhanu Yantra

285)……….. used for finding declination of planets and stars.

a) Chakra Yantra   b)Yasti Yantra   **c)Phalak Yantra**   d) Dhanu Yantra

286) ………… developed phalaka yantra to measuer the hour angle .

a) **Bhaskaracharya**   b) Charudatta c) Ram Dass d) Rohidas

287) ……….. consists horizontal circular plate marked with concentric circles and stick hinged at centre.

  a) Chakra Yantra b)Yasti Yantra **c)Phalak Yantra** d) Dhanu Yantra

289) ……… is a flat plate having hole at the center.

  a) Chakra Yantra b)Yasti Yantra **c)Phalak Yantra** d) Dhanu Yantra

290)………… is the angle between imaginary line joining observer to sun and the horizontal plane on the earth.

  a) Altitude angle b) cone angle c)solid angle d) angle of rotation

291)……….. is an instrument to calculate the time graphically from the Sun altitude.
  a) Chakra Yantra b)Yasti Yantra **c)Phalak Yantra** d) Dhanu Yantra

292) The natural meaning of Dhi is
  a) intelligence b) small c) big d)narrow

293) Dimensions of kinetic energy is the same as that of _____
  a)Acceleration b)Velocity **c) Work** d)Force

294) Electron volt is a unit of
  a)Luminosity b)Frequency c)Force **d)Energy**

295) Which is the system of unit
  a)SMS system b)MKP system **c)FPS System** d)CJS System

296) The pair of quantities having the same dimensions is
 (a) displacement, velocity (b) time, frequency **(c) wavelength, focal length** (d) force, acceleration

297) Average distance of the Sun from the Earth
 (a) light year **(b) astronomical unit** (c) Fermi (d) parsec

298)Dimensional analysis can be applied to
  (a) to check the correctness of a physical equation.
  (b) to derive the relationship between different physical quantities.
  (c) to convert a physical quantity from one system of units to other.
  (d) All of the above

Unit 2 : Electricity,Magnetism & Semiconductors (CO2)

1)The electricity developed on a body,when it is rubbed on other body is called as,
  a)Current electricity b) Magnetic electricity c)Frictional electricity d)None of these

2) In an neutral atom number of electrons are,
  a)Same as protons b)less than protons c) More than protons d) None of these

3) The principle of conservation of charges state that, the total charges on isolated system remains,
  a)constant b)variable c)Small d)Large

4)The surplus or lack of an electron in a body gives the concept of ,
  a)Capacitance b)Coulomb c)Charge d)Neutrons

5)The types of electric charges are,
  a) Small & High b)Positive & Negative c)Nano & Milli d)None of these

6)The force of attraction or repulsion between two electric charges is known as,

    a)Magnetic force   b)Mechanical force   c)Electrostatic force   d)Frictional force

7) Which of the following is a correct statement?
    a) Like charges attract and unlike charges repel
    b) Like as well as unlike charges attract each other
    c) Unlike charges attract each other and like charges repel each other
    d) Like as well as unlike charges repel each other

8) If two equal strength charges are placed in air……… … apart from each other and if they exert a force of ……… on each other, then each charge is said to be a unit charge or charge of 1 coulomb.
    a)9×10^{9}m, 1N   b)9×10^{-9}m, 1N   c)1m, $9\times10^{9}N$ d)1m, $9\times10^{-9}N$

9)As distance between two electric charges decreases, the electrostatic force between them,
    a)Increases   b)Decreases   c)Remains same   d)Reduces

10) Coulomb's inverse square law states that the force of attraction or repulsion between the two charges in a given medium is _____proportional to product of strengths of two charges and____ proportional to square of distance between them.
    a)Inversely, Directly   b)Directly,Directly   c)Inversely, Inversely   d)Directly,Inversely

11)The unit of electric charge is,
    a) Weber   b)Joule   c)Ampere   d)Coulomb

12) If two equal strength charges are placed in air one meter apart from each other and if they exert a force of $9\times10^{-9}N$ on each other, then each charge is said to be a charge of
    a)Nine coulomb   b)Nine Newton   c)One Coulomb   d)One Newton

13)Dielectric constant of a medium w.r.t.vaccum is the
    a)ratio of permittivity of vaccum to permittivity of medium
    b) ratio of permittivity of medium to permittivity of vaccum
    c) product of permittivity of vaccum to permittivity of medium
    d)None of these

14) The ratio of permittivity of medium to permittivity of vaccum is called as
    a)Coulomb's constant   b)Magnetic Constant   c)Dielectric constant   d)Newton's constsnt

15)Materials which doesn't allow current to flow through them but show electrical effects are called as
    a) Dielectrics   b)Electrics   c)Conductor   d)Permittivities

16) The value of dielectric constant for air is,
        a)0   b)1   c)2   d)3

17)The value of dielectric constant of a medium other than air is
    a)less than 1   b)0   c)1   d) greater than 1

18)The value of dielectric constant of a metal is,
        a)0   b)1   c) greater than 1   d) Infinity
19)The space around an electric charge in which force of attraction or repulsion is effective is known as,
    a) Electric field   b) Magnetic field   c)Gravitational field   d)None of these
20) The intensity of electric field at appoint due to a point charge is defined as,
  a)Charge per unit electrostatic force   b)Product of charge & electrostatic force
  c)Charge per unit electric field   d)electrostatic force acting on unit positive charge at that point

21)The unit of Electric field intensity is,
    a) C/N   b)N/C   c)NC   d)ohm/m

22)Electric field intensity of a charge depends on,…….
    a) Medium in which charge is placed   b)Nature of charge

c)Strength of electric field   d)None of these