Question Bank-Basic Physics(22102) (I scheme)

Unit test-1

Academic year:2019-2020   **Sem-1**   **Course:All**

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) ^0C (b) ^0K (c) ^0F (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) $^0c/m$ (b) $^0k/m$ (c) $m/^0k$ (d) $^0c/cm$

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. 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 observations are mostly used which are
    (a) qualitative   (b) quantitative   (c) both a and b   (d) respective

141).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) cylinder

149).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)0.10mm

154). 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). One oscillation completes when bob moves from
     (a)A to B   (b)A to B and then again
     (c)A to B and then back to A   (d)A to B and then in center

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 $5.50 \times 10°$

       (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 X 10^{11}

a)1   b)2

c)3   d)4

226) 200µF is equal to_____.

a)200X10^{-9}F   b)200X10^{6}F

c)200X10^{-6}F   d)200X10^{9}F

227) 2000pF is equal to_____.

a)2000X10^{6}F   b)2000X10^{-6}F
c)2000X10^{9}F   d)2000X10^{-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

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)9×10^9m, 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 $9 \times 10^{-9} N$ 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

23) Electric intensity…………

    i)   Is not same at all the points inside the electric field

    ii)   Is maximum near the charge

    iii) Depends upon strength of charge

    a) Only statement (i) is correct   b) Only statement (ii) is correct

    c) Only statement (iii) is correct   d) All statements are correct

24) Electric potential is…………..

    a) Work done per unit charge   b) Charge per unit work

    c) Force per unit charge   d) Charge per unit force

25) Unit of electric flux is,

    a) Coulomb   b) Ampere

    c) Ohm   d) Newton

26) Electric current is defined as the …………

  a) Product of electric charge and time   b) Force per unit positive charge

  c) Time per unit electric charge   d) Electric charge per unit time

27) Current 1A is given by…………

    a) $1A = \frac{1s}{1C}$ b) $1A = \frac{1C}{1s}$

    c) $1A = 1C \times 1s$ d) None of these

28) The resistance of a conductor at constant temperature depends on …..

    a) Length   b) Cross-sectional area

    c) Material of conductor   d) All of the above

29) The unit of specific resistance is…….

    a) Ohm/metre   b) Ohm-metre

    c) Ohm/ampere   d) Ohm- ampere

30) Conductance is a reciprocal of ………and conductivity is reciprocal of…..this statement is………

    a) Resistance , resistivity   b) Resistivity, Resistance

    c) Current, potential   d) None of these

31) Ohm's law is valid when temperature of a conductor is………….

a)not constant

b)constant

c)changing

d)none of these

32) Two like charges of 20µC are placed 5cm apart in a medium of dielectric constant 2.5 Calculate force between them

a)288N

b)144N

c)576N

d)1152N

33) Calculate the potential at a point 10 cm away from a point charge +1C in air

a)$90 \times 10^9 volts$

b)$9 \times 10^9 volts$

c)$900 \times 10^9 volts$

d)None of these

34)Electric potential is given by relation,

a)W/Q

b)Q/W

c)WXQ

d)N/C

35) The SI unit of electric potential is ,

a) Ampere

b)coulomb

c)Volt

d)Volt/m

36) 1V means,

a) 1N/1m

b) 1C X 1J

c)1C / 1J

d)1J/1C

37)Absolute Potential at a point at a distance x from Q is given by,

a)$Vabs = 9X\ 10\ 9\ x\ /kQ$

b) $Vabs = 9X\ 109\ Q/kx$

c) $Vabs = 9X\ 109\ k/xQ$

d) $Vabs = 9X\ 109\ Qx/k$

38)The rate of flow of electric charge is called as

a)Potential

b) Current

c)Resistance

d)Charge

39)The unit of Current is,

a)Volt

b)Ampere

c)Ohm

d)Coulomb

40) The resistance of a Conductor is directly proportional to,

a)Length

b)Area

c)Volume

d)Distance

41) The resistance of a Conductor is inversely proportional to,

a)Length

b)Area

c)Volume

d)Distance

42)The ratio of potential difference to electric current is called as,

    a)Conductance   b)Resistance

    c)Conductivity   d)Resistivity

43) The property of a conductor to oppose the flow of electric current is called as,

    a)Conductance   b)Conductivity

    c)resistance   d)Insulation

44)The resistance of wire _____ with increase in length of wire.

 a)Decreases   b)Increases   c)Remains same   d)None of these

45) The conductivity of wire _____ with increase in length of wire.

 a)Decreases   b)Increases   c)Remains same   d)None of these

46) The resistance of conductor _____ with increase in area of cross section of conductor.

 a)Decreases   b)Increases   c)Remains same   d) may increase

47) The conductivity of wire _____ with increase in area of cross section of conductor.

 a)Decreases   b)Increases   c)Remains same   d)may increase

48)The resistance of material of unit length and unit cross section area of cross section is called as

 a) Conductivity   b)Resistivity   c)Conductance   d)Total Resistance

49)Simen per meter is the unit of

 a)Resistivity   b)Specific resistance   c)conductivity   d)Conductance

50)Low resistance means _____and high resistance means_____

 a)Bad conductor,good conductor   b)Insulator, Bad conductor

 c) Good conductor,Bad conductor   d)Insulator,Good conductor

51)Specific resistance is given by the formula

 a) $\sigma=RA/L$ b) $\sigma=RL/A$ c) $\sigma=AL/R$ d) $\sigma=A/LR$

52) Ohm's equation is,

 a) I=R/V   b) I=VR   c)R=VI   d)R= V/I

53)When number of resistances are connected in series then effective resistance_____

 a) Decreases   b)Increases   c)Remains same   d)None of these

54) When number of resistances are connected in parallel then effective resistance_____

 a) Decreases   b)Increases   c)Remains same   d)None of these

55)The series combination of resistances is used to_____resistance in circuit.

 a)Decrease   b)Increase   c) Reduces slightly   d)keep constant

56) The parallel combination of resistances is used to_____resistance in circuit.

 a)Decrease   b)Increase   c) make zero   d)keep constant

57) Resistances connected in series _____current in circuit.

 a)Decrease   b)Increase   c) Multiply   d)keep constant

58) Resistances connected in parallel _____current in circuit.

 a)Decrease   b)Increase   c) Make zero   d)keep constant

59)When number are resistances are connected in series____

 a)Current through each resistance is same   b)Current across each resistance is different

 c)Potential across each resistance is same   d)Potential & current both remains same

60) When number are resistances are connected in series____

 a)Current through each resistance is same   b)Potential across each resistance is different

 c)Potential across each resistance is same   d)Potential & current both remains same

61) $R_{equivalent}=$ R1+ R2 + R3+.......Rn ,gives the value of equivalent resistance when number

     of resistances are connected in _____

 a)Series   b)Parallel   c)Series & Parallel combination   d)None of these

62) $\dfrac{1}{Requivalent} = \dfrac{1}{R1} + \dfrac{1}{R2} + \dfrac{1}{R3} +......\dfrac{1}{Rn}$

gives the value of equivalent resistance when number of resistances are connected in _____

     a)Series   b)Parallel   c)Series & Parallel combination   d)None of these

63) A battery of emf 6V is connected across a resistance of 12Ω , calculate the current flowing

     through the resistance.

 a)72 A   b)0.5A   c)0.2 A   d)2A

64)A current of 0.8A flows through a resistance of 30 Ω. Calculate voltage across it.

 a) 2.4V   b)24V   c)240V   d)32V

65) A current of 1.2A flows through a resistance if a battery of emf 8V is connected across it.

     Calculate the resistance.

 a)9.6 Ω   b)6.67 Ω   c)1.5 Ω   d)5.5 Ω

66)When two resistances are connected in series their effective resistance is 100 Ω,but when they

     are connected in parallel, the effective resistance becomes 24 Ω..Calculate the two resistances.

 a)40 Ω,60 Ω   b)30 Ω,70 Ω   c)20 Ω,80 Ω   d)70 Ω,30 Ω

67) The production of heat energy in a conductor because of flow of electric current through it is

called____

 a) Heating effect of electric current   b)Magnetic effect of electric current

 c)Conducting effect of electric current   d)None of these

68)Heat generated in a conductor carrying current depends on_____

 a) Current   b)Resistance of conductor   c)Time   d)All of these

69)The mechanical equivalent of heat(J)=_____

 a)4.2J/Cal   b)4.2J/kcal   c)4200J/cal   d)420J/cal

70) As per Joule's law,the valid equation is,

 a)H=IR2t/J   b)H=I2Rt/J   c)H=I2RJ/t   d)H=I2Jt/R

71) Artificial magnets are _____than natural magnets.

 a)Weaker   b)Stronger   c)less strong   d)None of these

72)Which of the following is not a property of Bar magnet?

 a)It attracts Iorn,nickel & steel   b)It always rests in North South direction

 c)Like poles repel each other & unlike poles attract each other

 d)UnLike poles repel each other & like poles attract each other

73)Magnetic intensity is a,

 a)Scalar quality   b)Vector Quantity   c)Fundamental quantity   d)None of these

74)The region around the magnet where the magnetic force of attraction or repulsion is present is

known as,

 a)Electic field   b)Magnetic field   c)Electromagnetic field   d)None of these

75)The SI unit of Magnetic field is,

 a)Ampere   b)Tesla   c)Ampere/m   d)Newton

76)The CGS unit of magnetic field intensity is,

 a)Volt   b)Tesla   c)Weber   d)Gauss

77)Intensity of magnetic field at a point is defined as force experienced by_____kept at that point.

 a) North pole   b)South pole   c)Center of pole   d)magnet

78)Magnetic lines of force move from_____inside a bar magnet

   a)North pole to South pole   b)South Pole to North Pole

   c) East to west   d)West to east

79)Magnetic lines of force _____intersect each other.

 a)Sometimes   b)Always   c)Never   d)Rarely

80)Electric lines of force _____intersect each other.

 a)Sometimes   b)Always   c)Never   d)Rarely

81)Magnetic Lines of force has a tendency to contract along the,

 a)Length   b)Side   c)Area   d)Volume

82)Magnetic line of force expand _____

 a)Longitudinally   b)Laterally   c)Area   d)Volume

83) The lines of force of uniform magnetic field are _____

 a) Circular   b)Curved   c)Elliptical   d)Parallel

84) The lines of force of non-uniform magnetic field are _____

 a) Circular   b)Curved   c)Elliptical   d)Parallel

85)The magnetic lines of force are not affected by_____material

a)Magnetic   b)Non-Magnetic   c)Semi-magnetic   d)both a & c

86)The magnetic lines of force are crowded in region where the msgnetic field is_____

 a)Zero   b)Small   c)Large   d)Absent

87) The SI unit of Magnetic flux is,

 a)Pascal   b)Tesla   c)Weber   d)Newton

88)The CGS unit of magnetic flux is,

 a)Pascal   b)Tesla   c)Weber   d)Maxwell

89)1 Weber=_____Maxwell

 a)10-^{6} b)10^{6} c)10^{8} d)10-^{8}

90)Magnetic flux density(B) is _____ proportional to magnetic field intensity(H)

 a) Directly   b) Inversely   c)Not   d) None of these

91) Which of the following is not a property of magnetic lines of force?

 a)They start from north pole and end to south pole outside the magnet

 b) They never Intersect each other

 c)Magnetic lines of force are not affected by Non-magnetic material

 d) Magnetic lines of force form a close loop

92)Force between two charges separated by a certain distance in air is F.If each charge is doubled & distance between them is doubled ,then force will be,

a) F/2   b)F   c)2F   d)4F

93) Force between two charges separated by a certain distance in air is F.If distance between them is doubled , then force will be,

 a)F   b)2F   c)4F   d)F/4

94)An electron is placed in an electric field of intensity 1000N/C. Calculate the force acting on electron.

a)$1.6 \times 10\text{-}^{19}$ N   b)1.6×10^{-16} N   c)1.6×10^{-22} N   d)0.65×10^{22} N

95) A force of 4.5N acts on a charge of $7.5 \times 10\text{-}4$C.Calculate the intensity of electric field at that point

a) 3000N/C   b)33.75×10^{-4}N/C   c)$1.66 \times 10\text{-}^{4}$N/C   d)6000N/C

96)If the distance from a charge is halved then the potential at the point becomes,

a) Same   b) 4 times   c)Half   d)double

97)Calculate the intensity of electric field at a point 25cm from a charge of 4.8Microcoulmb in a medium of dielectric constant 3.6

a) 19.2×10^{3}N/C   b)192×10^{4}N/C   c) 192×10^{3}N/C   d) 19.2×10^{3}N/C

98) Calculate specific resistance of material of a cable 15m long having resistance of 2Ω & area 2X10-6m.

a)0.266X 10^{-7} Ωm   b) 2.66X 10^{-6} Ωm   c) 0.266X 10^{-6} Ωm   d) 26.6X 10^{-7} Ωm

99)A wire of resistance R is divided into 2 equal parts & these two wires are connected in parallel. The equivalent resistance will be,

a)4R   b)R/4   c)R/2   d)2R

100)The length and cross sectional area of a wire is halved .Its resistance will be_____

 a)Halved   b)Doubled   c)Unchanged   d) Four times

101) To obtain maximum resistance, the given resistors should be connected in _____

a) Series   b)Parallel   c)Combination of series & Parallel   d)None of these

102)If three resistances of 1Ω,10Ω and 100Ω are connected in parallel then the equivalent resistance will be_____

a)Greater than 100 Ω   b)Less than 1 Ω   c)Between 1 Ω & 100 Ω   d)None of these

103)If four resistances of 2 Ω connected in parallel then what will be the equivalent resistance of the combination?

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

104)If four resistances of 1 Ω are connected in parallel and 1 Ω is connected in series with combination then what will be the effective resistance?

a)5 Ω   b)0.25 Ω   c)1.25 Ω   d)2.5 Ω

105)If length and cross sectional area of wire is doubled its resistance will be,

a) Unchanged   b)Halved   c)Doubled   d)Four times

106) When two resistances are connected in series their effective resistance is 4 Ω but when they are connected in parallel resistance becomes 1 Ω..Calculate two resistances.

a)1 Ω &3 Ω   b)3 Ω & 3 Ω   c)2 Ω & 2 Ω   d)None of these

107)An electric iron of 100 Ω generates 378kcal heat in 30minutes. What is the voltage of the main?(J=4200J/kcal)

    a)296.98 V   b)286.98V   c) 396.9V   d)386.9V

108)The _____of energies possessed by_____is known as Valence band.

    a)Amount, electrons b)range,atoms   c)Value,atoms   d)range,Valence electrons

109) The energy gap between Valence Band and Conduction band is called as_____

    a)Valence band   b)Forbidden gap   c)Conduction band   d)Insulation gap

110) The _____of energies possessed by_____is known as Conduction band.

    a)Amount, electrons b)range,atoms   c)Value,atoms   d)range,conducting electrons

111)The materials whose conductivity is less than conductors and more than insulators are called as,

    a)Conductor   b)Insulators   c)Semiconductors   d)Superconductors

112)Conductors are the material with_____conductivity.

        a)High   b)Low   c)Moderate   d)No

113) Semiconductors are the materials having conductivity_____

        a)Less than Insulator   b)Less than conductor & Insulator

        c)Less than conductor & More than insulator   d)None of these

114)The material which allows flow of heat as well as electricity is called as_____

        a)Conductors   b)Insulators   c)Semiconductors   d)Super conductors

115)The electrical conductivity of the conductors is_____

        a)Zero   b)Low   c)High   d)few

116)Good conductors of electricity consists of,

        a) Large number of free electrons   b)Few number of free electrons

        c)no free electrons   d)None of these

117)Which of the following is not an example of good conductor ?

        a)Copper   b)Aluminium

        c) Mica   d)Brass

118) Out of the following ,semiconductor material is _____

        a)Steel   b)Brass

        c)Germanium   d)Copper

119)Out of the following,which is not a semiconductor material?

        a)Si   b)Ge

        c)GaAs   d)Carbon

120)Which of the following is not an example of semiconductor electricity?

        a)Si   b)Silver

        c)Ge   d)Si & Ge

121)The material which does not conduct electricity are called as_____

        a)Conductors   b)Insulators

        c)Semiconductors   d)Superconductors

122)An Insulator has ____electrical conductivity

        a)Low   b)High

        c)Zero   d)Infinity

123) A semiconductor in its pure form is known as_____semiconductor.

        a)Intrinsic   b)Extrinsic

        c)Dopped   d)None of these

123)At 0^0K,pure Silicon acts as,

a)Conductors   b)Insulators

c)Semiconductors   d)Superconductors

124) At 0^0K,pure Germanium acts as,

a)Conductors   b)Insulators

c)Semiconductors   d)Superconductors

125)Majority charge carriers in P-type extrinsic semiconductors are_____

a)Electrons   b)Holes

c)Free electrons   d)None of these

126) Minority charge carriers in P-type extrinsic semiconductors are_____

a)Electrons   b)Holes

c)Free electrons   d)None of these

127) Majority charge carriers in n-type extrinsic semiconductors are_____

a)Electrons   b)Holes

c)Free electrons   d)None of these

128) Minority charge carriers in P-type extrinsic semiconductors are_____

a)Electrons   b)Holes

c)Free electrons   d)None of these

129)To prepare N-type Semiconductor,the element to be added to Si is

a)Phosphrous   b)Gallium

c)Indium   d)Copper

130)Which of the following is a pentavalent impurity?

a)Phosphrous   b)Gallium

c)Indium   d)Copper

131)For formation of N-type Semiconductor,_____types of atoms are added to Si & Ge.

a)Trivalent   b)Pentavalent

c)Tetravalent   d)None of these

132)To prepare p-type Semiconductor,the element to be added to Si is

a)Phosphrous   b)Gallium

c)Arsenic   d)Copper

133)Which of the following is a trivalent impurity?

a)Phosphrous   b)Gallium

c)Antimany   d)Copper

134)For formation of p-type Semiconductor,_____types of atoms are added to Si & Ge.

        a)Trivalent   b)Pentavalent

        c)Tetravalent   d)None of these

135)Gallium,Indium,boron And aluminium are _____Impurities.

        a)Trivalent   b)Pentavalent

        c)Tetravalent   d)Hectavalent

136)When small amount of pentavalent impurity is added to pure semiconductor(Si & Ge), it is known as_____

        a)N-type semiconductor   b)P-type semiconductor

        c)Intrinsic semiconductor   d)Pure semiconductor

137) When small amount of trivalent impurity is added to pure semiconductor(Si & Ge), it is known as_____

        a)N-type semiconductor   b)P-type semiconductor

        c)Intrinsic semiconductor   d)Pure semiconductor

138)Out of the following the pentavalent impurity is_____

        a)Gallium   b)Boron

        c)Indium   d)Anitmany

139) Out of the following the trivalent impurity is_____

        a)Arsenic   b)Phosphorus

        c)Indium   d)Anitmany

140)_____Impurities form N-type semiconductor

        a)Donor   b)Acceptor

        c)Donor as well as acceptor   d)Zero

141)_____Impurities form p-type semiconductor

        a)Donor   b)Acceptor

        c)Donor as well as acceptor   d)Zero

142)Arsenic, Antimany, Phosphrous are_____element

        a)Trivalent   b)Pentavalent

        c)Tetravalent   d)Hectavalent

143)Impurities like Arsenic, Antimany, Phosphrous,bismuth which produce N-type semiconductors are known as_____

        a)Donor impurities   b)Acceptor impurities

        c)Conducting elements   d)Material impurities

144)Impurities like Gallium,Indium,Boron,Aluminium which produce p-type semiconductors are known as_____

    a)Donor impurities   b)Acceptor impurities

    c)Conducting elements   d)Material impurities

145) Pure Silicon & Germanium is known as_____semiconductor.

    a)Intrinsic   b)Extrinsic

    c)Dopped   d)None of these

146)In N-type semiconductor,electrons are _____carriers & holes are _____carriers

    a)Majority,minority   b)Minority,majority

    c)Minority,Minority   d)None of these

147) In p-type semiconductor,electrons are _____carriers & holes are _____carriers

    a)Majority,minority   b)Minority,majority

    c)Minority,Minority   d)None of these

148)Number of valence electrons in Silicon or Germanium is,

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

149)The energy level of all electrons in a particular orbit of an atom is called as,

    a)Energy band   b)Orbital band

    c)Band Gap   d)Electron band

150)The band of energy occupied by free electron or conducting electrons are ,

    a)Electron band   b)conduction Band

    c)Valence Band   d)Forbidden band

151)The band of energy occupied by valence electrons are ,

    a)Electron band   b)conduction Band

    c)Valence Band   d)Forbidden band

152)Overlapping of Valence band & conduction band is observed in,

    a)Conductors   b)Insulators

    c)Semiconductors   d)Bad conductors

153)In _____valence band is completely filled with electrons,

    a)Conductors   b)Insulators

    c)Semiconductors   d)Bad conductors

154)Forbidden energy gap is small in_____

    a)Conductors   b)Insulators

    c)Semiconductors   d)Bad conductors

155) Forbidden energy gap is large in_____

                a)Conductors   b)Insulators

                c)Semiconductors   d)Metals

156)Free electrons are not available in_____

                a)Conductors   b)Insulators

                c)Semiconductors   d)Super conductors

157)The forbidden energy gap in Ge is___

                a)0.3eV   b)0.7eV

                c)1.1eV   d)2.2eV

158) The forbidden energy gap in Si is___

                a)0.3eV   b)0.7eV

                c)1.1eV   d)1.5eV

159)____and____are the examples of pentavaelnt impurity.

                a)Arsenic & Antimany   b)Arsenic and Indium

                c)Boron and antimony   d)Gallium & Indium

160) ____and____are the examples of acceptor impurity.

                a)Arsenic & Antimany   b)Arsenic and Indium

                c)Boron and antimony   d)Gallium & Indium

161)The electrical conductivity of semiconductor at absolute zero is_____

      a)0.72eV for Ge and 1.12eV for Si   b) 0.72eV for Si and 1.12eV for Ge

      c) 2.4eV for Ge and 1.7eV for Si   d) 2.4eV for Si and 1.7eV for Ge

162) The electrical conductivity of semiconductor depends on,

                a)Length   b)Diameter

                c)Temperature   d)Pressure

163)As temperature of semiconductor increases,its conductivity,

                a)Decreases   b)Remains constant

                c)Decreases or Increases   d)Increases

164)As temperature of semiconductor decreases,its conductivity,

                a)Decreases   b)Remains constant

                c)Decreases or Increases   d)Increases

165)As temperature of semiconductor increases,its resistance,

                a)Decreases   b)Remains constant

                c)Decreases or Increases   d)Increases

166)As temperature of conductor increases,its conductivity,

        a)Decreases   b)Zero

        c) Increases   d)Infinity

167)As temperature of conductor increases,its resistance,

        a)Decreases   b)Zero

        c) Increases   d)Infinity

168)As temperature of insulator increases,its conductivity,

        a)Decreases   b)Remains constant

        c)Reduces   d)Increases

169)The carrier concentration in an intrinsic semiconductor_____with increase in temperature.

        a)Decreases   b)Remains constant

        c)Decreases or Increases   d)Increases

170) At absolute zero temperature ,intrinsic semiconductor acts as,

        a)Conductor   b)Semiconductor

        c)an Insulator   d)Super conductor

171)Flow of current due to free electrons and holes is observed in,

        a)Conductor   b)Semiconductor

        c)an Insulator   d)Super conductor

172)The process of adding impurity to a semiconductor(Si,Ge) is known as,

        a)Dopping   b)Impurification

        c)Addition   d)Extrinsic

173)Intrinsic semiconductors has,_____

        a)$n_{electrons} > n_{holes}$ b)$n_{electrons} < n_{holes}$

        c) $n_{electrons} = n_{holes}$ d)$n_{electrons} \neq n_{holes}$

174)N-type semiconductors has,_____

        a)$n_{electrons} > n_{holes}$ b)$n_{electrons} < n_{holes}$

        c) $n_{electrons} = n_{holes}$ d)$n_{electrons} \neq n_{holes}$

175)P-type semiconductors has,_____

        a)$n_{electrons} > n_{holes}$ b)$n_{electrons} < n_{holes}$

        c) $n_{electrons} = n_{holes}$ d)$n_{electrons} \neq n_{holes}$

176)Electrons are majority charge carriers and holes are minority charge carriers in

        a)N-type semiconductor   b)P-type semiconductor

        c)PN junction diode   d)Pure semiconductor

177) Holes are majority charge carriers and electrons are minority charge carriers in

a)N-type semiconductor   b)P-type semiconductor

c)PN junction diode   d)Pure semiconductor

178)When half part of a Ge crystal is doped with trivalent impurity and half part with pentavalent impurity,then formation of _____takes place.

a)PN junction diode   b)Transistor

c)Triode   d)Extrinsic semiconductor

179)The border where P region meets with N region in a PN junction diode is known as ,

a)Border   b)Junction

c)Crossing   d)Boundary

180)The voltage developed across the depletion region in PN junction diode is called as,

a)Diode potential   b)Barrier potential

c)Cross potential   d)PN potential

181)When P region is connected to positive terminal of battery and N region is connected to negative terminal of the battery then the diode is said to be connected in,

a)Forward bias   b)Reverse bias

c)Straight bias   d)Cross Bias

182)When P region is connected to negative terminal of battery and N region is connected to positive terminal of the battery then the diode is said to be connected in,

a)Forward bias   b)Reverse bias

c)Straight bias   d)Cross Bias

183)In forward bias,PN junction diode, the width of depletion region ___

a)Increases   b)Decreases

c)Remains constant   d)Increases or Decreases

184)In reverse bias, PN junction diode, the width of depletion region ___

a)Increases   b)Decreases

c)Remains constant   d)Increases or Decreases

185)The forward biased diode operates as _____

a)Open switch   b)Closed switch

c)High resistance   d)Infinite resistance

186)The reverse biased diode operates as _____

a)Open switch   b)Closed switch

c)High resistance   d)Infinite resistance

187)The electrical resistance of PN junction diode is____during forward bias

a)High

b)Infinite

c)Low

d)None of these

188) A rectifier is a device which converts ,

a)AC to DC

b)DC to AC

c)AC to AC

d)DC to DC

189)Barrier potential for Silicon is____And for Germanium is____

a)0.3V & 0.7V

b) 0.7V & 0.3V

c)1.2V & 1.4V

d) 1.4V & 1.2V

190)In forward bias PN junction diode,

a)P region is connected to +ve of battery & N region is connected to –ve of battery

b) P region is connected to -ve of battery & N region is connected to +ve of battery

c)both side are connected to +ve of battery

d) both side are connected to -ve of battery

191)In reverse bias PN junction diode,

a)P region is connected to +ve of battery & N region is connected to –ve of battery

b) P region is connected to -ve of battery & N region is connected to +ve of battery

c)both side are connected to +ve of battery

d) both side are connected to -ve of battery

192)In forward bias PN junction diode,

a)Diode current increases sharply beyond 0.6V of external voltage

b) Diode current decreases sharply beyond 0.6V of external voltage

c) Diode current remains constant throughout the increase in voltage

d) None of these

193)Which of the following is not an application of PN junction diode?

a)Used as rectifier in DC power supply

b)Used as wave shaper in clipping circuits

c)Used to block DC and allows AC

d)with some alterations ,it is used as zener diode

194)The reverse bias diode repels the majority charge carriers ____

a)Towards the junction

b)Away from the junction

c)In the other region

c)In minority charge carriers

195)The leakage current in reverse bias diode is due to flow of____

a)Majority carriers

b)Minority carriers

c)Electrons

d)Holes

196)The minimum voltage required for conducting the diode is known as____

a)Operating voltage   b)Conducting voltage

c) Knee voltage or cut in voltage   d)Critical Voltage

197) The value of forward voltage above which forward current increases speedily is known as__

a)Operating voltage   b)Conducting voltage

c) Knee voltage or cut in voltage   d)Critical Voltage

198)The knee voltage for Si diode is ____ & for Ge diode is____

a)0.7V,0.3V   b)1.1V,0.5V

c)1.5V,0.8V   d)2.2V,1.1V

199)The PN junction diode is used in____

a)Switch   b)Clipping circuits

c)Demodulator circuit   d)All of these

200)When the diode doesn't conduct the majority current carrier, very small amount of current flows through reverse biased diode is called as_____

a)Forward current   b)Leakage current

c)Peak current   d)Constant current

201)The value of permittivity of free space (ε_0) is,

a)8.85 X 10-^{12} C^2/Nm^2 b)9 X 10^9 C^2/Nm^2

c)1/ 8.85 X 10-^{12} C^2/Nm^2 d)1/9 X 10^9 C^2/Nm^2

202)

Unit 3 : Heat and optics (CO3)

1)Heat is _____of energies of all the molecules in a body or system.

    a)Average   b)Product

    c)Sum   d)All of Above

2)Heating produces ___of body

    a)Solidification   b)Expansion

    c)Contraction   d)None of above

3)Temperature is the measure of_____of K.E of the molecules of the body

    a)Average   b)Product

    c)Sum   d)None of these

4)The SI unit of Temperature is,

    a)^0C b)^0F

    c)^0K d)^0R

5) The SI unit of Heat is,

    a)Joule   b)Erg

    c)Newton   d)Dyne

6) The MKS unit of Heat is,

    a)kilocalorie   b)Calorie

    c)Joule   d)Erg

7)The energy which flows from a body at higher temperature to a body at lower temperature is,

    a)Sound   b)Light

    c)Heat   d)Wind

8)Heat is_____property

    a) An intensive   b)An extensive

    c)an Intensive as well as extensive   d)None of these

9)Temperature is_____property

    a) An intensive   b)An extensive

    c)an Intensive as well as extensive   d)None of these

10)Which of the following is a correct statement?

      a)Temperature is a cause and Heat is its effect

      b)Heat and temperature both are causes

      c) Heat and temperature both are effects

      d) Heat is a cause and Temperature is its effect

11)Which of the following is not a unit of heat?

      a)Joule   b)Fahrenheit

      c)Calorie   d)Kilocalorie

12)Which of the following is not a unit of Temperature?

      a)Kelvin   b) Degree Fahrenheit

      c)Calorie   d) Degree Celcius

13)The amount of heat required to raise the temperature of ___of water by 1^0C is called as Kilocalorie.

      a)1gm   b)1kg

      c)1liter   d)1ml

14) The amount of heat required to raise the temperature of ___of water by 1^0C is called as calorie.

      a)1gm   b)1kg

      c)1liter   d)1ml

15)1kcal is equal to,

      a)4.184J   b)1.484J

      c)4184J   d)1484J

16)1 Calorie=_____J

      a)4.186   b)6.63

      c)4186   d)6630

17) The amount of heat required to raise the temperature of one gram of water by 1^0C is called as _____.

      a)1 erg   b)1Calorie

      c)1 kilocalorie   d) 1Joule

18)The scale in which lower fixed point and upper fixed point are divided into 100 equal parts is known as_____

    a)Celcius scale   b)Faherenheit Scale

    c)Kelvin scale   d)Standard scale

19) The scale in which lower fixed point and upper fixed point are divided into 180 equal parts is known as_____

    a)Celcius scale   )Faherenheit Scale

    c)Kelvin scale   d)Standard scale

20) The scale in which lower fixed point(melting point of ice is takem as 273) and upper fixed point(boiling point of water) are divided into 100 equal parts is known as_____

    a)Celcius scale   b)Faherenheit Scale

    c)Kelvin scale   d)Standard scale

21)The temperature at which pressure as well as volume of gas theoretically becomes zero is called as ,

    a)absolute zero temperature   b)Melting point

    c)Boiling point   d)None of these

22) The value of Absolute zero temperature is,

    a) -273^{0}K   b)0 ^{0}C

    c)-273 ^{0}C   d) -256 ^{0}C

23)If C is temperature in ^{0}C,F is temperature in ^{0}F,K is temperature in^{0}K then,

    a)$C = \frac{F-32}{1.8}$ b)C=K-273

    c)F=1.8C+32   d) All of these

24)Convert 22 ^{0}C to ^{0}F

    a)71.6 ^{0}F   b)34 ^{0}F

    c)251 ^{0}F   d)76.1 ^{0}F

25)Convert 45 ^{0}C to ^{0}F

    a)101 ^{0}F   b)125 ^{0}F

    c)113 ^{0}F   d)127 ^{0}F

26)Convert 30 ^{0}C to ^{0}K

    a)303 ^{0}K   b)327 ^{0}K

    c)293 ^{0}K   d)313 ^{0}K

27) Convert 104 ^{0}F to ^{0}C

    a)40 ^{0}C   b)50^{0}C

    c)80^{0}C   d)20^{0}C

28)Body temperature 98.6 ^{0}F =____^{0}C

    a)37 ^{0}C   b)47^{0}C

    c)27^{0}C   d)97^{0}C

29) Normal temperature of human body is =____^{0}C

    a)0 ^{0}C   b)27^{0}C

    c)37^{0}C   d)50^{0}C

30)Normal temperature of human body is,

    a)27 ^{0}F   b)50 ^{0}F

    c)100 ^{0}F   d)98.6^{0}F

31)110^{0}F is equal to____

    a)417^{0}K   b)287^{0}K

    c)216^{0}K   d)316.33^{0}K

32) 300 ^{0}K is equal to,

    a)70 ^{0}F   b)90.6 ^{0}F

    c)80.6 ^{0}F   d)100 ^{0}F

33)320 ^{0}A is equal to,

    a)57 ^{0}C   b)47^{0}C

    c)37^{0}C   d)67^{0}C

34) Convert 300 ^{0}K to ^{0}C

    a)30 ^{0}C   b)27^{0}C

    c)36^{0}C   d)42^{0}C

35)The process of transfer of heat in which heat is transferred from a part of body at high temperature to a part of body at low temperature without actual movement of particles is known as,

a)Conduction   b)Convection

c)Radiation   d)Reflection

36)The process of transfer of heat in which heat is transferred from a part of body at high temperature to part of body at low temperature with actual movement of particles is known as,

a)Conduction   b)Convection

c)Radiation   d)Reflection

37)In conduction there is,

a)Bodily movement of particles   b)No bodily movement of patricles

c)With & without bodily movement   d)None of these

38) In convection there is,

a)Bodily movement of particles   b)No bodily movement of patricles

c)Vibrational movement of particles   d)None of these.

39)The process of heat transfer when metal rod is heated at one end is,

a)Conduction   b)Convection

c)Radiation   d)None of these

40)The process of heat transfer when water in beaker is heated from bottom is,

a)Conduction   b)Convection

c)Radiation   dNone of these

41) The process of heat transfer from sun to earth takes place by,

a)Conduction   b)Convection

c)Radiation   d)Reflection

42)Transmission of heat energy through liquids or gases takes place by process of,

a)Conduction   b)Convection

c)Radiation   d)Melting

43)Transmission of heat energy through metals takes place by process of,

        a)Conduction   b)Convection

        c)Radiation   d)Refraction

44)Out of the following process of heat transfer material medium is not required?

        a)Conduction   b)Convection

        c)Radiation   d)Refraction

45)Only_____takes place in vaccum as well as material medium.

        a)Conduction   b)Convection

        c)Radiation   d)Refraction

46)The process by which heat reaches to earth is,

        a)Conduction   b)Convection

        c)Radiation   d)Refraction

47)The fastest process of heat transfer is ,

        a)Conduction   b)Convection

        c)Radiation   d)Refraction

48) The slower process of heat transfer is ,

        a)Conduction   b)Convection

        c)Radiation   d)Refraction

49)Out of the following which surface radiates more heat at a given temperature?

        a)Black & smooth   b)Black & rough

        c)White & smooth   d)White & rough

50)Material medium is not necessary in,

        a)Conduction   b)Convection

        c)Radiation   d)None of these

51)Heat is transferred in form of_____waves, in Radiation

        a)Stationary   b)Electromagnetic

        c)Transverse   d)Longitudinal

52) Which of the following is not a unit of coefficient of thermal conductivity(K)?

a) Cal/cm^{0}C sec

b) Kcal/m^{0}C sec

c) Watt/ sec^{0}K

d) Watt/m^{0}K

53) Temperature gradient is equal to,

a) $\dfrac{Change\ in\ temperature}{Time}$

b) $\dfrac{Time}{Change\ in\ Temperature}$

c) $\dfrac{Distance}{Change\ in\ temperature}$

d) $\dfrac{Change\ in\ temperature}{Distance}$

54) Temperature Gradient is defined as,

a) Change in temperature per unit time

b) Change in time per unit change in temperature

c) Change in temperature per unit change in distance in direction of heat flow

d) Change in distance per unit change in temperature

55) Unit of temperature gradient is,

a) m/^{0}C

b) Sec/^{0}C

c) ^{0}C/m

d) ^{0}C/sec

56) The state in which temperature of substance goes on increasing w.r.t time is called as,

a) Variable state

b) Steady state

c) Normal state

d) Critical state

57) Heat absorbed by the material>Heat given out by the material is concerned with,

a) Normal state

b) Critical state

c) Variable state

d) Steady state

58) Heat absorbed by the material=Heat given out by the material is concerned with,

a) Normal state

b) Critical state

c) Variable state

d) Steady state

59) Heat flowing through material of rod of unit area, in 1 sec for unit temperature gradient at steady state is known as,

a) Conductivity

b) Heat Constant

c) Coefficient of thermal conductivity

d) Thermal constant

60)As per law of thermal conducitivity,amount of heat flowing through the rod is____

a)Directly proportional to cross sectional area

b) Directly proportional to temperature gradient

c) Directly proportional to time   d) All of these

61)The SI unit of coefficient of thermal conducticity is,

a) Watt-m-^{0}K   b) Watt/m-^{0}K

c) m^{0}K/Watt   d) m/watt^{0}K

62)The coefficient of thermal conductivity of good conductors of heat is,

a)Low   b)Medium

c)High   d)None of these

63)Which of the following material is not a bad conductor of heat?

a)Plastic   b)Wood

c)Mica   d)Plastic & mica both

64) Which of the following material is not a good conductor of heat?

a)Thermocole   b)Mica

c)Thermocole & mica both   d)Copper

65)Thermal resistor is_____the thermal conductivity.

a)reciprocal of   b)Equal to

c)Addition of   d)None of these

66)Which type of material is used as a heat sink in electronic circuits?

a)Bad conducting   b)Conducting

c)Semiconducting   d)All of these

67)Condenser coil in refrigerator is ideally made up of,

a)Bad conductor   b)Insulator

c)Semiconductor   d)Good Conductor

68)Davy's safety lamp is covered by,

a)Insulating material   b)Good conducting material

c)Semiconducting material   d)None of these

69) Which material is used in Ice box?

 a) Bad conducting material   b)Good conducting material

 c)Semiconducting material   d)None of these

70)Handle of cooker is made up of,

 a) Good conducting material   b) Semiconducting material

 c)Aluminium   d)Bad conducting material

71)Room ventilation ,Formation of trade winds,sea breeze are the applications of____

 a)Conduction   b)Convection

 c)Radiation   d)All of the above

72)Heat radiations in car,use of white clothes in summer are applications of____

 a)Conduction   b)Convection

 c)Radiation   d)None of these

73)Radiation can____

 a)Travel through vaccum   b)Travel with speed of light

 c)Reflect,Refract   d)All of these

74)For a fixed mass of gas,Temperature of gas remaining constant,Its pressure is inversely proportional to its volume is,

 a)Boyle's law   b)Charle's law

 c)Gay lussac's law   d)Newton's law

75)For a fixed mass of gas,pressure of gas remaining constant,Its Volume is directly proportional to its absolute temperature is,

 a)Boyle's law   b)Charle's law

 c)Gay lussac's law   d)Newton's law

76)For a fixed mass of gas,volume of gas remaining constant,Its pressure is directly proportional to its absolute temperature is,

 a)Boyle's law   b)Charle's law

 c)Gay lussac's law   d)Newton's law

77)A hot air balloon is an example of,

      a)Boyle's law   b)Charle's law

      c)Gay lussac's law   d)Newton's law

78)If temperature of gas remains constant then the pressure of gas will be_____

      a)Increase with increase in volume   b)Decrease with decrease in volume

      c)Decrease with decrease in volume   d)None of these

79)If pressure of a gas remains constant , then volume of gas will _____

      a)Increase with temperature   b)Decrease with temperature

      c)Increase with decrease in temperature   d)Decrease with increase in temperature

80)The general gas equation is given by,

      a)V=PRT   b)PT=VR

      c)P=VRT   d)PV=RT

81)Ideal gas equation is given by,

      a)V=PKT   b)PT=VK

      c)P=VKT   d)PV=KT

82)At N.T.P normal temperature =_____

      a)273^0C b) -273^0C

      c)273^0K d) 0^0K

83) At N.T.P normal temperature =_____

      a)273^0C b) -273^0C

      c)0^0C d) 0^0K

84) At N.T.P,atmospheric pressure P =_____

      a)1cm of Hg   b)76cm of Hg

      c)$1N/m^2$ d)76 atmosphere

85) At N.T.P,atmospheric pressure P =_____

      a)1cm of Hg   b)1 atmosphere

      c)$1N/m^2$ d)76 atmosphere

86)Specific heat of gas at constant pressure Cp is always_____specific heat of gas at constant volume Cv.

    a)Equal to   b)greater than

    c)Less than   d)Same as

87)Cooking becomes faster in pressure cooker because the increase in vapour pressure

    a)Increases specific heat   b)Decreases specific heat

    c)Decreases boiling point   d)Increases boiling point

88)For 1 kg mole of a gas, the value of universal gas constant R in equation, PV=RT is,

    a)83.149 J/^{0}K kg mole   b) 0.83149 J/^{0}K kg mole

    c) 8314.91 J/^{0}K kg mole   d) 4200 J/^{0}K kg mole

89)Specific heat at constant pressure Cp & at constant Volume Cv are related as,

    a) $Cp - Cv = \frac{R}{J}$ b)$\frac{Cp}{Cv}=\gamma$

    c) Both a & c   d)None of these

90)Difference between the specific heat Cp and Cv is ,

    a)Less than zero   b)negative

    c)Both a & b   c)Greater than zero

91) Ratio of the specific heat Cp to Cv is ,

    a)Less than 1   b)Greater than 1

    c)Between a & b   c)None of these

92)Thickness of a plate is 10cm. the temperature of two faces are 90^{0}C and 60^{0}C. Find the temperature gradient.

    a)30^{0}C/cm   b)3^{0}C/cm

    c)1^{0}C/cm   d)7^{0}C/cm

93) Thickness of a plate is 8cm. the temperature of two faces are 100^{0}C and -20^{0}C. Find the temperature gradient.

    a)10^{0}C/cm   b)20^{0}C/cm

    c)25^{0}C/cm   d)15^{0}C/cm

94)A metal rod 10cm long, of area 0.9cm^2 has a temperature difference of 60^{0}C.Calculate

the heat flowing in 1 minute(Given K=0.14cal/cm^{0}Csec)

    a)45.36 cal   b)23.6cal

    c)57.8 cal   d)None of these

95) Calculate the heat conducted in 1 minute through a metal rod of area 0.2cm^2 has a temperature gradient 50^{0}C/m. (Given K=0.08kcal/m^{0}Csec)

    a)24Kcal   b)48Kcal

    c)72Kcal   d)59Kcal

96)A gas at 25^{0}C has its temperature raised so that its volume doubles,pressure

remains constant.Find its final temperature.

    a)273^{0}C   b) 323^{0}C

    c) 293^{0}C   d) 300^{0}C

97)100ml of air is measured at 20^{0}C.If its temperature is raised to 50^{0}C,what will be its

Volume, if pressure is constant?

    a)90ml   b)80ml

    c)110.24ml   d)100ml

98)The volume of a certain quantity of a gas at NTP is 24 liters.What will be pressure exerted

by same quantity of gas in a gas cylinder of 20 liters at 27^{0}C.

    a)100.22 cm of Hg   b)70 cm of Hg

    c)90cm of Hg   d)120.7 cm of Hg

99)A certain mass of gas occupies 40cm^3 at 27^{0}C .Find its volume at 57^{0}C,Pressure is constant

    a) 34cm^3 b) 38cm^3

    c) 44cm^3 d)50cm^3

100)To what temperature a gas at 0^{0}C must be heated at a constant pressure so that its

volume doubles?

    a)200^{0}C   b)300^{0}C

    c)0^{0}C   d)273^{0}C

101)A glass bulb contains air at pressure of 76 cm of Hg at 27 ^{0}C when its volume is 100cc.It

is placed in a oil at temperature of 327^{0}C. What will be the pressure inside ,when the

volume of the bulb becomes 152cc?

a)120cm of Hg   b)100 cm of Hg

c)80 cm of Hg   d)60cm of Hg

102) Calculate V2 if V1=20cc,T1=300^{0}K ,T2=340^{0}K

a)25cc   b)27cc

c)30cc   d)22.27cc

103) Calculate P2 if P1=80cm of Hg,T1=300^{0}K ,T2=400^{0}K

a)90cm of Hg   b)80 cm of Hg

c)106.67cm of Hg   d)70cm of Hg

104)The difference between two specific heats of a gas is 1500 & their ratio is 1:5.Find Cp & Cv

a)1875 ,375 units   b)1900, 400 units

c)1720,220 units   d)2000,500 units

105) The difference between two specific heats of a gas is 4000J/kg^{0}K & their ratio is 1.4.

Find Cp & Cv.

a)14000 J/kg^{0}K ,10000 J/kg^{0}K   b)13000 J/kg^{0}K ,9000 J/kg^{0}K

c)12000 J/kg^{0}K ,8000 J/kg^{0}K   d) 10000J/kg^{0}K ,6000 J/kg^{0}K

106)The difference between two specific heats of a gas is 0.055 J/kg^{0}K .Find J,

if R=234.5 MKS units

a)4280J/Kcal   b)4000J/Kcal

c) 4280J/cal   d)4000J/cal

107)The ratio of two specific heat for a gas is 1.4 and R/M=0.0714.Calculate values of Cp & Cv.

a)0.2499 J/kg^{0}K ,0.1785 J/kg^{0}K   b)0.3025 J/kg^{0}K ,0.1640 J/kg^{0}K

c)0.2100 J/kg^{0}K ,0.1375 J/kg^{0}K   d) 0.1640 J/kg^{0}K ,0.3025J/kg^{0}K

108)As per the law of reflection, which of the following is correct one

(a)(only) angle of incidence is equal to angle of relfection

(b) (only) incident ray , reflected ray and normal to the reflecting surface lie in one plane

(c) (both)(a) and (b)

d) none of these

109) Refraction is defined as the property of light on account of which light---

a) changes its path when it enters from one medium to other medium

b)bounces back

c) continues to travel in the same direction when it enters from one medium to other

d) none of these

110) When light travel from one medium to another medium there is change in -----

a)velocity   b) direction   c)wavelength   d) all of these

111) When light travel from one medium to another, the parameter that remain constant is-----
a)velocity   b) direction   c)wavelength   d) frequency

112) A wave of light of single frequency or wavelength is called----

a) polychromatic   b) monochromatic light   c) coherent   d) non-coherent

113) As per Snell's law for a given pair of media, the ratio of sine of angle of incidence to

The sine of angle of refraction-----

a) Increases   b) decreases   c) remains constant   d) Increases then decreases

114) When light travel from vacuum (air) into a glass black, its speed------

a)increases   b) decreases   c) remains constant   d) all of these

115) Snell's law is concerned with-----

a) reflection of light   b) refraction of light

c) transmission of light   d) diffraction of light

116) Snell's law state that, for any two media, the -----

a) product of sin I to sin r is constant   b)ratio of sin I to sin r is constant

c)sum of sin I to sin r is constant   d)difference of sin I to sin r is constant

117) Refractive index of air or vacuum is--------

a) zero   b) one   c) two   d) three

118) As per refraction, when light enters from air to (rare) to glass (denser) medium-----

a)i<r   b)r>i   c)i=r   d)i>r

119) As per refraction, when light enters from glass (denser) to air to (rare) medium-----

   a)i<r   b)i>r   c) r<i   d)i=r

120) When light enters from air to (rare) to glass (denser) medium, then $_a\mu_g = \dfrac{sin\,i}{sin\,r}$ is------

   a) less than 1   b) equal to 1   c) greater than 1   d)none of these

121) When light enters from glass to (denser) to air (rare) medium, then $_a\mu_g = \dfrac{sin\,i}{sin\,r}$ is------

   a) less than 1   b) equal to 1   c) greater than 1   d)none of these

122)When ray of light travels from denser medium to rare medium and if angle of incidence

   is greater than critical angle, then only reflection take place. This phenomenon is known as-
-     a)total internal reflection   b)total internal refraction

   c) interference   d) diffraction

123)Total internal reflection (T.I.R) states that, if light travelling from high refractive index to low refractive index and if angle of incidence is greater than critical angle then-------

   a)only refraction take place   b) reflection as well as refraction take place

   c) only reflection take place   d)none of these

124) The critical angle θ_c is defined as the angle of incidence at which angle of refraction is----

   a)45^0 b)90^0 c) less than 45^0 d) greater than 90^0

125)Conditions for T.I.R.(Total internal reflection)----------

   a)(only) angle of incidence should be greater than θ_c (critical angle)

   b)(only) μ_1 should be greater than μ_2

   c) both (a) and (b)

   d) none of these

126)Optical fiber works on the principle of -----

   a)total internal refraction   b) only reflection

   c)only refraction   d)total internal reflection

127)Communication optical fiber has cylindrical ------ surrounded with cylindrical coat of ---- coated with ---

   a)protective skin, cladding, core   b) cladding, protective skin, core

   c) core, cladding, protective skin   d) core, protective skin, cladding

128)A thin fiber of glass or plastic that carry light from one end to the other without considerable loss by way of T.I.R.is know as---

   a) glass fiber   b) plastic fiber   c) optical fiber   d) light fibre

129) Optical fiber propagates the light because of,

   a)total internal refraction   b) only reflection

   c)only refraction   d)total internal reflection

130)The R.I of core should be ____R.I of cladding in optical fiber.

   a)Less than   b)Equal to

   c)Greater than   d)matching

131)The sine of acceptance angle of the optical fiber is known as,

   a)Acceptance angle   b)Numerical aperture

   c) Acceptance cone   d)All of these

132)The light gathering power of optical fiber is called as,

   a)Acceptance angle   b)Numerical aperture

   c) Acceptance cone   d)All of these

133)The maximum angle made by light ray with fiber axis so that ligh can propogate

   through the fiber after TIR is called as,

   a)Acceptance angle   b)Numerical aperture

   c) Acceptance cone   d)All of these

134)Light is a form of energy produced by a_____

   a)Luminous object   b)Transparent object

   c)Non-Luminous object   d)Opaque object

135) An example for Non-luminous object is,

   a)Candle   b)The sun

   c)An Electric Bulb   d)The moon

136)Following is the one necessary condition for propagation of light through optical fiber.

   a) $\mu core > \mu$ cladding   b) $\mu core < \mu cladding$

   c) $\mu core = \mu cladding$ d)None of these

137)Based on variation of R.I of core, the two types of optical fiber are,

    a)Step index and single mode   b)Step index and Graded index

    c)Graded index and multimode   d)Single mode and multimode

138) Based on mode of propagation, the two types of optical fiber are,

    a)Step index and single mode   b)Step index and Graded index

    c)Graded index and multimode   d)Single mode and multimode

139)In step index optical fiber, the R.I of,

    a)Core is uniform throughout the fiber   b)Core & cladding is same

    c)Core is changing from axis to boundary   d)None of these

140) In graded index optical fiber,the R.I of,

    a)Core is uniform throughout the fiber   b)Core & cladding is same

    c)Core is not uniform & it decreases gradually from core axis to boundary of core

    d)None of these

141)In single mode step index optical fiber,for light___

    a)There are many zigzag paths   b)There is only one zigzag path

    c)There are many curved paths   d)There is only one curved path

142) In multi mode step index optical fiber,for light___

    a)There are many zigzag paths   b)There is only one zigzag path

    c)There are many curved paths   d)There is only one curved path

143) In multi mode graded index optical fiber,for light___

    a)There are many zigzag paths   b)There is only one zigzag path

    c)There are many curved paths   d)There is only one curved path

144)Calculate velocity of light in glass of R.I 1.6.

    a)1.5×10^8m/s   b) 2×10^8m/s

    c) 3×10^8m/s   d) 1.875×10^8m/s

145)Speed of light in Quartz is 1.95×10^8m/s. Calculate R.I of quartz.

    a)1.3   b)1.54

    c)1.4   d)1.2

146) Speed of light in water is 2.2×10^8 m/s & in glass 1.9×10^8 m/s. Calculate R.I of water

w.r.t glass.

a)0.864   b)1.215

c)0.957   d)None of these

147) R.I of water is 1.33 and R.I of glass is 1.52. Calculate velocity of light in water if velocity

of light in glass is 1.98×10^8 m/s

a)1.5×10^8 m/s   b) 2×10^8 m/s

c)2.26×10^8 m/s   d) 3×10^8 m/s

148) R.I of water w.r.t air is 1.33 and R.I of glass w.r.t air is 1.54.Calculate R.I of glass

w.r.t water

a)1.158   b)1.5

c)1.27   d)1.4

149)Find the angle of incidence if angle of refraction is 30^0 for a glass having R.I 1.5.

a)35.23^0 b) 48.59^0

c)40.12^0 d) 55^0

150) For a glass optical fiber calculate the critical angle if R.I of core is 1.5 and R.I of cladding

is 1.3.

a)55.23^0 b) 64.25^0

c)57.83^0 d) 60.07^0

151) Calculate critical angle if R.I of core is 1.55 and R.I of cladding is 1.35

a)60.57^0 b) 54.23^0

c)57.25^0 d) 62.85^0

152) Speed of light in diamond is 1.2×10^8 m/s.Calculate R.I of diamond.

a)2.1   b)2.2

c)2.5   d)2.7

153)$1A^0 = $_____

a)10^{-10} m   b) 10^{-8} m

c) 10^{-9} m   d) 10^{-6} m