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) ^{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. 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 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 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 : <u>Electricity,Magnetism & Semiconductors (CO2)</u>

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

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 ×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)$Vabs = 9\text{X } 10\ 9$ x /kQ b) $Vabs = 9\text{X } 109$ Q/kx

c) $Vabs = 9\text{X } 109$ k/xQ d) $Vabs = 9\text{X } 109$ 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) σ=RA/L b) σ=RL/A c) σ=AL/R d) σ=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) $\frac{1}{Requivalent} = \frac{1}{R1} + \frac{1}{R2} + \frac{1}{R3} + \ldots\ldots \frac{1}{Rn}$

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)1.6×10^{-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 7.5X10-4C.Calculate the intensity of electric field at that point

a) 3000N/C b)33.75×10^{-4}N/C c)1.66×10^{-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)8.85×10^{-12} C^2/Nm^2 b)9×10^9 C^2/Nm^2

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

202)

Unit 3 : <u>Heat and optics (CO3)</u>

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)^{0}C b)^{0}F

c)^{0}K d)^{0}R

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) -273^0K 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) $\frac{Change\ in\ temperature}{Time}$

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

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

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

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)$\frac{Cp}{Cv}$=γ

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^0Csec)

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^0Csec)

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 ${}_a\mu_g = \frac{sini}{\sin r}$ 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 ${}_a\mu_g = \frac{sini}{\sin r}$ 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) μcore>μ cladding b) μcore<μcladding

c) μcore=μcladding 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 X 10^8m/s b) 2X 10^8m/s

c) 3X 10^8m/s d) 1.875 X 10^8m/s

145)Speed of light in Quartz is 1.95 X 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 X 10^8m/s & in glass 1.9 X 10^8m/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 1.98X10^8m/s

a)1.5 X 10^8m/s b) 2X 10^8m/s

c)2.26X 10^8m/s d) 3 X 10^8m/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 X 10^8m/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

As per I - Scheme

Question Bank

Multiple Choice Questions

Program – CE/ME/CM/IF/CH/EJ/EE **Course – Basic Chemistry (22102)**

Unit-1 Chemical Bonding & Catalysis

1. Which combination of atoms can form a polar covalent bond?

a. H & Br b. N & N c. Na & Br d. H & H

2. When an ionic compound is dissolved in water, the ions in solution can best be Described as……

a. hydrated molecules only b. dehydrated ions & molecules

c. hydrated ions only d. both hydrated molecules & hydrated ions

3. Which kinds of bonding can be found in a sample of H2o (l)?

a. hydrogen bond only b. Ionic & nonpolar hydrogen bonds

c. nonpolar covalent bonds only d. both polar covalent & hydrogen bonds

4. The bond between two identical non-metal atoms has a pair of electrons…

a. unequally shared between two b. equally shared between them

c. transferred fully from one atom to another d. with identical spins

5. Carbon tetrachloride has no net dipole moment because of……..

a. its planar structure b. its regular tetrahedral structure

c. similar sizes of carbon and chlorine atom

d. similar electron affinities of carbon and chlorine

6. Which type of bonding would be expected between S & Cl?

a. polyionic b. non-polar covalent

c. polar covalent d. ionic

7. Which formula represent a molecular substance?

a. Cao b. Al2O3 c. CO d. Li2O

8. Which bond has the greatest ionic character?

a. H-O b. H-F c. H-N d.H-CL

9. Which molecule is a polar molecule?

a. N2 b. CO2 c. CH4 d. H2O

10. Which of the following covalent bonds has the greatest polarity?

a. C-O b. Na-Br c. S-O d. Na-I

11. Which compound contains no ionic character?

a. CaO b. NH4Cl c. CO d. K2O

12. The forces of attraction that exist between nonpolar molecules are called..

a. electrovalent bond b. covalent bond

c. ionic bond d. van der Waals/dispersion forces

13. Which one of the following is a polar covalent bond?

a. Ca-Cl b. Cl-Cl c. P-Cl d. Si-Si

14. Element which are good catalyst and have ability to change their oxidation number are……

a. transition elements b. Nobel gases

c. alkalis d. all of them

15. In Haber process bonds between ammonia and iron surface weaken and break during…….

a. adsorption b. chemisorption's

c. both (a) & (b) d. desorption's

16. How does a catalyst work?

a. by decreasing the activation energy of a reaction

b. by decreasing the pressure of a chemical reaction

c. by increasing the concentration of reactants in a reaction

d. by increasing the temperature of a chemical reaction

17. Changes in oxidation number of ions which are involved in catalyst is done in…

a. homogeneous catalysis b. heterogeneous catalysis

c. hypergeneous catalyst d. hypogeneous catalyst

18. Which component is affected when a catalyst is added to a chemical reaction?

a. the amount of substrate b. the concentration of reactant

c. the amount of product d. the activation energy

19. Coordination number in simple cubic crystal structure:

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

20. Electron sea exists in……

a. polar bond b. ionic bond

c. covalent bond d. metallic bond

21. Which of the following is not a strong bond?

a. Van der Waals bond b. covalent bond

c. metallic bond d. ionic bond

22. In crystal lattice ions are arranged in …….

a. two dimensions b. four dimensions

c. three dimensions d. single dimensions

23. Crystal lattice is also known as……

a. lattice triangle b. space lattice

c. lattice line d. lattice arrangement

24. Metals can be hammered into different shapes and drawn into wires hence they are…..

a. soft b. malleable c. strong d. weaker

25. The three dimensional graph of lattice points which sets the pattern for the whole lattice is called……

a. space lattice b. simple lattice c. crystal lattice d. unit cell

26. In a metallic crystal :

a. the valence electrons constitute a sea of mobile electrons

b. the valence electrons are localized in between the kernels

c. the valence electrons remain within the field of influence of their own kernels

d. none of the above

27. If the pressure on a NaCl structure is increased, then its coordination number will……

a. increase b. decrease c. either (a) or (b) d. remain the same

28. The valence electrons of representative elements are…..

a. in s orbitals only b. located closest to the nucleus

c. located in d orbitals d. located in the innermost occupied shell

29. Which of the following bonds would be best categorized as covalent?

I. H-S II. Al-S III. N-F

a. I only b. II only c. III only d. I & III e. I,II & III

30. Which of the following species below would be considered molecular in nature?

a. C (diamond) b. C (graphite) c. Fe d. $AlCl_3$ e. PCl_3

31. Which of the following BEST explains the relatively low melting point of covalent molecular substances?

a. covalent molecular materials rely on weak electrostatic forces holding the ions together.

b. the "sea" of electrons between the atoms creates relatively weak bonding.

c. the intermolecular forces between the molecules are weak compared to ionic or covalent bonds.

d. the metals involved create uneven bonding with the non-metals.

e. the similar electronegativity of the atoms causes repulsions between the molecules.

32. Of the molecule below, only ……is nonpolar.

a. CO_2 b. H_2O c. NH_3 d. HCl e. $TeCl_2$

33. Of the following molecules only ……..is polar.

a. CCl_4 b. BCl_3 c. NCl_3 d. $BeCl_2$ e. Cl_2

34. Which of the following properties does not belong to a covalent substance?

a. Liquid with a low boiling point.

b. Insoluble in water and does not conduct electricity.

c. Soft solid and a very poor conductor of electricity.

d. High melting point and a brittle solid

35. What is the reason for ionic compound having high melting and boiling point?

a. The bonds between the atoms are strong.

b. A small amount of energy is needed to break the bonds between the ions.

c. Ionic compounds consist of a giant crystalline structure.

d. The bonds between the ions are strong.

36. Which of the following statements is correct?

a. In an electrolytic cell oxidation takes place at a positive anode.

b. In an electrolytic cell oxidation take place at a negative anode.

c. In an electrochemical cell reduction take place at a positive anode.

d. In an electrolytic cell oxidation takes place at a positive anode.

e. In an electrochemical cell reduction takes place at a negative anode.

37. When an ionic compound is dissolved in water, the ions in solution can best be described as…….

a. hydrated ions only b. dehydrated ions and molecules

c. both hydrated molecules and hydrated ions d. hydrated molecules only

38. Which compound contains no ionic character?

a. CaO b. CO c. NH4Cl d. K2O

39. Which one of the following describes the major intermolecular force in I2 (s) ?

a. covalent bond b. ionic bond c. hydrogen bond

d. dispersion forces e. dipole-dipole forces

40. What is the coordination no. of body centered cube?

a. 4 b. 6 c. 8 d. 12

41. Which of the following is a covalent crystal?

a. dry ice b. rock salt c. ice d. quartz

42. The no. of tetrahedral voids in the unit cell of face centered cubic lattice of similar atoms is……..

a. 4 b. 6 c. 8 d. 10

43. Point which shows position of atoms in a crystal are called…….

a. lattice point b. lattice lines c. lattice circles d. lattice arrangement

44. In crystal lattice ions are arranged in…….

a. Two dimensions b. four dimensions

c. Three dimensions d. single dimensions

45. Crystal lattice is actually……

a. array of points b. lines of points c. sum of points d. triangles of points

46.Usual habit of crystals of ice is……

a. cubic b. monoclinic c. hexagonal d. rhombic

47. Energy which is released when 1 mole of ionic crystal is formed is……

a. lattice energy b. heat energy c. molar energy d. none

48. very high boiling and melting points are of……..

a. covalent compound b. ionic compounds

c. metallic compound d. diatic bonds

49. Which of the following is an example of homogeneous catalysis?

a. enzyme catalysis b. Haber's process

c. hardening of animal and vegetable oils

d. cracking of heavy oils for synthesis of gasoline

50. Select the incorrect statement form the following options.

a. intermediate compound formation theory fails to explain the action of promoters

b. intermediate compound formation theory fails to explain the functions of catalyst in homogeneous reactions.

c. intermediate compound formation theory fails to explain the action of catalytic poisons

d. intermediate compound formation theory fails to explain the function of catalyst in heterogeneous reactions.

51. Which of the following statement is incorrect about the adsorption theory?

a. the catalyst is more efficient in finely divided state

b. action of promoters is not explained

c. enhanced activity of a rough surfaced catalyst is explained

d. specific action of catalyst is explained

52. Which of the following process is used for the preparation of sulphuric acid?

a. Ostwald's process b. Bergius process

c. Deacon's process d. Chamber process

53. Select the catalyst which is used for manufacture of ethanol from glucose.

a. maltase b. Pt/V2O c. Zymase d. Fe2O3

54 Name of the catalyst which is used for manufacture of glucose from cane sugar

a.maltase b. Zymase c. CuCl2 d. CuCl

55. The adsorption theory is applicable to……

a. homogeneous catalysis b. heterogeneous catalysis

c. catalysis d. none of the above

56.Name the metal which increases the activity of iron metal when added in small amount.

a. Cu b. Mo c. Al d. Mn

57. The strength of the metallic bond increases with:

a. increase in number of valence electrons

b. decrease in number of valence electrons

c. the decrease in size of atom

d. increase in size of atom

58. Water accumulates in cells of animals and plants due to presence of:

a. covalent bond b. coordinate bond

c. hydrogen bond d. electrovalent bond

59. Polar refers to……

a. even-sized electronegativity's in a bond

b. bonds that have an uneven distribution of charge

c. bonds that have an even distribution of charge

d. the formation of uneven size ions

60. Which of the following contain a covalent bond?

a. Li2O b. NO3 c. Mg3N2 d. NaCl

61. Which substance has a polar covalent bond between its atoms?

a. NH3 b. NaCl c. K3N d. Ca3N2

62. Which one among the following does not have the hydrogen bond?

a. Water b. phenol c. liquid NH3 d. liquid HCl

63. The no. of lone electron pairs in the N2 molecule is…….

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

64.Which substance represents a molecule that can combine with a proton (H1+)?

a.NH3 b. Na1+ c. HCl d. H3O1+

65. What type of chemical bond holds the atoms together within a water molecule?

a. nonpolar covalent bond b. ionic bond

c. polar covalent bond d. hydrogen bond

66. Classify the O-H bond in CH3OH as ionic, polar covalent or nonpolar covalent.

a. nonpolar covalent b. none of this c. polar covalent d. ionic

67. Which pair of elements would be most likely to form an ionic compound?

a. Cl & I b. Al & K c. C & S d. Cl & Mg

68. Which one of the following compound is most likely to be an ionic compound?

a. CCl4 b. CO2 c. KF d. CS2

69. Process in which catalyst has a different phase to a reaction mixture, this process is known as,…..

a. homogeneous catalysis b. heterogeneous catalysis

c. hypergeneous catalyst d. hypogeneous catalyst

70. Which statement best describes how a catalyst can speed up a chemical reaction?

a. the catalyst binds to enzymes to release substrates.

b. the catalyst makes lower energy pathway available.

c. the catalyst increases the concentration of products.

d. the catalyst increases the concentration of reactants.

71. Repeatable entity of a crystal structure is known as……

a. crystal b. lattice c. unit cell d. miller indices

72. The atomic diameter of an BCC crystal is…..

a. a b. a/2 c. a/(4/ $\sqrt{3}$) d. a/(4/ $\sqrt{2}$)

73. Atomic packing factor is……..

a. distance between two adjacent atoms.

b. projected area fraction of atoms on a plane.

c. volume fraction of atoms on a plane.

d. none.

74. How many nearest neighbors are there for an atom in a hexagonal close-packed crystal structure?

a. 6 b. 12 c. 18 d. 24

75. Points which hows position of atoms in a crystal are called…….

a. lattice points b. lattice lines c. lattice circles d. lattice arrangement.

76. The energy released when an electron is added to an atom is the gaseous state is called……

a. electro positivity b. ionization potential

c. electron affinity d. electronegativity

77. Giant ionic structures is also name given to…….

a. ionic lattice b. crystal lattice c. metallic lattice d. covalent lattice.

78. Compound with identical crystal structure and analogous chemical formula are called……..

a. isomers b. isotones c. allotropes d. isomorphs.

79. NaCl is an example of……

a. ionic solid b. covalent solid c. metallic solid d. molecular solid.

80. Statement I : Crystalline solid are anisotropic

Statement II : Crystalline solids are not as closely packed as amorphous solids.

a. statement I is true; statement II is true; statement II is a correct explanation for statement I.

b. statement I is true; statement II is true; statement II is not a correct explanation for statement I.

c. statement I is true; statement II is false.

d. statement I is false; statement II is true.

81. Which is classified as nonpolar covalent?

a. the H-I bond in HI b. the H-S bond in H_2S

c. the P-Cl bond in PCl_3 d. the N-Cl bond in NCl_3

e. the N-H bond in NH_3

82. Which of the following bonds would be best categorized as covalent?

a. Strong covalent bonds between atoms with similar electronegativity.

b. Covalently bound atoms arranged in small individual molecules.

d. Positively charged ions covalently bound with many mobile electrons.

e. none of these.

83. The substance below BEST characterized as having a high melting point and able to conduct electricity in the liquid state only would be:

a. CH_4 b. V_2O_5 c. CO d. HF e. C (diamond)

84. Of the molecules below, only ……..is polar.

a. CCl_4 b. CH_4 c. SeF_4 d. $SiCl_4$ e. CO_2

85. Which of the following would contain both covalent and ionic bonding?

a. CaO b. NH_3 c. C (diamond) d. $Ca(NO_3)_2$ e. CO_2

86. Why can ionic substance conduct electricity when in solution or molten, but not when they are in the solid state.

a. When in solution or molten, the protons are free to move, but not free to move in the solid state.

b. When in solution or molten, the atoms are free to move, but not free to move in the solid state.

c. When in solution or molten, the ions are free to move but not free to move in the solid state.

d. Electrons cannot travel through solids.

87. Which of the following pairs of element will combine to produce a covalent bond?

a. sodium & chlorine b. lithium & bromine

c. magnesium & oxygen d. hydrogen & chlorine.

88. Which of the following pairs of atoms would form a non-polar covalent bond?

a. C & O b. N & O c. Cl & Cl d. Na & Cl e. Ne & Ne

89. The bond between two identical non-metal atoms has a pair of electrons;

a. unequally shared between the two.

b. transferred fully from one atom to another.

c. with identical spins.

d. equally shared between them.

90. Ions of ionic crystals become free when it is in……..

a. solid state b. compound state c. molten state. d. none.

91. Crystal lattice is also known as…….

a. lattice triangle b. space lattice c. lattice line d. lattice array.

92. The radius ratio in CsCl is 0.93. the expected lattice structure is :

a. octahedral b. square planer c. tetrahedral d. body centred cubic

93. The no. of atoms per unit cell of bcc structure is……

a. 1 b. 2 c. 4 d. 6

94. Usual property of ionic crystals is that they are…….

a. stable b. unstable c. gaseous form d. compound forming.

95. Lattice energy is decreased when size of anion is…….

a. decreased b. increased c. remain same d. no change.

96. Which of the following is not a category of catalysis?

a. homogeneous b. heterogeneous c. artificial d. enzymatic.

97. Which of the following process is used for the preparation of chlorine gas?

a. Deacon’s process b. Bergius process

c. Ostwald’s process d. Haber’s process

98. The factor which determines the activity of a heterogeneous catalyst is…….

a. total surface are only.

b. the no. of active sites per unit amount of catalyst only.

c. method of preparation, prior treatment only.

d. total surface area, no. of active sites and method of preparation.

99. Select the incorrect statement about the adsorption theory from the following option.

a. the surface of the solid catalyst possess some isolated active Centre's having residual affinity.

b. due to these Centre's , the molecules of the gaseous reactants get adsorbed in unimolecular thick layer.

c. the adsorbed reactants get activated and then react.

d. the energy required for activation is more than that required for uncatalysed reaction.

100. What is the role of Mo in following reaction?

$$N2+3H2 \Rightarrow 2NH3$$

a. catalytic inhibitor b. catalytic promoter

c. catalyst d. Auto catalyst

Unit-II Corrosion and Electrochemistry

1. Standard hydrogen electrode has an arbitrarily fixed potential……

a. 0.00 volt b. 1.00 volt c. 0.10 volt d. none of these

2. When aqueous solution of NaCl is electrolyzed……

a. Cl2 is evolved at the cathode b. H2 is evolved at cathode

c. Na is deposited at the cathode d. Na appears at the anode

3. Electrolysis is the process in which a chemical reaction takes place at the expense of……

a. chemical energy b. electrical energy c. heat energy d. none of these

4. During electrolysis of $CuSO_4$ (aq) using Cu electrodes, when the current is passed through an electrolytic solution. Which of the following process will occur?

A.anions move towards anode and cations move towards cathode.

b. cations and anions both move towards cathode.

c. cations and anions both move towards anode.

d. no movement of the ions occur.

5. An electrochemical cell is based upon……

a. acid-base reaction b. redox reaction

c. nuclear reaction d. none of the above.

6. During a redox reaction, an oxidizing agent…..

a. gain electrons b. is oxidized c. loses electrons d. is hydrolyzed.

7. Which one of the following will be good conductor of electricity?

a. pure distilled water b. molten NaCl c. dilute sol of glucose d. chloroform

8. In the electrolysis the process of oxidation occurs at…..

a. anode b. cathode c. both cathode and anode d. in electrolytic solution.

9. In the reduction process the oxidation no. of the element……

a. increases b. decreases c. does not change d. none of the above.

10. During the electrolysis of H_2SO_4 (aq) O_2 is evolved at……

a. cathode b. anode c. both a & b d. none of these.

11. The e.m.f. produced by a voltage cell is……..

a. electrode potential b. reduction potential c. cell potential d. oxidation potential.

12. Metallic conductors conduct electricity…….

a. with chemical change b. without any chemical change

c. both a & b d. none of these

13. The process of producing the chemical change in an electrolytic cell is called…..

a. electrolyte b. electrolysis c. electrodes d. conductors.

14. An apparatus in which chemical energy in converted to electrical energy is called…..

a. electrolytic cell b. galvanic cell c. fuel cell d. down cell.

15. Electric current passes through both molten and solution form of NaCl because of…..

a. ionic bonding b. Na+ & Cl- ions c. ions of water d. both a & b

16. Substances through which electric current cannot pass are called…..

a. insulators b. conductors c. anode d. cathode.

17. Sodium metal is obtained by the electrolysis of fused NaCl in a cell is called….

a. Nelson's cell b. Down's cell c. Daniell cell d. Voltaic cell

18. A system containing of electrodes that dips into an electrolyte in which a chemical reaction either uses or generates an electric current id called…..

a. voltaic cell b. electrochemical cell c. voltaic or galvanic cell d. fuel cell

19. In lead accumulator the electrolyte H_2SO_4 solution is…….

a. 30 % b. 60 % c. 80% d. 90 %

20. During electrolysis of $CuSO_4$ (aq) using Cu electrodes Cu is deposited at…….

a. anode b. cathode c. both a & b d. none of these

21. Several blocks of magnesium are fixed to the bottom of a ship to…….

a. prevent action of water and salt b. keep away the sharks

c. prevent puncturing by under-sea rocks d. make the ship lighter.

22. Electrolyte used for tin plating is

a. sulphide ore b. stannous sulphate c. hydrogen sulphate d. sodium chloride

23. An electrolytic cell uses electrical energy to drive….

a. chemical reaction b. physical reaction c. no reaction d. none of above

24. Faraday's constant is defined as…….

a. charge carried by 1 electron b. charge carried by one mole of electrons

c. charge required to deposit one mole of a substance d. charge carried by two mole of e-

25. One ampere of current is passed for 9650 seconds through molten $AlCl_3$. What is the weight in grams of Al deposited at cathode? (Atomic weigh – 27)

a. 0.9 b. 9.0 c. 0.09 d. 90.0

26. One Faraday of the electricity is passed separately through one litre of one molar aqueous solution of (i) $AgNO_3$ (ii) $SnCl_4$ and (iii) $CuSO_4$. The no. of moles of Ag, Sn and Cu deposited at cathode are respectively…….

a. 1.0, 0.25, 0.5 b. 1.0, 0.5, 1.0 c. 0.5, 1.0, 0.25 d. 0.25, 0.5, 1.0

27. Which among the following metals is employed to provide cathodic protection to iron?

a. Zinc b. Nickel c. Tin d. Lead

28. During a cathodic protection, the sacrificial anode……

a. accepts electrons from the protected metal.

b. reacts spontaneously with the protected metal.

c. oxidizes more readily than the protected metal.

d. causes the protected metal to become an anode.

29. Iron corrodes faster in

a. hard water b. soft water c. demineralized water d. distilled water.

30. A piece of Au does not react spontaneously with 1.0 M HCl. Which of the following statement is true?

a. Au is a weaker reducing agent than H_2

b. Au is a stronger reducing agent than H_2

c. Au is a weaker oxidizing agent than H^+

d. Au is a stronger oxidizing agent than H

31. Which of the following metals protects itself by forming a passive layer of its own oxide?

a. Pt b. Au c. Fe d. Al

32. During galvanic corrosion, the noblest metal acts as ….

a. anode b. cathode c. both a & b d. corroding metal.

33. Cathodic protection corrosion control is most suitable for ……

a. bimetallic couple b. buried iron pipelines c. window grills.

d. metallic articles completely immersed in water.

34. Anodized coatings are generally produced on……..

a. non-ferrous metal b. ferrous metal c. alloy d. non-metal

35. Waterline corrosion in steel tank is an example of ……

a. stress corrosion b. differential aeration corrosion

c. pitting corrosion d. differential metal corrosion

36. Ships sailing in ocean suffer from……

a. stress corrosion b. grain-boundary corrosion

c. pitting corrosion d. waterline corrosion

37. Galvanizing is a process of…….

a. coating tin on zinc b. coating iron on zinc c. coating zinc on iron d. none of above

38. Caustic embrittlement in boilers is an example of ……

a. pitting corrosion b. differential aeration corrosion

c. stress corrosion d. grain-boundary corrosion

39. In which of the following metals is the specific volume of oxide is more than that of the metal?

a. Cr b. Al c. W d. all of the above

40. Chromate coating are…….

a. non-porous b. more resistant than phosphate coatings

c. amorphous d. all of the above.

41. Which of the following metals are more corrosion resistant than expected from their position in the electrochemical series?

a. Mg b. CO c. Al d. Fe

42. In anodized Aluminium, the corrosion protection is due to…..

a. passive oxide coating b. phosphate coating c. chromate coating d. organic coating.

43. Differential metal corrosion is an example of …….

a. galvanic corrosion b. crevice corrosion c. stress corrosion d. water line corrosion.

44. During corrosion, evolution of hydrogen occurs in……

a. acidic medium b. basic medium c. neutral medium d. all are correct.

45. Pitting corrosion can be explained on the basis of …….

a. differential aeration b. size of anode and cathode

c. localized corrosion d. all of the above

46. Anodic protection can be applied to…..

a. all the metals b. more electropositive metals c. less electropositive metals

d. metals which undergo active-passive transition.

47. The flux used in galvanizing is…….

a. NH4Cl b. BaCl2 c. NaCl d. palm oil

48. The main objective of metal finishing is to modify…….

a. chemical properties of material b. surface properties of materials

c. physical properties of materials d. electrical properties of materials

49. Polarization of electrodes is reduced by ……..

a. increasing the ionic concentration b. increasing the electrode surface area

c. decreasing the ionic concentration d. both b & c

50. The process of electroplating involves...

a. Electrolysis b. discharge of metal ions at cathode.

c. redox reaction d. all of the above.

51. During electrolysis of KNO3, H2 is Evolved at

a. anode b. cathode

c. both (a) &(b) d. None of these.

52. During Electrolysis of fused NaCl, Which of the following reaction occurs at anode?

a. acid-base reaction. b. Redox Reaction

C. Nuclear reaction d. None of the above.

53. Which of the following represents the same net reaction as the electrolysis of aqueous H2SO4?

a. Electrolysis of water b. electrolysis of molten NaCl

c. Electrolysis of aqueous HCl d. electrolysis of aqueous NaCl.

54. In a salt bridge KCl is used because

a. it is an electrolyte b. K+ & Cl- transfers easily

c. Agar- Agar forms a good jelly with it. d. KCl is also present in the calomel electrode.

55. A oxidizing agent is a substance which brings about

a. electron donation d. oxidation

c. Reduction d. hydrolysis.

56.In an oxidation process the oxidation number of the element

a. Increases b. Decreases c. Does not change d. None of above.

57. Which of the following is the definition of oxidation?

a. gain of electrons b. loss of electrons

c. addition of H2 d. Removal of O2.

58. Which element acts as a reducing agent in the reaction?

$Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$?

a.Zn b. H c. S d.O

59. When the current is passed through an electrolytic solution, which of the following process will occur?

a. Anions move towards anode & cations move towards cathode

b. Cations & anions both move towards anode

c. Cations & anions both move towards anode.

d. No movement of the ions occurs.

60. A cell which produces electric current by redox reaction is called

a. Standard cell b. voltaic cell

c. reversible cell d. concentration cell.

61. Which of the following conduct electricity due to the migration of electrons only?

a. Copper metal b. NaCl Molten

c. NaCl d. NaCl Solution.

62. Substances through which electric current can pass are called

a. Insulators. B. Conductors c. Cathode d. Anode.

63. Metallic conduction is due to the

a. Movement of electrons b. Movement of ions

c. Both (a) & (b) d. None of these.

64. The flow of electrons are called

a. Electrolyte b. Electric Current c. Cathode d. Anode.

65.A substances which in molten state or in solution form allows electric current to pass through it is called.

a. Electrolyte b. insulator c. conductor d. None of these.

66. The process in which ionic compound when fused of dissolved in water split up into charged particles is called

a.Electrolysis b. Hydration c. ionization d. Conduction.

67. The reaction in a galvanic cell is

a. Spontaneous b. Non –Spontaneous c. Fuel Cell d. Down Cell.

68. Aqueous copper sulphate solution is electrolyzed using platinum electrodes. The electrode reaction occurring at cathode is

a. $Cu^{2+}(aq) + 2e^- \rightarrow Cu(S)$

b. $Cu(s) \rightarrow Cu^{2+}(aq) + 2e^-$

c. $2H_2O(l) \rightarrow O_2(g) + 4H^+(aq) + 4e^-$

d. $O_2(g) + 4H^+(aq) + 4e^- \rightarrow 2H_2O(l)$

69. Conductivity of 0.01M Nacl solution is 0.00147ohm-1cm-1 what happens to this conductivity if extra 100ml of H2o will be added to the above solution?

a. Increases b. Decreases

c. Remains Unchanged d. First increases & then decreases.

70. The Electrochemical equivalent of a metal is ‘X’gram coulomb -1

a. x b. x* 96500 c. x/ 96500 d.1.6 8 10-9 *x

71. One Faraday of electricity is passed through molten Al2O3 aqueous solution of CuSO4 and molted NaCl taken three different electrolytic cells connected in series. The mole Ration of Al, Cu,& Na deposited at the respective cathode is

a. 2: 3: 6 b.. 6: 2 :3

c. 6 :3 :2 d. 1: 2 :3

72. Li occupies higher position in the electrochemical series of metals as compare to Cu since

a. the standard reduction potential of Li+/Li is lower than that of Cu 2+/Cu

b. the standard reduction potential of Cu2+/Cu is lower than that of Li+/Li

c. The standard oxidation potential of Li/Li+ is lower than that of Cu/Cu2+

d. Li is smaller in size as compared to Cu.

73. Consider the following electrochemical cell

Fig.

In this operating electrochemical cell

a. Electrons flow toward the Cu & the Cu2+ ions Migrate toward the Zn.

b. Electrons flow towards the Cu & the Zn2+ ions migrate the Cu.

c. Electrons flow towards the Zn & the Cu2+ ions migrate the Zn.

d. Electrons flow towards the Zn & the Zn 2+ migrate towards the Cu.

74. During a cathodic protection, the sacrificial anode--------

a. accepts electrons from the protected metal

b. Reacts spontaneously with the protected Metal.

c. Oxidizes more readily than the protected metal.

d. causes the protected metal to became an anode.

75. Consider the following diagram of a piece of iron, cathodically protected by magnesium

Diagram:-

What is happening during this process?

a. Iron acts as the anode & water is oxidized.

b. Iron acts as the cathode & oxygen is reduced

c. Magnesium acts as the anode & iron is oxidized.

d. Magnesium acts as the cathode & iron is reduce.

76. What occurs when a piece of Zn is placed in 1.0 M Cu(NO3)2?

a. [Cu2+] decreases b. [Zn 2+] decreases

c. [NO3-] increases d. No change occurs

77. Pin holes on Zinc – Coated iron articles are less corrosive to iron than pn holes on tin coated iron articles due to ---

a. High ratio of anodic to cathodic areas.

b. Low reduction potential of tin.

c. Low ratio of anodic to cathodic areas.

d. High rate of corrosion.

78. At low hydrogen overvoltage rate of corrosion of Metals---

a. Decreases b. Increases

c. Increases initially & then decreases d . Remains the same.

79. Which corrosion control Technique is most suitable in case of buried iron pipelines?

a. Anodic Metal coating b. Anodic Protection

c. Cathodic Protection d. Corrosion Inhibitors.

80. Atmospheric corrosion is caused by

a. Humidity in air b.Frequency of rainfall

c. presence of gases like SO2- d. Presence of O2 in air.

81. Which of the following is an example for anodic coating?

a. Tinning b. Galvanizing c. Painting d. Chromizing.

82. Which Part(s) of corrosion cell undergoes corrosion.

a. Anodic part b. cathodic part c. Both (a) & (b) d. None of the above.

83. Presence of copper impurity in Zinc causes

a. Waterline Corrosion b. Galvanic Corrosion c. pitting Corrosion d. Crevice Corrosion.

84. Electrochemical Corrosion is essentially due to

a. Formation of anodic & cathodic areas

b. electrical contact between anode & cathode for conduction of electrons

c. Electrolyte, Usually provided by the presence of Moisture

d. all of the above.

85. On the basis of physical nature & behavior, the corrosion products may be

a. Soluble b. Insoluble & fixed to the metal c. Discontinuous & not fixed d. all of the above.

86. Phosphate coatings can be produced by chemical reaction of a base Metal with aqueous solution of

a. Chromic acid & chromite b. Phosphoric acid & Phosphate

c. chromate coating d. organic coating.

87. Which of the following factor accounts for higher corrosion rate

a. large anodic area & small cathodic area

b. small anodic & large cathodic area

c. High Temperature

d. High humidity.

88. Sacrificial anode method of protecting a metal is an example of

a. anodic protection b. cathodic protection

c. Metal coating d. organic coating.

89. Anodized coatings have good Resistance to corrosion because

a. They are thicker than neutral oxide films.

b. They are thinner than neutral oxide films.

c. both (a) & (b)

d. None of the above.

90. Polarization of anode results in

a. Increase in the rate of corrosion.

b. Decrease in the rate of corrosion.

c. Increase in the rate of cathodic reaction.

d. Increase in the rate of anodic reaction.

91. At high hydrogen overvoltage, the rate of corrosion---

a. Increases d. Decreases

c. Increases initially & then decreases

d. Remains the same.

92. Electrolytes decomposes at a specific potential due to

a. Development of electrolytic cell b. development of galvanic cell

c. development of electrical double layer

d. None of the above.

93. The electrode with lowest hydrogen overvoltage is

a.Zn. b.Ni c.Hg d.Pt.

94. For an electrolytic mixture containing Zn2+,Cu2+,Ag2+,Au2+ the ion which is discharged first is ---

A.Zn2+ b. Cu2+ c. Ag + d.Au3+

95. In electroplating the article to be placed is subjected to pickling. This is to

a. Remove Grease b. Increase the rate of plating c. Remove oxide Scale d. Get a bright deposit.

96. Electrodes plating can be used for plating of

a. Metals b. Semiconductors c. Insulators d. all of the above.

98. Conductors & Insulators can be plated by

a. Electroplating b. Electroless plating c. Electro polishing d. None of the above.

99. During plating, Favorable condition having brighter & smooth deposits is –

a.Low temperature b. low metal on concentration

c. Both (a) & (b) d. None of the above.

100. When the metal structure to be placed is irregular, the process employed is

a. Electroplating b. Electro less plating c. electro polishing d. none of the above.

101. The practical decomposition potential is greater than the theoretical decomposition potential because of

a. ionization b. dissociation c. polarization of electrodes d. none of the above.

102. Formation of rust on iron is an example of

a. oxidation b. liquid metal corrosion

c. electrochemical corrosion d. chemical corrosion.

103. Which of the following is not true for dry corrosion?

a. It takes place in dry conditions.

b. It takes place in heterogeneous metal surfaces only.

c. It takes place uniformly.

d. It takes place by direct chemical attack on metal.

104. The corrosion of buried pipelines in passing from one soil type of another is caused by

a. Differential aeration b. stress c. Erosion d. Presence of microbes.

105. Welding is a better joining technique than using mechanical fasteners because it prevents.

a. Stress corrosion. Pitting corrosion

c. Galvanic corrosion d. crevice corrosion.

106. During rusting of iron

a. corrosion occurs at cathode.

b. Corrosion product is deposited at anode.

c. Corrosion occurs at anode & rust is deposited at cathode.

d. Corrosion occurs at anode & rust is deposited at anode.

107. The protection of ship hull from marine corrosion by using magnesium sheets of blocks is an example of

a. Cathodic protection b. Impressed voltage protection

c. Sacrificial cathodic protection d. Sacrificial anodic protection.

108. Which of the following types of corrosion does not occur due to formation of oxygen concentration cell?

a. Crevice corrosion b. Waterline corrosion

c. Erosion Corrosion d. Soil corrosion.

109. Wire mesh corrodes faster at the joints due to

a. Galvanic corrosion b. Stress corrosion

c. Crevice corrosion d. pitting corrosion.

110. Which of the following cannot be used for sacrificial anodic protection of steel?

a. Pb. b.Mg c. Al d. Zn

111. Which of the following is not a chemical conversion coating?

a. Chemical oxide coating b. Ceramic coating c. Phosphate coating d. Chromate coating.

112. The process of coating iron & steel with powdered Zinc & Zinc oxide is called

a. Sherardizing b. Metal cladding c. Colorizing d. Chromizing.

113. Zinc can be electrodeposited from acidic solutions, even though the standard electrode potential of zinc is less than that of hydrogen because of

a. Polarization b. Decomposition c. Hydrogen Over voltage d. None of the above.

114. Which of the following factors does not affect the polarisaton of electrodes?

a. stirring b. Nature of electrode.

c. Concentration & conductivity of electrolyte d. None of the above.

115. Which of the following is not a component of electroless plating bath?

a. Reducing agent b. conducting solution c. Metal salt d. Complexing agent.

116. Which of the following factors does not influence throwing power of electroplating bath?

a. Current density b. Conductance of solution

c. complexing agent d. competing electrode reactions.

117. In electro deposition of copper from CuCN, NaCN is added to the electrolyte bath.

a. as brightener b. as structure Modifier

c. to reduce metal ion concentration d. To enhance electrolyte concentration.

Answer Key

1. a	2. b	3. b	4. a	5. b	6. a	7. b	8. a	9. b	10. b
11. a	12. b	13. b	14. a	15. b	16. b	17. d	18. b	19. a	20. b
21. a	22. b	23. a	24. b	25. a	26. a	27. a	28. c	29. a	30. a
31. d	32. b	33. c	34. a	35. b	36. d	37. c	38. c	39. d	40. d
41. c	42. a	43. a	44. a	45. d	46. d	47. a	48. b	49. d	50. d
51. b	52. b	53. a	54. b	55. b	56. a	57. b	58. b	59. a	60. b
61. a	62. b	63. a	64. b	65. a	66. c	67. b	68. a	69. b	70. c
71. a	72. a	73. b	74. c	75. b	76. a	77. a	78. b	79. c	80. d
81. b	82. a	83. b	84. d	85. d	86. b	87. b	88. b	89. a	90. b
91. b	92. b	93. d	94. d	95. c	96. d		98. d	99. b	100. b
101. c	102. c	103. b	104. a	105. d	106. c	107. d	108. c	109. b	110. a
111. b	112. a	113. c	114. d	115. b	116. a	117. c			

Unit-III Paint, Varnishes, Insulators, Polymers, Adhesives & lubricants

1. Which of the Following is not the constituent of Paint?

a. Pigment b. Thinner c. Anti skinning Agent d. Alcohol.

2. Which of the pigment gives white colour to the paint?

a. Chromium Oxide b. Ferric Oxide c. Zinc Oxide d. Brown Umber.

3. The function of pigment is?

a. Reduces the fluidity of the paint b. Provides opacity to the paint

c. Improve the drying quality of paint d. Prevent gelling skinning of the paint film.

4. The constituents which Increases the random arrangement of pigment particles in paint are

a. Thinners b. Pigments c. Fillers/Extenders d. Thinner

5. The constituents which reduces the fluidity of paint is

a. Antiskining agent b. Driers c. Fillers/Extenders d.Thinners.

6. An example of bad thermal insulator is

a. Potassium b. Paper c. cork d. wool.

7. Handles of saucepans & other cooking utensils are made up of

a. Thermal conductors b. thermal Insulators c. Shares of heat d. Insulators of electricity.

8. An example of conductor of heat is

a. Paper b. Cloth c. Air d. Aluminium

9. The insulation ability thermal insulator with the presence of moisture would

a. Increase b. Decrease c. Remain affected d. None of the above.

10. Glass wool is a good insulator because it has –

a. Free electrons b. atoms colliding frequency c. porous body d. low density

11. Thermal conductivity of glass wool varies from sample to sample because of variation in

a. Composition b. density c. porosity d. all of the above.

12. Which plastic materials contain strong cross linking in their molecular structure?

a. Thermoplastic materials b. Thermosetting materials

c. Both (a) & (b) d.None of the above

13. Which of the following is an example of thermoplastic material?

a. Epoxy Resins b. Nylon 66 c. Teflon d. Bakelite

14. The polymer cannot be recycled

a. Thermoplastic b. Thermosets c. elastomers d. all polymers.

15. Name polymer among the polymers which do not soften on heating

A.Bakelite b. Polythene c. Polystyrene d.PVC.

16. Name the polymer that occur naturally

a. Starch & Nylon b. Starch & cellulose

c. Proteins & Nylon d. Proteins & PVC.

17. Which is used in the formation of epoxy resin.

a. Phenol b. Bisphenol c. Formaldehyde d. Ethylene.

18. Polyvinyl chloride is prepared from the monomer

a. Ethyl chloride b. Formaldehyde c. Vinyl chloride d. Ethylene's.

19. The example of linear polymer is

a. Polystyrene b. Nylon-66 c. Epoxy Resin d. Bakelite

20. The monomer of vinyl chloride contain

a. Single bond b. double bond c. triple bond d. None of the above.

21. Epoxy resin is prepared from

a. Epicholroydrin & bisphenol b. Epichlorohydrin & phenol

c. Bisphenol & phenol d. Epichlorohydrin & Formaldehyde.

22. Thermosetting synthetic adhesive is

a. Starch b. Phenol formaldehyde Resin c. Asphalt d. Shellac Resin.

23. In adhesive bonding, which one of the following is the term used for parts that are joined

a. adhered b. adherent c. adhesive d. infinitum.

24. The polymer which can be used as synthetic adhesive is

a. Neoprene b. Buna-S c. Epoxy Resin d. Polystyrene.

25. The purpose of lubrication is

a. To reduce friction b. To reduce wear.

C. To reduce corrosion d. all of the above.

26. Which one is not a example of solid lubricant?

a. Graphite lubricant b. Molybdenum Disulphite

c. Polytetrafluoroehylene d.Multigrade.

27. Apart from reducing friction & wear, the secondary purpose of lubricant is

a. Heat dissipation b. reducing corrosion c. Both (a) & (b) d. None of these.

28. For rocket & submarine the lubricant use is

a. Animal oil b. Vegetable oil c. mineral oil d. synthetic oil.

29. The type of lubricant used for cutting tools is

a. Solid lubricant b. Liquid lubricant c. Semisolid lubricant d. all of the above.

30. Solid lubricant is used for

a. cutting tool b. steam turbine c. sewing machine d. Gun parts.

31oilliness is the property of lubricant

a. absorb on the surface b. adsorb on the surface

c. Mixed with the surface d. none of the above.

32. Which of the following is not true for lubricants?

a. A good lubricant should High mechanical stability.

b. A good lubricant should have low volatility

c. A good lubricant should form stable emulsion with water.

d. A good lubricant should have high viscosity index.

33. The temperature at which oil ceases to flow from a on a machinery part is called

a.Flash point b. cloud point c. pour point d. fire point

34. The example of solid lubricant is

a. Grease b. Vaseline c. castor oil d. Talc

35. Repeatable unit of polymers

a. Isomer b. Copolymer c. Homopolymer d. monomer

36. Turpentine oil in paints is used as a

a. Pigment b. film forming pigment c. thinner d. drier.

37. Lubrication is necessary to protect wear & tear caused due to

a. electrostatic force b. gravitational force c. frictional force d. Magnetic force

38. Select the incorrect statement from the following options;

a. Lubricant keep out dirt b. Lubricant acts as a seal

c. Lubricant Transmit fluid power d. Lubricant enhances corrosion.

39. The viscosity of petroleum oil for hydraulic lifts is

a. High b. Low c. Moderate d. Very high.

40. On increasing the lubrication, the efficiency of the machine

a. Increases b. Decreases c. Remain Same d. Does not get affected.

41. Which of the following statement is incorrect about the team?

a. It has high density of the order 2.1 to 2.3 gm/cm3

b. It has excellent electrical insulation properties.

c.It has coefficient of friction

d. It is dense & chemically inert.

42. Select the incorrect statement from the following option

a. Thermosets have 3-dimensional, cross linked network structure.

b. Thermosets cannot be remoulded, reused or reclaimed.

c. Thermosets are hard, strong & brittle.

d. Thermosets are soluble in suitable solvent.

43. Which of the following is not an example of thermosets?

a. Epoxy b. Teflon c. Vulcanized Rubber d. Bakelite.

44. Which of the following statement is incorrect about the Teflon?

A.It has density of the order 2.1 to 2.3 gm/cm3

b. It has excellent electrical insulation properties

c. It has high coefficient of friction

d. It is chemically inert.

45. Select the incorrect statement from the following option

a. Condensation polymerization requires two reactive functional groups to be present at both end of the monomer.

b. No by- product is formed in condensation polymerization.

c. In condensation polymerization, growth of chain occurs at minimum of the two active centers.

d. In condensation Polymerization, Polymer MW rises steadily throughout the reaction.

46. Which of the following act as initiator in free – Radical polymerization?

a. Grignard Reagent b. Lewis Acid c. Benzoyl Peroxide d. Potassium Amide.

47. Which of the following is a conducting polymer?

a. Polyaniline b. Polyacetylene c. Polypyrrole d. All of the above.

48. The monomer Tetrafluroehylene can be used for the preparation of

a. PMMA b. Polyurethane c. Teflon d. Polyethylene.

49. A lubricant should possess High

a. Volatility b. Acidity c. Oiliness d. None of these.

50. A lubricant is used primarily to prevent

a. Corrosion of metals b. Oxidation of Metals

C.Wearing out of rubbing metallic Surface d. Reduction of Metals.

51. A suitable lubricant for watches

a. Grease b. Graphite c. Hazel Nut oil d.Palm Oil.

52.A good lubricant should have

a. Low viscosity –Index b. High viscosity –Index

c. Low fire point d. High Volatility

53. Capacity of oil to stick on the surface of machine parts under condition of heavy load is called

a. Volatility b. Oilliness c. acid Value d. Flash point.

54. In case of liquid lubricant, Generally

a. Flash point is higher than the fire point

b. Fire point is higher than the flash point

c. Fire point is lower than the flash point

d. Flash & fire point are identical.

55. When the resistance to movement of sliding/moving parts is only due to internal resistance between the lubricant itself, and lubricant is called

a. Fluid film b. Boundary c. Thin Film d. Extreme pressure.

56. Grease are not used to lubricate

a. Rail axel boxes b. Gears c. Bearing working d. Delicate Instruments

57. Machines operating under high temperature & load are best lubricated by—

a. Minerals b. Solid lubricants c. Grease d. Animal oil.

58. Single most important property of lubricant oil is

a. Its fire point b. cloud point c. oiliness d. Viscosity Index

59. Viscosity of oil is measured by using

a. Redwood Viscometer. B.Ostwalds Viscometer

C.Saybolt Viscometer d. All of the above.

60. The temperature at which lubricating oil will give off sufficient vapours to form combustible mixture with air is known as

a. Flash point b. Fire point c. pour point d. combustion point.

61. The temperature at which lubricating oil will give off sufficient vapours to form combustible mixture with air is known as

a. Flash point b. fire point c. pour point d. combustion point.

62. Which temperature for lubricating oil will be lowest?

a. Flash point b. Fire point c. Pour point d. Boiling point

63. The function of piston ring in internal combustion engine is

a. to prevent lubrication oil from entering the combustion space.

b. To prevent the leakage of combustion chamber products past piston.

c. To transfer heat from piston to cylinder walls.

d. all of the above.

64. Which engine has the highest air fuel ratio?

a. Petrol engine b. Gas engine c. Diesel Engine d. Gas turbine.

65. Thermoplastic materials are those Materials which

a. are flexible and can withstand considerable wear under suitable conditions.

b. are formed into shapes under heat & pressure & results in a permanently hard product.

c. do not become hard with the application of heat & pressure & no chemical change occurs.

D.are used as a friction lining for clutches & brakes.

66. Example of inorganic thermal insulator is

a.Mineral wood b. wool c. rubber d. none of the above.

67. Example of organic thermal Insulator is

a. Glass wool b. asbestos c. Polyurethane foam d. calcium silicate.

68. Which is the example of natural adhesive?

a. Asphalt b. Polyvinyl Acetate c. Epoxy Resin d. None of the above.

69. Polymer that softens on heating & stiffens on cooling is called

a. Thermoset b. Thermoplastic c. Elastomer d. Rubber.

70. Which of the following may not be used as criteria for classification of polymers?

a. Number of monomers b. Structure /Shape

c. Thermal behavior d. None of the above.

71. Polymer with low degree of polymerization is known as

a. High polymer b. oligomer c. Macromolecule d. Copolymer.

72. The compound that can be used as initiator addition polymerization is

a. Potassium dichromate b. Potassium sulphate c. benzoyl peroxide d. Any of the above.

73. Formation of polymers from unsaturated monomers

a. Exothermic process b. Endothermic Process

c. Depends on the compound used d. cannot be predicted.

74. The species responsible for propagation of polymerization reaction of ethylene using benzoyl peroxide as initiator is.

a.cation b. anion c. free radical d. any of the above.

75. An example of chain – growth polymer is

a. Nylon -66 b. Bakelite c. Terylene d. Teflon.

76. An example of step growth polymer is

A Teflon b.PVC c. Polybutadiene d. Bakelite.

77. Which of the following polymers is formed by condensation polymerization?

a. Polyethylene terephthalate b. Polyethylene c. Polystyrene d. Polypropylene.

78. Increase in viscosity of the medium is a major disadvantage in –

a. Bulk polymerization b. solution polymerization

c. suspension polymerization d. Emulsion polymerization.

79. Which one of the following is a Homopolymer?

a. Buna-S b. Styrene Acrylonitrile

c. Polyvinyl chloride d. Buna-N

80. Which of the following has the largest molecular mass?

a. Monomer b. Dimer c. Oligomer D. Polymer.

81. Chemical resistance of a polymer decreases with

a. Increase in cystallinity b. Increase in cross Linking

c. increase in molecular mass d. none of the above.

82. Additives are added to increase the flexibility of a polymer are called

A. Stabilizers b. Accelerators c. Plasticizers d. Fillers.

83. Additives are added to polymer/resins to

a. Improve mechanical properties b. Impart colour

c. Impart stability to weathering d. all of the above.

84. The polymer likely to be attacked easily by acids & alkali

a. polypropylene b. Polystyrene c. Polyvinyl chloride d. Polyester.

85. Which of the following polymers are hard?

a. linear b. Branched c. Cross-linked d. Thermoplastic.

86 The polymer used for making gasket & filters in chemical industry is

a. Polytetrafluroethylene b. Polymethylmethacrylic acid.

c. Polyethylene d. Polystyrene.

87. Polymer used in making laser disks & rear lights in cars is

a. Polytetrafluroethylene b. Polymethylmethacrylate.

c. Polyethylene d. Polystyrene

88. Phenol formaldehyde is commercially called as

a. PVC b. Bakelite c. Elastomer d. Nylon.

89. Epoxy Resins are obtained from

a. Bisphenol A & Formaldehyde

b. Phenol & formaldehyde

c. Bisphenol-A & Epichlorohydrin

d. Bisphenol A & alkyl di-isocyanate.

90. Low density polythene is obtained by using

a. anionic catalyst b. Free radical indicator

c. Ziegler-Natta catalyst d. Cationic Catalyst.

91. Phenol Formaldehyde is an example of

a. Thermoplastic polymers b. Thermoplastic polymers

c. Thermite polymers d. Thermosetting polymers.

92. Which one of the following is thermosetting polymer?

a. PVC b. Polystyrene c. Polyethylene d. Epoxy Resin.

93. The example of thermosetting polymer is

a. PMMA b. PVA. C. Teflon D. Urea formaldehyde.

94. Which of the following is used as monomers in polymerization?

a. NH3 b. CH3CH2COOH c. HOCH2CH2OH d.All of the above.

Answer Key

1. d	2. c	3. b	4. c	5. d	6. a	7. b	8. d	9. b	10. c
11. d	12. b	13. c	14. b	15. a	16. b	17. b	18. c	19. a	20. b
21. a	22. b	23. b	24. c	25. d	26. c	27. c	28. d	29. b	30. b
31. b	32. c	33. c	34. d	35. d	36. c	37. c	38. d	39. b	40. a
41. c	42. d	43. b	44. c	45. b	46. c	47. d	48. c	49. c	50.c
51. c	52. b	53. b	54. b	55. a	56. d	57. b	58. d	59. d	60. a
61. a	62. b	63. d	64. d	65. c	66. a	67. c	68. c	69. b	70. d
71. b	72. c	73. a	74. c	75. d	76. d	77. a	78. a	79. c	80. d
81. d	82. c	83. d	84. a	85. c	86. a	87. b	88. b	89. c	90. b
91. d	92. d	93. d	94. c						

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