Question Bank-Applied Physics(22202) (I scheme)

Unit test 1 & 2 Academic year:2019-2020

Sem-2 **Course:ME & CE**

Unit 1:PROPERTIES OF MATTER & NDT (CO1)

1)The force which is responsible for changing dimensions of the body is known as____

a) Internal force
b) Deforming force
c) Restoring force
d) Regaining force.

2) The force which helps the body to regain its original shape and size is called as___

a) Internal restoring force
b) Deforming force
c) External force
d) Applied force

3) Change in dimensions in case of plastic body are,

a) Temporary
b) Permanent
c) Negligible
d) None of these

4) Change in dimensions in case of elastic body are,

a) Temporary
b) Permanent
c) Negligible
d) None of these

5)If force applied on elastic body is within elastic limit and if applied force is removed then the body,

a) Regains its original shape & size
b) Changes its shape & size
b) Oposses Changes its shape & size
d) Does not Regains its original shape & size

6)In case of elastic body, body regains its original dimensions on removal of external applied force, then the applied force is ,

a) Within elastic limit
b) More than elastic limit
c) Too large
d) Equal to deforming force

7)In an elastic body if external force is beyond elastic limits then there will be ,

a) Permanent retention
b) More opposition
c) Permanent deformation
d) Less opposition

8) which of the following is perfectly elastic body?

a) Foam
b) Sponge
c) chalk
d) Quartz

9)The property on account of which body regains its original dimensions after removal of deforming force is known as,

a) Elasticity
b) Plasticity
c) Rigidity
d) Ductility

10)The property on account of which body does not regains its original dimensions after removal of deforming force is known as,

b) Elasticity
b) Plasticity
c) Rigidity
d) Ductility

11)The property on account of which body does not changes its original dimensions even if large amount of force is applied on it is known as,

a) Elasticity
b) Plasticity
c) Rigidity
d) Ductility

12)All metals are_____in nature.

a) Elastic
b) Plastic
c) Rigid
d) Ductile

13) Clay,putty and chalk are examples of

a) Elastic body
b) Plastic body
c) Rigid body
d) None of these

14) Stone is _____

a) Elastic body
b) Plastic body
c) Rigid body
d) None of these

15) Stress is defined as,

a) Internal restoring force per unit area
b) Area per unit internal restoring force
c) Product of internal restoring force & area
d) None of these

16)The maximum stress the system is capable of withstanding is known as_____.

b) Breaking stress
b) Ultimate Stress
c) Working Stress
d) Tensile stress

17)The unit of Poission's Ratio is_____.

a) N/m^2
b) m^2/N

c) Nm^2
d)No unit

18) Cable of Lift elevator is the example of _____.

a)Longitudinal Stress
b) Volume Stress

c)Lateral stress
d)Shearing Stress

19) The force applied on body which is responsible for changing shape and size of body is called as_____.

a)Restoring Force
b)Deforming Force

c)Internal Force
d)Regaining Force

20) Longitudinal strain is defined as_____.

a)F/A b)A/F

c)dl/L d)L/dl

21)Shear strain is defined as_____

a)Force per unit area b)Area per unit force

c)Product of Lateral displacement to distance from fixed layer

d)Ratio of Lateral displacement of layer to its distance from fixed layer

22) Bulk Modulus of elasticity is given by,_____

a)K=dv/V *dp b)K=dv/(V*dp)

c)K=dp*dv*V d)K=(dp*V)/dv

23) The portion in stress strain diagram which shows permanent elongation in the wire is called as_____

a)Yeild b)Elastic limit

c)Set d)Breaking point

24) Strain increases without increase in stress just like wire flows,this is called as ____.

a)Yeilding b)Elastic limit

c)Set d)Breaking point

25) Actual practical stress on the system is called as _____

a)Breaking Stress b)Ultimate Stress

c)Working Stress d)Tensile Stress

26) If two different wires of steel &aluminum of same dimensions are taken then_____

a)Elasticity of both wires will be Same b)Elasticity of both wires will be different

c)Elasticity depends on what dimension it has d)None of above

27) The extension produced in a wire due to a load is 3mm.The extension in a wire of same material and length but half the radius will be_____

a)10mm b)12mm

c)14mm d)16mm

28) Four wires of same metal and same diameter are stretched by same load.Length of each wire is given below .Which of them will elongate least?

a)L=1m b)L=1.5m

c)L=2m d)L=2.5m

29) Calculate Poisson's ratio if metal wire of length 3m & diameter 0.3mm is stretched by2mm & lateral contraction is $15X10^{-4}$mm.

a)0.25 b)0.5

c)0.75 d)1

30) A metal bar has a maximum stress is $9X10^{8}$ N/m^2 .If area of bar is $0.02m^2$,find maximum force that bar can withstand___.

a)$0.18X10^{9}$ N/m^2 b) $0.18X10^{6}N/m^2$

c) $0.18X10^{7}$ N/m^2 d) $0.18X10^{8}N/m^2$

31) The unit of stress is,

a) N/m^2 b)m^2/N

c) Nm^2 d) J/m^2

32) The SI unit of stress is,

a) N/m^2 b)m^2/N

c) Nm^2 d) J/m^2

33)Dimensions of stress are____,

a) $[L^1M^{-1}T^2]$ b)$[L^1M^1T^{-2}]$

c) $[L^{-1}M^{-1}T^2]$ d) $[L^{-1}M^1T^2]$

34) Stress is equal to,

a) A/F b)FXA

c) F/A d) F+A

35)Tensile stress is also called as,

a) Lateral stress b)Longitudinal stress

c) volume stress d) Shearing Stress

36)The stress which is related to change in length of the body is called as,

a) Lateral stress b)Longitudinal stress

c) volume stress d) Shearing Stress

37)The stress which is related to change in volume of the body is called as,

a) Lateral stress b)Longitudinal stress

c) volume stress d) Shearing Stress

38)The stress which is related to change in shape of the body is called as,

a) Lateral stress
b)Longitudinal stress
c) volume stress
d) Shearing Stress

39)Volume stress the body is equal to,

a) Change in pressure
b)Product of force & area
c) Area per unit force
d) Addition of force & area

40)The change in dimensions per unit dimension is called as,

a) Stress
b)Strain
c) modulus of electricity
d) Shearing Stress

41) The unit of strain is,

a) N/m^2
b)No unit
c) Nm^2
d) J/m^2

42)Which of the following is dimensionless quantity?

a) Stress
b)Strain
c) Pressure
d) Area

43)Tensile strain is defined as_____.

a)Change In length per unit original length
b)Change in volume per unit original volume
c)Original volume per unit change in volume
d)Original length per unit change in length

44)Volume strain is defined as_____.

a)Change In length per unit original length
b)Change in volume per unit original volume
c)Original volume per unit change in volume
d)Original length per unit change in length

45) The stress corresponding to limiting value of load which doesn't produce permanent deformation is called as,

a) Elatic limit
b)Plastic limit
c) Breaking stress
d)Ultimate stress

46)Unit of Thurst in MKS system is_____.

a) N/m^2
b)N
c) J
d) J/m^2

47) Pressure at any point inside liquid depends on_____

a)Only Depth

b)Only Liquid density

c)Only gravitational acceleration

d)All of the above

48) When three holes of equal diameter are drilled in a water tank at the top of tank,at the middle of tank and at bottom of tank then the pressure will be _____

a)More at top

b)More at MIddle

c)More at bottom

d)Same at every Level

49)By Archimede's Principle_____

a) Upthurst force=Loss of weight of body in liquid

b) Upthurst force<Loss of weight of body in liquid

c) Upthurst force>Loss of weight of body in liquid

d) None of these

50)Stoke's law states that Viscous Force experienced by a small metal sphere falling through viscous fluid is directly proportional to_____

a)Radius of metal sphere(r)

b)Terminal Velocity(v)

c) Coefficient of viscosity(η)

d)All of above

51) If sugar is dissolved in pure water them viscosity of net solution is_____

a)Less than Pure water

b)Same as Pure Water

c)More than pure water

d)None of these

52) An ice block of density 0.8gm/cm3 is floating on water of density 1gm/cm3.Fraction of volume of ice above water surface will be

a)0.2

b)0.4

c)0.6

d)0.8

53) A solid floats on water.Its 60% volume is inside water.Calculate density of solid(density of water=1000kg/m^3)

a) 600kg/m^3

b) 300kg/m^3

c) 900kg/m^3

d)1000kg/m^3

54) The unit of coefficient of viscosity is____

a)Ns m^2

b) m^2/sN

c) Ns/m^2

d) m^2s/N

55) A air bubble of radius 1cmrises steadily through the solution of density 1.75X10^3kg/ m^3 at steady velocity of 0.35m/s. Calculate coefficient of viscosity.

a)1.08 Ns/m^2

b) 1.18 Ns/m^2

c) 1.02Ns/m^2

d) 1.25 Ns/m^2

56) Universal testing Machine is an example of_____

a)Destructive Testing Technique b) Non-Destructive testing Technique

c)Semi Destructive Testing d)None of these

57) After using the material using NDT technique, the material

a)can be used for intended purpose b) can be used for intended purpose with somecorrection

c)cannot be used for intended purpose d)none of these

58) Using NDT_____

a)Only Sample Testing is possible b)100% testing is possible

c)Depends on technique used d)none of these

59) Which one of the following is not a NDT technique?

a)Ultrasonic Testing b)Magnetic particle testing

c)Compression testing d)Radiographic Testing

60) Which one of the following is not a selection criterion for NDT technique?

a)Codes or standard requirement b)Specification of material to be tested

c)Manufacturing process of material d)Weight of material

61) Which one of the following is limitation of NDT technique?

a)material can be used for intended purpose b)Raw material can be tested to save money & time

c)100% examination is possible d)Minimum two methods are required for complete analysis

62) Which one of the following is advantage of NDT technique?

a)Testing is possible during servicing of machine b)Testing charges are more

c)Only trained & certified persons are required d) Minimum two methods are required for complete analysis

63) After using the material using Destructive technique, the material

a)can be used for intended purpose b) can be used for intended purpose with some correction

c)cannot be used for intended purpose d)none of these

64) Which is non-destructive testing machine?

a)Universal Testing Machine b)Izod & Impact tester

c)Torsion testing Machine d)Radiographic Testing machine

65)Using any one NDT method we can either find surface flaws or inside flaw, This statement is,

a)True b)False

c)Conditionally true d)None of these

66)Within elastic limit ,stress is directly proportional to strain is known as,

a)Boyle's law b)Newton's law

c)Pascal's d)Hooke's law

67)Modulus of elasticity is equal to ,

a)Stress/Strain b)strain/stress

c)StressXStrain d)None of these

68)Within elastic limit, the ratio of tensile stress to tensile strain is called as,

a)Young's Modulus b)Bulk Modulus

c)Modulus of Rigidity d)Poission's ratio

69)Which of the following quantity is dimensionless?

a)Young's Modulus b)Bulk Modulus

c)Modulus of Rigidity d)Poission's ratio

70)Young's Modulus of Elasticity is,

a)$Y = \frac{Fdl}{AL}$ b) $Y = \frac{Adl}{FL}$

c) $Y = \frac{FL}{Adl}$ d) $Y = \frac{AL}{Fdl}$

71)Within elastic limit, the ratio of Volume stress to Volume strain is called as,

a)Young's Modulus b)Bulk Modulus

c)Modulus of Rigidity d)None of these

72)Compressibility is defined as,

a)Reciprocal of bulk modulus b)Reciprocal of Young's modulus

c) Reciprocal of Modulus of Rigidity d)None of these

73)Modulus of Rigidity is defined as,

a)Product of Shearing stress to shearing strain b)Ratio of Shearing stress to shearing strain

c) Ratio of Shear strain to shear stress d)None of these

74)The relation between Y,K &η is given by,

a)$K = \frac{9nK}{3K+n}$ b) $Y = \frac{9nK}{3K+n}$

c) $n = \frac{9nK}{3K+n}$ d) $Y = \frac{nK}{3K+9n}$

75)In stress strain diagram,the portion which obeys Hooke's law is a,

a)Curved line b)Straight line

c)Zigzag line d)None of these

76)Factor of safety is defined as,

a)$Ultimate\ stress/Working\ stress$ b) $Working\ stress/Ultimatestress$

c) $Breaking\ stress/Ultimate\ \ stress$ d) $Ultimate\ stress/Breaking\ stress$

77)Poission's ratio is defined as ,

a)$lateral\ strain/Longitudinal\ strain$ b) $longitidunal\ strain/Lateral\ strain$

c)$Tensile\ strain/Lateral\ strain$ d) $lateral\ strain\ X\ Longitudinal\ strain$

78) Lateral Strain is the,

a)ratio of change in length to original length b)Product of decrease in diameter to original diameter

c)Ratio of original diameter to decrease in diameterd)Ratio of decrease in diameter to original diameter

79)Elasticity of material _____with increase in temperature

a)Increases b)Decreases

c)Remains same d)None of these

80)Adding carbon to molten steel _____the elasticity of steel

a)Increases b)Decreases

c)Remains same d)May increase or decrease

81)Because of annealing, the elasticity of the material ,

a)Increases b)Decreases

c)Remains same d)None of these

82)Because of hammering & rolling, the elasticity of the material ,

a)Increases b)Decreases

c)Remains same d)None of these

83)Because of recurring stress on a wire,

a)Elasticity Increases & Plasticity decreases b)Elasticity & Plasticity decreases

c)Elasticity & Plasticity Increases d)Elasticity decreases & Plasticity increases

84)The elasticity of material ____when it is subjected to repeated stress.

a)Increases b)Decreases

c)Remains same d)May increase or decrease

85)Elasticity of steel is_____

a)More than rubber b)Less then rubber

c)Same as that of rubber d)More or less than rubber-depend on dimensions

86)If we take 1m long steel wire & 2m long steel wire then_____

a)Elasticity of 1m will be more than 2m b)Elasticity of 2m will be more than 1m

c)Elasticity of 1m & 2m will be same d)depends on diameter of wire

87)Four wires of same metal and same diameter are stretched by same load.Dimensions of each wire is given below .Which of them will elongate least?

a)r=0.5mm,L=50cm b)r=1mm,L=100cm

c)r=1.5mm,L=150cm d)r=2mm,L=200cm

88)Four wires of different metal are stretched by different load.Dimensions of each wire is given below .Which of them will have lowest elasticity?

a)M=0.5kg,r=0.5mm,dl=0.5mm L=50cm b)M=1kg,r=1mm,dl=1mm ,L=100cm

c)M=1.5kg,r=1.5mm,dl=1.5mm L=150cm d)M=2kg,r=2mm,dl=2mm,L=200cm

89)If dl is the extension produced in the wire of length L,radius r,with a force F. Find the extension produced in a wireof same metal of length2 L,radius2 r,with a force 2F will be,

a)dl/2 b)dl

c)2dl d)3dl

90)A wire of length 2m extends by 2mm when a forceis applied to it.Calculate the stress produced in it if $Y=2 X10^{11}N/m^2$

a)$1 X10^8N/m^2$ b)$2 X10^8N/m^2$

c)$3 X10^8N/m^2$ d)$4X10^8N/m^2$

91) Calculate shearing strain if 5cm thick metal plate is sheared & to[surface displaces by 0.06mm

a)2 $X10^{3}N/m^{2}$ b)2.4 $X10^{-3}N/m^{2}$

c)1.2$X10^{3}N/m^{2}$ d)1.2$X10^{-3}N/m^{2}$

92)Calculate the compressibilty of metal if bulk modulus of elasticity K=2 $X10^{10}N/m^{2}$

a)0.2 $X10^{-10}m^{2}/N$ b)0.5 $X10^{-10}m^{2}/N$

c)0.2$X10^{10}m^{2}/N$ d)0.5$X10^{10}m^{2}/N$

93)The total amount of force exerted by a liquid on surface in contact is called as,

a)Pressure of liquid b)Potential energy

c)Thurst of liquid d)None of these

94)Unit of Thrust in MKS system is,

a)N b)N/m^{2}

c)J d)J/m^{2}

95)Dimensions of thrust are,

a) $[L^{1}M^{1}T^{-2}]$ b)$[L^{1}M^{-1}T^{2}]$

c) $[L^{-1}M^{-1}T^{2}]$ d) $[L^{-1}M^{-1}T^{-2}]$

96)Dimensions of liquid pressure are,

a) $[L^{1}M^{1}T^{-2}]$ b)$[L^{1}M^{-1}T^{2}]$

c) $[L^{-1}M^{-1}T^{2}]$ d) $[L^{-1}M^{-1}T^{-2}]$

97)Dimensions of Thrust& liquid pressure are,

a)Same b)Different

c)Depends on temperature d)None of these

98)Pascal's law states, when pressure at any point in enclosed liquid is changed by some amount,then

a)Equal amount of change in pressure is transmitted throughout liquid

b)More amount of change in pressure is transmitted throughout liquid

c)Less amount of change in pressure is transmitted throughout liquid

d)None of these

99)Hydraulic brakes is an application of,

a)Joule's law b)Newton's law

c)Pascal's law d)Stoke's law

100)Hydraulic lift is an application of,

a)Joule's law b)Newton's law

c)Pascal's law d)Stoke's law

101)According to Archimede's principle,object displaces a volume of fluid that,

a)is volume of object b)is volume of object which is inside liquid

c)is volume of object which is outside liquid d)Volume more than liquid

102)What was the principle Archimedes discovered?

a)Principle of Volume b)Principle of Density
c)Principle of Buoyancy d)Principle of Gravity

103) by Archimede's principle,

a)Upthrust force=loss of weigtht of body in liquidb)Upthrust force>loss of weigtht of body in liquid

c)Upthrust force<loss of weigtht of body in liquid d)None of these

104)Archimede's principle states that,when solid insoluble body is completely or [artly dipped in liquid,

it losses its weigth and loss of weight of body is,

a)Equal to weight of liquid displaced b)More than weight of liquid displaced

c)Less than weight of liquid displaced d)None of these

105)Which one is application od pascal's law?

a)Burgular alarm b)Automatic street lights

c)Detection of real diamond d)Hydraulic press

106)Which of the following correctly states how the viscosities of a liquid and a gas will change with temperature?
a) Viscosity increases with the increase in temperature of a liquid and decreases with the increase in temperature of a gas
b) Viscosity increases with the increase in temperature of a liquid and increases with the increase in temperature of a gas
c) Viscosity decreases with the increase in temperature of a liquid and decreases with the increase in temperature of a gas
d) Viscosity decreases with the increase in temperature of a liquid and increases with the increase in temperature of a gas

107) Which one of the following is not a unit of dynamic viscosity?
a) Pa-s b) N-s/m^2
c) Poise d) Stokes

108) The viscous force the relative motion between the adjacent layers of a fluid in motion.
Which one of the flowing fits best in the sentence?

a) opposes
b) never affects
c) facilitates
d) may effect under certain conditions

109)Viscosity is the property of liquid on account of which liquid tries to,

a)Help the relative motion between different layers

b)Accelerates relative motion between two layers

c)Stops relative motion between two layers

d)Opposes relative motion between two layers

110)Velocity Gradient is defined as,

a)Change in velocity/distance
b)Distance/ Change in velocity
c)Change in velocityXdistance
d)Change in velocity+distance

111)What happens to the coefficient of viscosity if the temperature increases?

a) Increases
b) Decreases
c) Remains the same
d) Independent of temperature

112) What is the unit of coefficient of viscosity?

a) $kgsm^{-2}$
b) $kgms^{-2}$
c) Nm/s^2
d) Ns/m^2

113)The constant velocity with which ball falls through the fluid is called as,

a)Constant velocity
b)Terminal velocity
c)Radial velocity
d)angular velocity

114)Stoke's law states that the force experienced by a small metal sphere falling freely through the viscous liquid with terminal velocity is directly proportional to,

a)Radius of metal sphere
b)Terminal velocity
c)Coefficient of viscosity
d)All of the above

115)Stoke's formula is given by ,

a)$F=6\pi/\eta_b rv$
b)$F=3\pi/\eta_b rv$
c)$F=6\pi\eta_b rv$
d)$F=3\pi\eta_b rv$

116) The formula for coefficient of viscosityof liquid is given by,

a)$\eta_b=\frac{2r2g(d-\varsigma)}{9v}$
b)$\eta_b=\frac{9r2g(d-\varsigma)}{2v}$
c)$\eta_b=\frac{2rg(d-\varsigma)}{9v}$
d)$\eta_b=\frac{9rg(d-\varsigma)}{2v}$

117)As adulteration of soluble substance in liquid increases then viscosity of net solution,

a)Increases b)Decreases

c)Remains same d)None of these

118)If sugar is dissolved in pure water then viscosity of net solution is,

a)less than pure water b)More than pure water

c)Remains same as pure water d)None of these

119)Thrust of a hydraulic Ram of diameter 20cm is 2N. Thrust exerted by ram of diameter 30cm will be,

a)1.5N b)3N

c)4.5N d)6N

120)liquid pressure at a depth of 5m is $1X10^5N/m^2$.Pressure at a depth of 15m will be,

a)$0.5X10^5N/m^2$ b)$3X10^5N/m^2$

c)$0.3X10^5N/m^2$ d)$2X10^5N/m^2$

121) A water tank of height 10m is half filled. The pressure at bottom is,

a)$10^2N/m^2$ b)$10^3N/m^2$

c)$10^4N/m^2$ d)$10^5N/m^2$

122) A water tank of height 12m is filled one third. The pressure at bottom is,

a)$4X10^2N/m^2$ b)$4X10^3N/m^2$

c)$4X10^4N/m^2$ d)$12X10^4N/m^2$

123)The weight of a person in air is 70 kg,but in water it may be 50kg .loss of weight is due to,

a)Viscous force b)Up thrust force

c)Surface tension d)Atmospheric force

124)Force F N is required to move a plate of area Am^2over a liquid.The force required to move plate half the earlier area will be,

a)F/2 b)F

c)2F d)3F

125)Force F N is required by a raindrop of radius r.The force experienced by a double radius rain drop Moving with same speed will be

a)F/2 b)F

c)2F d)3F

126)Wooden sleepers of large area are placed below railway tracks,

a)To increase speed of rail b)To control speed of rail

c)To reduce friction d)To avoid depressing of tracks in ground

Unit 2:(CO2) TYPES OF MOTION

1) Speed is a ____Quantity & velocity is a ____Quantity

a)Vector,Scalar b)Scalar,Vector

c)Scalar,Scalar d)Vector,Vector

2) Negative Acceleration is called as_____

a)Slow acceleration b)Retardation

c)Uniform acceleration d)Gravitational Acceleration

3) Acceleration is given by_____

a)Time/Change in velocity b)Change in velocityXtime

c) Change in velocity/timed) Change in velocity + time

4) Using usual symbols ,third equation of motion is_____

a)$v^2=u^2+2as$ b) $u^2=v^2+as$

c) $v^2=u^2+1/2as^2$ d) $v^2=u^2+2as^2$

5) Which of the following is not a equation of motion of body moving vertically upward against gravity_____

a)v=u-gt b)$s=ut-1/2gt^2$

c)$s=ut+1/2gt^2$ d) $v^2=u^2-2gs$

6) A ball is released from a height & falling freely down is an example of _____

a)Uniform displacement b) Uniform Velocity

c)Uniform Acceleration d) reatardation

7)If a car stands from rest & accelerated for 10 seconds at the time of $0.5m/s^2$,its final velocity will be__

a)0.05m/s b) 5m/s

c)50m/s d) 1.5m/s

8) 54 km/hr is equal to _____

a)15 m/s b)30m/s

c)45m/s d) 60m/s

9) A car moving with constant speed of 72km/hr , total distance covered in 10 sec will be_____

a)720m b)7.2m

c)100m d) 200m

10) If a ball is released freely from a certain height, the approximate distance covered by it in 1 sec will be,

a)15 m b)10m

c)5m d) 1m

11) A ball is released from terrace of building 80m.The time it will take to reach ground will be_____

a)1 sec b)2 sec

c)3 sec d) 4 sec

12) An object comes to rest from a velocity of 20m/s in a distance of 10 m.Acceleration will be_____

a)10m/s^2 b) 30m/s^2

c) -20m/s^2 d) -30m/s^2

13) A body is said to be in motion,if it _____its position w.r.t_____with passage of_____

a)keeps,surrounding,time b) does not change,place.time

c) changes,surroundings,time d) None of these

14) The rate of change of velocity w.r.t time in a given direction is called as_____

a)Acceleration b) Displacement

c) Speed d) Velocity

15) The second equation of motion(kinematics) is given by _____

a)$s=ut+at^2$ b) s=ut+1/2at

c) $s=ut+1/2at^2$ d) $s=ut+2at^2$

16) The car starting from rest gains a velocity of 54km/hr in 15 sec, total distance covered in 10 sec will be_____

a) 5.4m b) 50m

c) 540m d) 100m

17) A ball is thrown vertically up.It falls back to ground(same spot)after 2 sec.The maximum height reaced by it will be _____

a)1m b) 5m

c) 10m d) 15m

18) A ball is thrown vertically upward with initial velocity 20m/s.The maximum height attained by ball will be

a)10m b) 20m

c) 30m d) 40m

19) Every body at rest has a tendency to remain in rest & a body in motion has a tendency to remain in motion is known as,

a)Law of inertia b) Newton's second law of motion

c)Newton's third law of motion d) reatardation

20)) Every body at rest has a tendency to remain in rest & a body in motion has a tendency to remain in motion unless & until it is acted upon by external force is known as,

a)Inertia b) Momentum

c)Impulse d)Reaction

21)Velocity is given by,

a)Displacement X time b) Displacement +time

c)Displacement/time d)Time/Displacement

22)Using usual symbols ,first equation of motion is_____

a)a=v+ut b) a=u+vt

c) u=v+at d)v=u+at

23)Which of the following is not a equation of motion of body falling due to gravity_____

a)v=u+gt b)$s=ut+1/2gt^2$

c)v=u-gt d) $v^2=u^2+2gs$

24)If a body covers equal displacement in equal interval of time,then it is said to be in,

a)Uniform displacement b) Uniform velocity

c)Uniform acceleration d)Retardation

25)If change in velocity is constant in equal interval of time,then it is said to be in,

a)Uniform displacement b) Uniform velocity

c)Uniform acceleration d)Retardation

26) A ball is thrown up is best example of

a)Uniform displacement b) Uniform velocity

c)Uniform acceleration d)Retardation

27)If a ball is released freely from a certain height, the approximate distance covered by it in 2 sec will be,

a)15 m b)10m

c)5m d) 1m

28)A ball is thrown vertically up.It falls back to ground(same spot)after 4 sec.The maximum height reached by it will be _____

a)20m b) 30m

c) 10m d) 15m

29)The car has initial velocity if 5m/ sec, it is accelerated for 10 sec at a rate of 4 m/s^2.its final velocity will be_____

a) 200m/s b) 205m/s

c) 20m/s d) 25m/s

30)The car starting from rest gains a velocity of 54km/hr in 15 sec, total distance covered in 10 sec will be_____

a) 5.4m b) 50m

c) 540m d) 100m

31)A ball is thrown vertically up.It falls back to ground(same spot)after 1 sec.The maximum height reaced by it will be _____

a)1m b) 5m

c) 10m d) 15m

32)A train crosses atunnel in 10 sec.At the enter of the tunnel ,celocity is 20m/s and exit its velocity 10m/s.The length of tunnel will be,

a)50m b) 100m

c) 150m d) 200m

33)Two vechiles A & B are moving in same direction at a speed of 15m/s.Car B is ahead of car A by 300 m .If car A is accelerated by 2m/s^2& B has same speed earlier then the distance at which A & B will meet will be,

a)260m b) 310m

c) 150m d) 200m

34)) A ball is thrown vertically upward reaches ground in 4 sec.Determine the total distance covered .

a)10m b) 20m

c) 30m d) 40m

35) A car is moving with initial velocity 20m/s then suddenly brakes are applied& it is brought to rest with retardationof 10 m/s^2 .The distance covered by car will be,

a)10m b) 20m

c) 30m d) 40m

36)If motion of body takes place along the circumference of circle,then it is called as,

a)Linear motion b) Angular motion

c) Gravitational motion d) Projectile motion

37)Angle subtended by radius vector when a particle is in circular motion moving from one positioner to other is called as,

a)Displacement b) Angular displacement

c) Angular velocity d) Angular acceleration

38)SI unit of angular displacement is,

a)Radian b) Steradian

c) Degree d) None of these

39)Unit of angular velocity is,

a)s/radian b) radian/s

c) Radian-s d) Degree/radian

40) The rate of change of angular displacement w.r.t time is called as,

a)Velocity b) Angular displacement

c) Angular velocity d) Angular acceleration

41)The rate of change of angularvelocity w.r.t time is called as,

a)Acceleration b) Angular displacement

c) Angular velocity d) Angular acceleration

42)The relation between angular velocity & linear velocity is given by,

a)r=vw b) v=rw

c) w=vr d) v=r+w

43)Which of the following is not an equation of circular motion?

a)$w=w_0+\alpha t$ b) $\theta=w_0+1/2\alpha t^2$

c)$w=(w_0)^2+2\alpha\theta$ d)$w^2=(w_0)^2+2\alpha\theta$

44)The relation between angular accelration & linear accelration is given by,

a)$a=r\alpha$ b) $r=a\alpha$

c) $\alpha=ar$ d) $a=r+\alpha$

45)In equation$w=w_0+\alpha t$,**α stands for**

a)Linear velocity b) Angular displacement

c) Angular velocity d) Angular acceleration

46)One revolution=____rad

a)π/3 b) π/2

c)π d) 2π

47)If a particle execute circular motion then the angular displacement is equal to,

a)π/2 radian b) 3π/2radian

c)π radian d) 2π radian

48)1 r.p.s is equivalent to ….

a)1/60 rpm b) 60rpm

c)1/3600rpm d)3600rpm

49) π radian is equal to..

a)60^0 b) 120^0

c)180^0 d) 360^0

50)A flywheel is rotating at 120rpm. Its angular velocity will be___

a)2π radian /sec b) 4πradian/sec

c)π/2radian /sec d) π/4 radian/sec

51)The second hand of theclock is 5cm long.The linear speed of ant sitting on tip will be,

a)π/2 m/s b) π/4m/s

c)π/6 m/s d) 2π m/s

52)The frequency of rotation of Fan changes from2 rev/s to 4 rev/s in 2 sec.Its angular acceleration will be,

a)2π radian /sec2 b) 4πradian/sec2

c)π/2radian /sec2 d) πradian/sec2

53)A flywheel is rotating at 1800 rpm .It is brought to rest in 60 revolutrions .its uniform reatrdation will be

a)5π radian /sec2 b) 10πradian/sec2

c)15πradian /sec2 d) 20πradian/sec2

54)A flywheel starting from rest attains a speed of 1200rpm in 1min .Its angular acceleration will be,

a)π/3 radian/sec2 b) 2π/3radian/sec2

c)2πradian /sec2 d) πradian/sec2

55) An electric fan rotating at 600rpm accelerates to 1500rpm in 5 minutes.Calculate its angular acceleration.

a)0.1π radian/sec2 b) 0.3πradian/sec2

c)0.6πradian/sec2 d) 0.9πradian/sec2

56)A motor cycle with 90cm wheel diameter has angular velocity of 50rad/s.Its linear velocity will be,

a) 30m/s b) 45m/s

c) 60m/s d) 90m/s

57) Angular acceleration of a cycle is 4radian/sec2,where its wheel diameter is 60 cm.

Its linear acceleration will be,

a)2.4m/s^2 b) 1.2m/s^2

c) 3.6m/s^2 d) 4.8m/s^2

58)Periodic time of angular motion is 3 sec.Its frequency will be

a)2/3Hz b) 6Hz

c) 3Hz d)1/3Hz

59)Frequency of rotation of fan is 4Hz.Its periodic time will be,

a)4sec b) 2/4sec

c) 1/2sec d)2 sec

60)A scotter with 30cm wheel diameter has angular velocity of 40rad/s.Its linear velocity will be,

a) 30m/s b) 6m/s

c) 60m/s d) 12m/s

61)Quantity of motion possessed by moving body is called as,

a) Impulse b) Impulsive force

c) Momentum d) Quantum

62)Impulse is defined as change in_____

a) Mass b) Velocity

c) Momentum d) Acceleration

63)As per the law of conservatin of momentum,total momentum before collision is_____the total momentum after collision.

a) Is more than b) Is less than

c) Is equal to d) Greater then or equal to

64)SI unit of momentum is,

a) ms/kg b) kgm/s

c)kgs/m d) kg m/s2

65)The force which acts for a short time & produce considerable change in momentum of body is ,

a) Impulse b) Impulsive force

c) Momentum d) Quantum

66)Unit of Impulsive force is,

a) N b) Ns

c) N/s d) kgm/s

67) Every body continues its state of rest or of uniform motion, unless its acted upon by external force is known as,

a) Newton's 1st law of motion b) Newton's 2nd law of motion

c) Newton's 3rd law of motion d) None of these

68)For every action there is equal & opposite reaction is known as,

a) Newton's 1st law of motion b) Newton's 2nd law of motion

c) Newton's 3rd law of motion d) None of these

69)Newton's second law of motion states that rate of change of momentum of a body is proportional to_____& takes place in direction of_____

a) Velocity, Force b) Force,velocity

c) Displacement,velocity d) applied force,force

70)As per law of conservation of momentum when there is no force then total momentum of system___

a) Before impact=After impact b) Before impact<After impact

c) Before impact>After impact d) None of these

71)Which of the following is application of Newton's 1st law of motion.

a)Swimming b) Use of seat belt in car

c) Jumping d) Rocket fire

72)Which of the following is not an application of Newton's 1st law of motion.

a)Pushing a car b) Use of seat belt in aeroplane

c) Motion of simple pendulum d) Technique used in drop coin game

73)Which of the following is application of Newton's 1st law of motion.

a)Removal of flowe from tree by shaking tree b) Use of seat belt in car

c) Wanging of bottom of handle on hard surface to tighten hammer d) Rocket fire

74)Which of the following is an application of Newton's 2nd law of motion.

a)To & Fro motion of pendulum b) jumping on earth

c) while catching ball cricketer swing hands back d) Birds fly

75)Which of the following is not an application of Newton's 3rd law of motion.

a)Recoil of gun b) Firing Rocket

c) Rotation of lawn spray sprinkler d) Removing ketchup from bottle by shaking

76)As per law of conservation of momentum,

a)$m_1m_2=v_1v_2$ b) $m_1v_2=v_1m_2$

c) $m_1v_1=m_2v_2$ d) $m_1v_1+m_2v_{2=}0$

77)A two wheeler vechile of mass 150 kg has a velocity of 6m/s.The momentum of vechile will be,

a)125kgm/s b) 900kgm/s

c) 90kgm/s d) 250kgm/s

78)The momentum of a train weighing 3000KN moving with a speed 90km/hr will be,

a)$10.5X10^6$Ns b)$25X10^6$Ns

c)$2.5X10^6$Ns d)$7.65X10^6$Ns

79) If a body of mass 50 kg chaanges its velocity of 5m/s to 35m/s,impulse acting on body will be,

a)1500Ns b)2000Ns

c)200Ns d)150Ns

80)A ball of mass 200gm rolls with a velocity of 10m/s .it is hit with a bat in direction of motion. The velocity changes to 20m/s.If the bat is in contact with the ball for 0.02 sec,the impulsive force on it will be,

a)10N b)100N

c)200N d)20N

81) A bullet of mass 0.1 kg is fired with a velocity of 500m/s horizontally in wooden block of mass 5 kg esting on horizontal surface.Ifbullet remains in block,the velocity of block after impact will be,

a)4.9m/s b)9.8m/s

c)19.6m/s d)25m/s

82)A bullet of mass 50gm is fired with a velocity of 800m/s from a gun of mass 5kg.The velocity with which gun will recoil is,

a)4m/s b)6m/s

c)8m/s d)10m/s

83)A bullet of mass 100gm is fired with a velocity of 400m/s from a gun which prodces recoil velocity 4m/s,the mass of gun is,

a)2.5kg b)5kg

c)7.5kg d)10kg

84)Work is given by relation,

a)W=force/displacement b)Force=work/Displacement

c)W=Force+Displacement d)Work=ForceXDisplacement

85)From law of conservation of energy ,the total energy of system in various forms___

a)Increases b)Decreases

c)Remains same d)None of these

86) The capacity of doing work is called as,

a)Power b)Energy

c)Force d)Displacement

87)In case of motion of hand roller ,the work done is given by,

a)W=force/displacement b)Work=component of force in direction of motionXDisplacement

c)W=Displacement/force d)Work=ForceXDisplacement

88)Power is defined as __

a)Time per work done b)rate of work done w.r.t time

c)Amount of work done d)Work done per unit mass

89)The water stored in a dam is an example of __

a)Kinetic energy b) Potential Energy

c)Surface energy d)Liquid energy

90)Work is a ____quantity,power is a _____quantity.

a)Scalar,scalar b)Escalar,vector

c)Vector,vector d)Vector,scalar

91)SI unit of work Done is,

a)Newton b)Dyne

c)Watt d)Joule

92)SI unit of work Power is,

a)Newton b)Dyne

c)Watt d)Joule

93)1watt is given by,

a)1J/1s b)1JX1s

c)1s/1J d)None of these

94) The unit of work & energy are,

a)Joule,joule b)Joule,watt

c)Watt,joule d)Joule,newton

95)Potential energy is stored form of energy & given by,

a)P.E=mg/h b)P.E=mgh

c)P.E=h/mg d)P.E=m/gh

96)Kinetic energy is stored form of energy & given by,

a)K.E=$2mv^2$ b)K.E=$1/2mv^2$

c)K.E=mv^2 d)K.E=1/2mv

97)Work energy principle states that work done by a system of forces acting on body between any two points is equal to,

a)Change in P.E b)Additions of K.E

c)Change in K.E d)Additions of P.E

98)Work done=Change in K.E is__

a)Gravitional law b)Watts equation

c)Newton's 1^{st} law of motion d)Work-energy principle

99)Power is given by relation,

a)Power=ForceX velocity b)Power=Force/velocity

c)Power=velocity/force d)None of these

100)Efficiency of pump is given by,

a)Efficiency=input power/Output power b)Efficiency=Output power/Input power

c)Efficiency=input powerXOutput power d)Efficiency=input power+Output power

101)Tank of volume $1m^3$ occupies

a)760kg of water b)1250kg of water

c)1000 kg of water d)1gm of water

102)For water 1 Liter is equal to,

a)1kg b)0.85kg

c)1.25kg d)None of these

103)Force of 10N applied on body produces displacement of 10 m,The work done will be__

a)1J b)100J

c)20J d)200J

104)1000 liters of water is pumped to a height of 50m.The work done by pump will be,

a)$9.8X10^5$J b)$2X10^5$J

c)$4.9X10^5$J d)$20X10^5$J

105)A man pulls a hand roller on a cricket pitch with a force of 200N inclined at an angle of 60^0 to horizontal. The work done in pulling roller over a pitch of 20 m long will be,

a)500J b)100J

c)200J d)2000J

106)A rocket motor exerts a thrust of 2MN at a speed of 250m/s.Power developed in it will be,

a)100MW b)500MW

c)1000MW d)1500MW

107)A lift of weight 500N is being raised with uniform velocity 2m/s.Power involved in it will be

a)1KN b)10KN

c)100KN d)200KN

108)Work of 150000 J is done in half our .If efficency of pump is 70% ,the power of pump required will be,

a)1190 watt b)510Watt

c)1510Watt d)2090Watt

109) A vechile of mass 100kg is moving with a speed of 36km/hr.Its kinetic energy will be,

a)5000J b)7000J

c)8000J d)2000J

110)A train of mass 200000 kg is running at a speed of 54km/hr.Train is brought to rest in100m.Resistive force of train will be,

a)$1X10^5N$ b)$2.25X10^5N$

c)$5X10^5N$ d)$10X10^5N$

111)A force of 24 N is used in lift an object over a height of 3m.Potential energy gained by object is,

a)8J b)12J

c)72J d)92J

112)Projectile is defined as an object thrown in air making angle _____with horizontal.

a)more than 90^0 b)more than 0^0&more than 90^0

c)less than 0^0 d)180^0

113)Which of the following is not a example of projectile motion?

a)Football kicked in air b)Cricket ball as batsman hit six

c)javelin throw d)Motion of carrom coin

114) A stone is thrown by making an angle of $90^0$with horizontal,the path of stone is__

a)Circular b)Elliptical

c)Linear d)Parabolic

115)A ball is dropped from moving train .The path of the ball observed by the man on ground is

a)Circular b)Zigzag

c)Straight but Slanted d)Parabolic

116)A ball is dropped by a person from moving train .The path of the ball observed by the man from train is

a)Circular b)Zigzag

c)Straight but Slanted d)Parabolic

117)Motion of a projectile is___

a)One dimensional b)Two dimensional

c)Three dimensional d)Four dimensional

118)A stone is projected by making an angle of $90^0$with horizontal,the path of stone is__

a)Circular b)Elliptical

c)Linear d)Parabolic

118)A stone is projected by making acute angle with horizontal,the path of stone is__

a)Circular b)Elliptical

c)Linear d)Parabolic

119)A stone is released from window by a person from moving train .The path of the stone observed by the man on ground is___

a)Circular b)Elliptical

c)Straight d)Parabolic

120)At the top of trajectory of a projectile ,the direction of its velocity & acceleration are,

a)parallel to each other b)Perpendicular to each other

c)Inclined to each other at 45^0 d)Inclined to each other at 60^0

121)Trajectory is defined as _____traced by an object in projectile motion.

a)Angle b)Height

c)Path d)Horizontal line

122) Angle of projection in projectile motion is given by,

a)ɵ=tan(4H/R) b)ɵ=$\tan^{-1}$(4H/R)

c)ɵ=tan(R/4H) d)ɵ=$\tan^{-1}$(R/4H)

123)Total horizontal distance covered by projectile is called _____

a)Tracjectory b)Height of projectile

c)Range of projectile d)Time of flight

124)Maximum vertical distance covered by a projectile from ground level is called height of projectile & is given by_____

a)H=v^2sinɵ/2g b)H=v^2sin2ɵ/2g

c)H=vsinɵ/2g d)H=vsinɵ/g

125)Range of projectile ® is given by,

a)R=v^2sinɵ/2g b)R=v^2sin2ɵ/2g

c)R=2vsinɵ/2g d)R=v^2sin2ɵ/g

126)Horizontal range covered by projectile is proportional to,

a)V b)V^2

c)g d)sinɵ

127) A player kicks a ball at an angle ɵ with the horizontal.The maximum horiontal rangr corresponds to angle of___

a)30^0 b)45^0

c) 60^0 d)75^0

128)The horizontal range covered by a projectile is proportional to

a)its velocity b)square of velocity

c)sine angle of projection d)square of sine angle of projection

129)Four balls A,B,C & D are projected with same speed making angles 15^0,$30^0$$45^0and60^0$ with horizontal.Which ball will strike the ground at fastest point?

a)A b)B

c)C d)D

130)Four balls A,B,C & D are projected with same speed making angles 15^0,$30^0$$45^0and60^0$ with horizontal.Which ball will strike the ground at same point?

a)A & C b)B & D

c)No two balls will strike at same speed on ground d))all balls will strike at same point on ground

131)A cricketer player hits a six at an angle ɵ with horizontal. The maximum horizontal range corresponds to an angle of___

a)30^0 b)45^0

c) 60^0 d)75^0

132)A cricketer hits a pitched ball at some height from ground.The angle of projection for maximim horizontal range must be___

a)30^0 b)45^0

c) slightly less than 45^0 d)slightly more than45^0

133)Four balls A,B,C & D are projected with same speed making angles 35^0,$45^0$$55^0and65^0$ with horizontal.Which ball will cover maximum range?

a)A b)B

c)C d)D

134)A ball is thrown with initial K.E at angle ɵ with horizontal. The K.E of the ball at highest point of trajectory will be,

a)Zero b)E/2

c)E cos2ɵ d)E sin2ɵ

135)A ball is thrown with initial K.E at angle 60^0 with horizontal. The K.E of the ball at highest point of trajectory will be,

a)Zero b)E/2

c)E /4 d)3E/4

136)A ball is thrown with initial K.E at angle 60^0 with vertical. The K.E of the ball at highest point of trajectory will be,

a)Zero b)E/2

c)E /4 d)3E/4

137)A ball is thrown with initial K.E at angle 45^0 with horizontal. The K.E of the ball at highest point of trajectory will be,

a)Zero b)E/2

c)E /4 d)3E/4

138)A ball thrown with initial velocity u at an angle ɵ with the vertical . The velocity of the ball at the highest point will be,

a)Zero b)u

c)u cosɵ d)u sinɵ

139)A ball is thrown with velocity 80m/s making an angle 30^0 with horizontal ,maximum height attained by ball is,

a)H=95.5m b)H=21.3m

c)H=50.1m d)H=81.63m

140)A ball is thrown with velocity 80m/s making an angle 30^0 with horizontal horizontal range covered by ball is,

a)455m b)505m

c)565.571m d)605.5m

141)Four stones A,B,C & D are projected with same velocity making angles 35^0,$45^0$$55^0and65^0$ with horizontal.Which stone will hit ground at longest point?

a)A b)B

c)C d)D

142)Four stones A,B,C & D are projected with same velocity making angles 35^0,$45^0$$55^0and65^0$ with horizontal.Which stone will hit ground at same point?

a)A & B b)B & D

c)A &D d)A & C

143) A man can throw a stone 80m away.The maximum height to which he can throw stone is,

a)30m b)40m

c)50m d)60m

Unit 3:LASER,PHOTOELECTRICITY & X-RAY (CO3)

1) When light of suitable frequency is incident on metallic surface,the electrons are emmited from metal surface,this effect is _____

a)Photoelectric effect b)Thermoelctric effect

c)Heating effect of electric current d)Seebeck effect

2)According to Planck's theory,Energy is not emitted or absorbed continously,but In descrete packets.These energy packets are called as___

a)Electrons b)Protons

c)Photons d)Neutrons

3)Light can behave _____

a)like a wave b)Like a particle

c)both wave & particle d)None of these

4)Photons are electrically____

a)Positive b)Negative

c)Neutral d)None of these

5)Photons travel with a speed ___

a)Positive b)Negative

c)Neutral d)None of these

6)Energy of photon is given by,

a)$E=h/v$ b)$h=E/v$

c)$E=h+v$ d)$E=hv$

7)Which of the following is a correct relation between v and λ?

a)$c=v+\lambda$ b)$v=c\lambda$

c)$c=v\lambda$ d)$\lambda=cv$

8)Which of the following is a correct relation between v and c?

a)$c=v+\lambda$ b)$v=c\lambda$

c)$v=c/\lambda$ d)$\lambda=cv$

9)The energy of photon of wavelength λ is

a)$E=h\lambda/c$ b)$E=h/c\lambda$

c)$E=hc+\lambda$ d)$E=hc/\lambda$

10) The ratio of photon energy to its frequency is,

a)Joule's constant b)Poission's ratio

c)Planck's constant d)Stoke's constant

11)The value of h is,

a)$3.36X10^{-34}Js$ b)$6.63X10^{34}Js$

c)$6.63X10^{-34}Js$ d)None of these

12)Photon is____

a)indivisible entity b)Divisible entity

c)Electrically positive d)Electrically negative

13)Photons are,

a)Deflected by magnetic field b)Deflected by electric field

c)Do not ionize d)Ionize

14)As per Einstien's theory of relativity,

a)$E=m/c^2$ b)$E=mc^2$

c)$E=mc$ d)$E=m/c$

15)The rest mass of photon of frequency(v) is,

a)$m=hv/c$ b)$m=hc/v$

c)$m=hv/c^2$ d)$m=hv^2/c$

16)The mass of photon of frequency(v) is,

a)m=hcλ b)m=hc/λ

c)m=λ/hc d)m=h/λc

17)The emission of Photoelectron takes place is__

a)$v<v_0$ b)$v>v_0$

c)$v_0>v$ d)v not equal to v_0

18)The amount of energy required to separate the electron from atom is called as

a)Kinetic energy b)Potential energy

c)Photoelectric work function d)Light energy

19)The value of Photoelectric work function depends on ,

a)Nature of metal b)Speed of photons

c)Medium d)Area of metal plate

20)Threshold frequency of ametal is the ____frequency of incident light at which____

a)minimum,emission does not take place b)Maximum,emission not take place

c)minimum,emission just begin d)maximum,emission just begin

21)The value of photoelectric work function &thresghold frequency changes from___

a)Place to place b)Time to time

c)One point to other d)Metal to metal

22)The negative potential given to cell at which photoelectric current becomes zero is_____

a)Photopotential b)Stopping potential

c)Light potential d)zero potential

23)Photoelectric current is directly proportional to_____

a)Speed of photon b)Energy of photon

c)Frequency of light d)Intensity of incident light

24)The velocity of photoelectron is directly proportional to____

a)Speed of photon b)Temperature of metal

c)Frequency of light d)Intensity of incident light

25)What is the effect of intensity on the stopping potential?

a) As intensity increases, stopping potential increases linearly

b) As intensity increases, stopping potential decreases linearly

c) As intensity decreases, stopping potential increases exponentially

d) No effect

26) . During Einstein's Photoelectric Experiment, what changes are observed when the frequency of the incident radiation is increased?

a) The value of saturation current increases

b) No effect

c) The value of stopping potential increases

d) The value of stopping potential decreases

27)Which of the following is not a characteristic of photoelectric effect?

a) The process is instantaneousb) Emission takes place only if $v>v_0$

c) photoelectric current directly prop to intensity of ligh d) Rate of emission directly prop. To temp(T)

28)Einstein's photoelectric equation is given by,

a)$1/2mv^2=h(v-v_0)$ b)$1/2mv^2=2h(v-v_0)$

c)$1/2mv^2=h(v_0-v)$ d)$1/2mv^2=h/(v-v_0)$

29)Out of the following which is correct Einstein's photoelectric equation?

a)$1/2mv^2=h(v-v_0)$ b)$mv^2=h(v-v_0)$

c)$1/2mv^2=h(v_0-v)$ d)$1/2mv^2=h(v+v_0)$

30)The maximum K.E of photoelectrons depends on _____

a)Intensity & Frequency both b)Stopping potential

c)Frequency of light d)Intensity of incident light

31)In Einstein's photoelectric equation$1/2mv^2=h(v-v_0)$ if $v<v_0$then,

a)emission just begins b)emission takes place

c)No emission d)rate of emission is high

32)In Einstein's photoelectric equation$1/2mv^2=h(v-v_0)$ if $v=v_0$then,

a)emission just begins b)emission takes place

c)No emission d)rate of emission is high

33)In Einstein's photoelectric equation$1/2mv^2=h(v-v_0)$ if $v>v_0$then,

a)emission just begins b)emission takes place

c)No emission d)rate of emission is high

34)Unit of momentum is

a)kg-s/m b)kg-m/s

c)kg-cm/s d)Jms/kg

35)Which of the following is not application of photocell

a)Burgular alarm b)Lux meter

c)Automatic street light controller d)Cancer cure

36)The type of light used in burgular alarm is,

a)Gamma rays b)X rays

c)UV rays d)Visible light

37)The principle of LDR is ___

a) resistance decreases as intensity of light increases
b) resistance increases as intensity of light increases
c) resistance increases as frequency of light increases
d) Number of photoelectrons increases with intensity

38)Which of the following is not application of LDR?

a)Security alarm b)smoke detector

c)dental surgery d)street light control

39)The energy of photoelectron is 2.4 eV.Its frequency will be,

a)2.4x 10^{14} Hz b)5.79x 10^{14} Hz

c)8x 10^{14} Hz d)9x 10^{14} Hz

40)The photoelectric work function of a metal is 6x 10^{-19} J.Its threshold frequency will be,

a)2x 10^{14} Hz b)6x 10^{14} Hz

c)9x 10^{14} Hz d)12x 10^{14} Hz

41)Calculate threshold frequncy of metal ,if the workfunction of metal is 6eV.

a)14.4x 10^{14} Hz b)14.4x 10^{14} Hz

c)32.2x 10^{14} Hz d)32.2x 10^{15} Hz

43)Threshold frequncy of metal is 1.2x 10^{15} Hz. Its threshold wavelength is__

a)6x 10^{-7}m b)6x 10^{7} m

c)2.5x 10^{7} m d)2.5x 10^{-7}m

44)Threshold wavelength of metal is 3800Au. Its photoelectric work function is__

a)5.2x 10^{-19}J b)12x 10^{-19}J

c)7.2x 10^{-19}J d)9.5 x 10^{-19}J

45)The photoelectric work function of a metal is 2x 10^{-19} J.Its threshold frequency will be,

a)3x 10^{12} Hz b)3x 10^{13} Hz

c)3x 10^{14} Hz d)3x 10^{15} Hz

46)The energy of photon is 6x 10^{-19} J.its wavelength is___

a)3.3x 10^{-9}m b)3.3x 10-8 m

c)3.3x 10-6 m d)3.3x 10^{-7}m

47)When fast moving electrons are suddenly stopped then___are produced

a)Laser b)Current

c)X-rays d)None of these

48)In Coolidage X-ray tube, electrons are produced due to process known as …….

a)Photoelectric emission b)Thermonic emission

c)Ultrasonic emission d)Hydraulic emission

49)In the process of X-ray production, the intensity of X-rays can be controlled by ……

a)Adjusting filament current b)Adjusting P.D. between cathod and anode

c)Adjusting angle of target d)Adjusting cooling rate

50)In the process of X-ray production, the penitration of X-rays (hard X-rays or soft X-rays) can be controlled by ……

a)Adjusting filament current b)Adjusting P.D. between cathod and anode

c)Adjusting angle of target d)Adjusting cooling rate

51)Which of the following is not a property of X-rays ……

a)Have high penetrating power b)Produce photoelectric effect

c)Affter photographic plates d)Get deflected by magnetic or electric fields

52) X-rays travel with the speed of light. X-rays produces ionization in the gases……

a)True, True b)True, False

c)False, True d)False,False

53)Which of the following is not an application of X-Ray___

a)To detect crack in body of aeroplane b)to detect smuggling gld at airport

c)Used as sensor in automation industry d)To detect crack in bridge

54)Which of the following is not an application of X-Ray___

a)To detect crack in body b)To treat tumors

c)Used in eye surgery d)To treat cancer

55)Calculate operating voltage of X ray tube which emits X-rays of wavelength 0.25Au.

a)25kV b)30.6kV

c)35.7kV d)49.6kV

56) Which of the following is a unique property of laser?

a) Directional b) Speed

c) Coherence d) Wavelength

57). Which of the following is not a property of laser?

a) Directional b) Monchromatic

c) Coherence d)high penetrating power

58) LASER stands for,

a) Light amplification by stimulated emission of radiation

b) Light above stimulated emission of radiation

c)Light amplification by stimulated electronrefraction

d)Light amplification by spontaneous emission of radiation

59)In the process of spontaneous emission ,atom makes transition from ,

a)ground state to excited state b)Excited state to ground state

c)low energy level to high energy level d)None of these

60)In the process of stimulated emission ,atom makes transition from ,

a)ground state to excited state b)Excited state to ground state

c)low energy level to high energy level d)None of these

61)In the process of stimulated absorption ,atom makes transition from ,

a)ground state to excited state b)Excited state to ground state

c)low energy level to high energy level d)None of these

62. What is the need to achieve population inversion?

a) To excite most of the atoms
b) To bring most of the atoms to ground state
c) To achieve stable condition
d) To reduce the time of production of laser

63)The relationship between N1 and N2 for stimulated emission to be dominant is _____

a) N1 = N2
b) N1 > N2
c) N2 > N1
d) No such relationship

64) During pumping, the atoms are exited to _____

a) Higher Exited States
b) Lower Energy states
c) Meta Stable states
d) Not Excited

65)In computer, printers _____ laser is used.

a)He–Ne gas
b)ruby
c)semiconductor
d)CO_2

66)An atom remains in excited state for (10-8)sec & comes to ground state immediately.This state is known as

a)Short excited state
b)Temperary excited state
c)Metastable state
d)ordinary excited state

67) Which of the following is not application of LASER

a)Engraving & embossing
b)Cutting & drilling metals
c)Chemical analysis
d)Computer printer

68)Making population of higher energy state more than ground state is____

a)Population hiker
b)Population inversion
c)Crowd maker
d)None of these

69)Proper Lasing action can be produced using,

a)one level laser system
b)two level laser system
c)three level laser system
d)None of these

70)Appropriate Lasing action can be produced using,

a)one level laser system
b)two level laser system
c)three level laser system
d)None of these

71)He-Ne laser is a type of _____

a) Solid laser
b) Liquid laser
c) Gas laser
d) Diode laser

72)Which pumping method is used in He-Ne laser?

a) Optical Pumping
b) Electrical Excitation
c) Chemical Pumping
d) Direct Conversion

73)Which characteristic of LASER allows it to be used in holography?

a) Coherency
b) Directionality
c) Intensity
d) Monochromaticity

74)The relaxation time for metastable state is

a) 10 year
b) 1year
c) 100 to 10000 sec
d) 10^{-6} to 10^{-3} sec

75)system in which population inversion takes place is,

a) Active system
b)Inverse system
c) perfect system
d) Real system

QUESTION BANK …22202- APPLIED SCIENCE(CHEMISTRY)

-UNIT –IV – Metals, Alloys, Cement & Refractory

01) The property of a metal by which they can be beaten into sheet is called..,

a)malleability b)ductility c) expansion c)stiffness

02) Which metal is found in liquid state at room temperature?

a)Fe b)Zn c)Hg d) Al

03)Which of the following statement s are correct?

a) all metals are ductile b) all nonmetals are ductile

c)generally metals are ductile c)some metals are ductile

04)…….is the process of uniting two pieces of metals by means of heat.

a)casting b)forging c)welding d)brazing

0 5) The process of joining two thin wires by introducing a molten nonferrous alloy Between them bellow 400c is known as……..

a)brazing b) soldering c)welding d) both a& b

06) If a metal is ….., it can be drawn into wire.

a)conductive b) malleable c) magnetic d) ductile

07) …….describe the way a substance reflects light or shines.

a)Magnetism b)brittleness c)luster d)ductility

08) The product from blast furnace in metallurgy of iron known as…..

a)cast iron b) wrought iron c)pig-iron d)

o9) The process of converting an ore into its oxide is called as…

a)smelting b)roasting c)refining d) bessemerisation

10)The process of separating metal from its ore is called as….

a)Magnetic separation b)froth flotation c)metallurgy d)polymerisation

11) Naturally occurring metallic compound are called……

a)metalloids b)mineral c)hard solid d)matrix

12) In Magnetic separation magnets are used to separate…..

a)ore &gangue b)metal & mineral c)meta l& gangue d)iron&steel

13) The converts of an alloy in terms what elements are present &

in what amount is…….

a) fusion b)properties c)composition d)application

14)The science & techonology of extracting metals from their ores,

refining them & preparing them for use is known as…….

a)alloying b)metallurgy c)hardening d)all of the above

15) A solder consists of ……

a) lead & tin b)tin & white metal c)zinc & tin d)tin &antimony

16) Brass is an alloy of …….

a) copper & tin b)copper & zinc

c) copper & lead d) copper & nickel

17) Bronze is an alloy of …….

a)copper & tin b)copper & zinc

c)copper &lead d) copper & nickel

18) The flux used in a blast furnace while melting iron ore is…

a)carbon b)oxygen c)limestone d)coke

19)Naturally occurring minerals from which metals can be extracted profitably

are called compound are called……

a) Alloys b)flux c)ores d) amalgams

20) The rocky impurities associated with the ore are called as

b) Alloys b)flux c) slags d)matrix

21)The removal impurities associated with the ore are called as…

a) Reduction of the ore b) flotation of the ore

c) concentration of ore d)roasting of the ore

22) Oxidation is combination of elements &……

a) hydrogen b)ozone c)helium d)oxygen

23) Froth flotation method uses……

a)pine oil b)alcohol c)acid d)alkali

24)Pig iron is extracted from……

a) hematite b)magnetite c)siderite d)feldspar

25)Copper is extracted from …….

a)malachite b)haematite c)copper pyrites d)dolomite

26) In the extraction of Copper is from copper pyrites , iron is removed ..

a)FeSO4 B)FeSiO3 C)Fe3O4 D)Fe203

27)Froth flotation method is used for concentration of the ore of……..

a)Fe b)Al c)Cr d)Cu

28) High purity copper metal is obtained by……..

a) Carbon reduction b) hydrogen reduction

c) Electric reduction d) thermite reduction

29) Blister copper is ……..

a) pure copper b)impure copper

c)alloy of copper d)ore of copper

30) Haematite ore is concentrated by……..

a)Magnetic separation b)froth flotation c) amalgamation d)all of the above

31) Molten matte is mixture of…….

a)Cu2S +FeS B) Fe2S +FeS c) Cu2OS +FeS d) Cu2O+FeO

32)In purification of copper, anode is….

a) pure copper b)impure copper

c) pure carbon d) none of these

33) Slag is product formed when……..

a)gangue reacts with flux b)flux reacts with ore

c)gangue reacts with ore d))flux reacts with mineral

34)The ability of a metal to cut by cutting tools …

a)machinability b)weldibility c)T.S. d)toughness

35)The ability of a metal to resist deformation in

Response to an applied force is …

a)machinability b)weldibility c stiffness d)toughness

36) Weakening of a metal duo to repeatedly applied load is…..

a)stiffness b)specific heat c)density d)fatigue

37) wood's metal & solder are prepared by….

a)fusion method b)compression method c)smelting d) oxidation

38) Bronze is a……

a)ferrous alloy b)tin alloy c)copper alloy d) zinc alloy

39)…..alloy is used for making of aero planes.

a) brass b)bronze c)Duralumin d)wood's metal

40) wood's metal is a…

a) tough alloy b)hard alloy c)fusible alloy d))all of the above

41)) A Tin Mann's solder consists of ……

a) Pb+Zn b) Pb+ Ni c) Pb +Cu d) Pb +Sn

42)……. Steel is used in railway engineering.

a)low carbon steel b) medium carbon steel

c) high carbon steel d)all of the above

43) Initial setting of cement should not be less than……

a)15 minutes b)30 minutes c)28 minutes d)45 minutes

44) Final setting of cement should not be more than……

a) 1 hour b)2 hours c)5 hours d) 10 hours

45) Early strength of portland cement is contributed by …..

a) TRI-calcium silicate b) TRI-calcium aluminate

c)TRI-calcium aluminum ferrite d) di calcium silicate

46) Gypsum is added to cement in order to……..

a)Prolong hydration b)increase strength after hydration

c) decrease heat of hydration c) none of these

47) The material used as an ingredient of concrete is usually

a)Cement b) aggregate c)water d)all of the above

48) in the manufacture of cement, the dry & wet mixture of

Calcareous & argillaceous materials is burnt in a……

a) country kiln b)muffle furnace c)blast furnace d)rotary kiln

49) argillaceous materials contains……..

a)calcium b) lime c)alumina d)all of the above

50)Hydration of cement is……..

a)exothermic endothermic c) none of these d)both (a) &(b)

51)The presence of lime in cement……..

a)increase setting time of cement b)increase strength

c)makes cement unsound d))all of the above

52) Refractory lining may be …….

a)acidic b basic c neutral d)all of the above

53)Refractory should possess the ability to …..

a) be perfectly conducting b) be perfectly isolating

b)reflect light d)None of these

54)Which of the following ingredient of cement when added in excess quantity ,

causes the cement to set slowly

a)calcium b) lime c)alumina d) silica

55) In order to provide colour , hard ness & strengh in the cement, the ingredient used is….

a) calcium b) lime c)alumina d)iron oxide

56)The presence of tri calcium silicate in cement……..

a)hydrates cement rapidly b)generates less heat of hydration

b)offers strength d)none of these

57))The presence of di calcium silicate in cement……..

a)hydrates cement slowly b)generates less heat of hydration

b) have more resistance to sulphur attack d)all of these

58) The tri calcium aluminate has the property……..

a)reacting fast with water b)initial setting of cement

c)generating large amount of heat of hydration

d)all of these

59)Refractory bricks are used for….

a)retaining walls b)columns c)pillers d)combustion chambers

60)Quick lime is …….

a)obtained by the calcination of pure limestone

b) has great affinity to moisture

c) amorphous

d)all of these

61) The commonly used lime in white washing is…….

a)white lime b)fat-lime c)hydraulic lime d)quick lime

62)Lime mortar is generally made with …….

a) white lime b)fat-lime c)hydraulic lime d)quick lime

63)The lime which contains mainly calcium oxide & slacks with water is…..

a) white lime b)fat-lime c)hydraulic lime d)quick lime

64)Good quality cement contains higher percentage of

a) TRI-calcium silicate b) TRI-calcium aluminate

c)TRI-calcium aluminium- ferrite d)di calcium silicate

65) Which is not basic refractory,…….

a)chrome b) magnetite b) dolomite c) magnetite d)Si C

66) Which of the following is not an alloy?

a)steel b)copper c)brass d) bronze

67) An alloy can be…….

a)homogeneous b)heterogeneous c)intermetallic d)all of these

68)An alloy used in aircraft industry is defined…….

a) brass b)bronze c)Duralumin d)wood's metal

69) A good refractory should have…….

a) High porosity b)low porosity c) medium porosity d) porosity

70)Identify the alloy which shows good castibility…….

a)Duralumin b)solder c)steel d)wood's metal

71)A load bearing strength of refractory should have---

a)high b)low c)stable d)none of these

72)Which of the following is generally used for making cutting tools?

a)low carbon steel b)high carbon steel

c)medium carbon steel d)stainless steel

73) During electro refining of copper ,impure metal is act as—

a)electrolyte b)cathode c)anode d)electrodes

74)In the extraction from hematite ore silica is used as—

a)slag b) flux c)mineral d)matrix

75)The concentrated ore heated in the presence of excess of air is called------

a)Roasting b)Calcination C)HYDROLYSIS D)HYDRATION

76)Calcination is a process oh heating concentrates ore------

a) in the presence of air

b) in the absence of air

c) in the presence of water

d)in the absence of water

77)Select the proper reaction from the following.

a) slag +gangue= Flux

b)Flux + gangue= slag

c)Flux + slag= gangue

d) gangue + matrix =slag

78)The process of removing magnetic impurities from ore is called…….

a)magnetism b)magnetic separation c)froth flotation d)smelting

79)The mineral from which metals can be extracted easily is called as---

a)ore b)gangue c)flux d)slag

80)The process of concentration of sulphide ore is called ------

a) gravity separation b)magnetic separation c)froth flotation d)smelting

81) The calcium silicate formed in the blast furnace is called ------

a)ore b)gangue c)flux d)slag

82)A solder used for soldering the articles of tin is----

a)plumber solder b) tinmenn's solder

c)wood's metal d) duralumin

83)When cement is mixed with water, it forms hard rigid mass due to

initial gel formation is known as-------

a)setting b)hardening c)setting &hardening d)clinkering

84)The rigid mass gradually changes into compact rock like mass is known as-----

a)setting b)hardening c)clinkering d)cementing

85)During electro refining of copper , pure metal is act as—

a)electrolyte b)cathode c)anode d)electrodes

UNIT –V – WATER TREATMENT& ANALYSIS

1) The process of removing Ca &Mg from hard water is known as…….

a)filtration b)flocculation

c) sedimentation d)water softining'.

2)The metallic constituent of hard water are……

a)Mg ;Sn &Fe b)Ca , Mg &Fe

c)Fe, Sn &Ca d)Mg Ca & Sn

3) Which of the following is NOT a properly of hard water?

a)it leathers easily with soap solution b)It has nice taste

c)It is not good for steam generation d)it causes scale formation in kettles

4) Zeolite SOFTINING PROCESS REMOVES….

a)Only temporary hardness of water b)Only permanent hardness of water

c) Both temporary & permanent hardness of water d) none of this..

5 Harhness of water does not….

a) Have any bad effect in boiler b) make cooking of foods difficult

c) make unfit for drinking d)causes difficulty on washing of cloths with soaps

6) Sedimentation is a physical process to remove

a)colloidal particles b)suspended particles

c) MICROORGANISM d)ALL OF THEASE .

7) permanent hardness of water be removed by the addition of

a)Lime b)soda ash

c) potassium -permagnate d)sodium bicarbonate

8) Purest form of naturally occurring water is

a) Rain water b) river water c) lake water d)well water.

9)BOD stands for…,…

a)biochemical oxygen demand b) british oxygen demand

c)) Chemical oxygen demand d) None of above

10)) water which does not produce leathers easily with soap is….

a)mineral water b)hard water c)soft water d)distilled water.

11) permanent hardness is hardness that cannot be removed..

A)boiling b)adding lime c)coagulation d)all of these

12) The liquid waste from kitchen ,bathrooms & wash basins are not called .

a) liquid waste b)sludge c) sewage d) none of these

13)) The standard BOD of water is taken for..

a)1 day b) 2days c) 5 days d)10 days.

14) permanent hardness of water is known as …

a) carbonate hardness b)non carbonate hardness

c)both a& b d) non e of these

15)Scale in boiler are formed duo to…..

a)deposition of $CaCO_3$ b)deposition of $CaSO_4$

C)Hydrolysis OF Mg. d) all the above

16) The most commonly used unit to express hardness is…

a)drgree French b)ppm

c)degree clarks d)gallon

17) Lime soda process uses..

a)$Ca(OH)_2$ b)Na_2CO_3

C)BOTH $CaCO_3$& Na_2co_3 d)chloramine.

18) Residual hardness in ion exchange process is…

a)10-15ppm b)30-60ppm c)15-20 ppm d)0-2 ppm

19) Alkalinity of water is duo to

a) OH- B)CO3 C)HCO3 D)All the above

20)COD STANDS FOR

a)chemical oxygen demand b) biochemical oxygen demand

c)chem -oxy demand d)all above

21)Which is not used for disinfection of water?

a) chlorination b)elecrto- dialysis

c) ozonization d)Addition of KM nO4

22) Acceptable pH range for drinking water is….

a)07-8.5 b)06-07 c)08-10 d)6.5 -9.2

23)Bicarbonates of calcium & magnesium cause ….

a)softness b)permanent hardness

c)temporary hardness d)all the above..

24)temporary hardness of water can be removed by…

a) boling b) filtration c)sedimentation d) solvent extraction

25) Ultraviolet rays are used in water treatment for …

a)illumination b)disinfection c)coagulation d) sedimentation

26) Fresh sewage may becomes Stale in….

a)one hour b) 2-3 hours c)3-4 hours d)6 –hours

27) FOR domestic use of water must be…

a) sparkling b)free from salt

c) HYGNICLLLY PURE d) free from chlorine

28)COAGULATION PROCESSS REMOVES…

a) Flotaing materials b)suspended particles

c)COLLIDAL PARTICLES d)MICRO ORGANISM.

29)Sterization of water can be done for

a)chlorination b)aeration c)using UV rays d)all the above

30) In chlorination process , the germs are killed by…

a)chlorine gas b)chlori amine c)bleaching powder d)all the above

31)In ozonization ……..is used to sterilize water …

a)oxygen gas b)ozone gas c)solid ozone d)chlorine gas

32) Areation is the process of ….

a)spraying water into droplets b)allowing water to flow I ditch

c)STORING water in tanks d)all the above

33)Swimming pool water should be sterilized by..

a) sedimentation b) filtration c) solvent extraction d)UV rays

34)Ozone acts as….

a)Sterilising agent b) Decolorising agent c)deodouring agent d)all of these

35)PH range for city water supply…

a) 1-4 b)6.6-7.5 c) 8-10 d) all the above.

36)When soap is added to hard water, a white ppt of ….is formed

a)sludge b)flux c)Scum d) Scale

37)Secondary treatment uses …..to consume wastes.

a) Microorganisum b)chemicals c) filtration d) None of these

38)Reverse osmosis is a water purification technic that uses…..

a)Coagulants b)resins c)semipermeable membrane d)lime soda.

39)Screening is the process of removing …. From water.

a)scale& sludge b)colloidal particles

b)suspended particles d) floating materials

40)colloidal particles are responsible for …

a)Hardness of water b) Turbidity of water

c)odors of water d)ALL the above

41)Hot lime soda process produces water of hardness of …..

a)30-60ppm b)0-2ppm c)15-30ppm d)5-10ppm

42) cold lime soda process produces water of hardness of …..

a)30-60ppm b)0-2ppm c)15-30ppm d)50-60ppm

43)Turbidity is caused by …

a) clay b)organic matter c)microbes d)ALL the above

44)One ppm….

a) 0.07 fr b).7 fr c)0.1 fr d)0.01 fr

45)Select the unit is used to measure turbidity of water,…..

a)NTU b)ppm c)sec/cm2 d)ATU

46)The total dissolved solids(TDS)can be reduced by the following method….

a)Distillation b)Reverse osmosis c)ion exchange d) All the above

47)The Chemical oxygen demand measure the…..

a)amount oxygen required for growth of microorganism in water

b)amount oxygen removed in order to oxadise to organic matter

c))amount oxygen required to oxadise Ca present in waste water

d)none of these

49)temporary hardness of water is used in the presence of

a) chlorides of Ca & Mg b) sulphates of Ca & Mg

c) cabonates of Ca& Mg d)bicabonates of Ca& Mg

50)Highly alkaline water in boiler causes

a)corrosion b)scale & sludge formation

c)lubrication d)priming& foaming

51)S ELECT THE COMPOUND WHICH IS USED IN THE MAIN PART OF ION EXCHANGE PROCESS

USED fOR softening of hard water

a)Brine solution b)Na- zeolite c)Resins d)all the above

52)Alum is added to water to facilitate the process of …

a)condensation b)melting c)sedimentation d)evaporation

53)Pollution of water bodies can be controlledby…

a)releasing industrial waste into water

b)throwing plastics into water

c)dumping waste in water

d) treatement of sewage waste before disposal

54)Water that is good enough to drink is called

a)Potable water b)ground water c)surface water d)Artesian water

55)Hardness of water is duo to the of salts of …

a)Potassium b)Chlorine c)Mg d)Boron

56)Accorging to WHO ,the soft water has o to …mg per litre as CaCO3…

a)30 b)60 c)90 d)129

57) Florides can be removed by….all the above

a)Reverse osmosis b)lime- softeing c)ion exchange d)all the above

58) Which of the following ion get released from the cation exchange coloumn

a)H+ B)Na+ c)K+ D)Ca++

59) Which of the following ion get released from the anion exchange coloumn

a) co3 b)OH - C)c l- d)f-

60)ion free water get released from exchange is known as….

a)Potable water b) drinking water

c)Coagulated water c)deminaralised water

61)The total hardness of drinking water is…

a)500ppm b)700ppm c)900ppm d)1000ppm

62) THE example of brackish water is…..

a) Potable water b) drinking water

c) Sea water d) underground water

63) Reverse osmosis is a water purification technic is known as…

a) hyper –filtration b) double filtration

c)double - osmosis d)hyper – osmosis

64)Water is mainly used in boilers' for generation of,….

a)power b)elasticity c) steam d)current

65)Select an anion exchanger from the following…

a) Amberlite IR 120 B) Amberlite 400

C)DOWEX -50 d) None of these

66)Select an cation exchanger from the following…

a)Amberlite 400 b)Amberlite IR 120

c))DOWEX -50 d) triolite

67)Which one of theses not cation exchanger…..

a)Amberlite 400 b)Amberlite IR 120

c))DOWEX -50 d) triolite

68)Disposal to sewage in large cities , is done in….

a)Oxidation b)irrigation c)dilution d) reduction

69) the coagulant widely used for sewage tretement is…

a)alum b)ferric chloride c)ferric- sulphate d)chlorine

70)Removal of oil & gas from sewage , is known as…

a)screening b)skimming c)filtration d)) None of these

71)For the COD test of sewage , d) organic matter is oxidizedby potassium cromate ,

in the presence of …

a)H_2SO_4 B) HNO_3 C) HCl d) None of these

72)Scale formation in water causes…

a) no loss of heat b)wastage of heat c) increase in efficiency d)None of these

73)What is chemical formula of slaked lime….

a)$Ca(OH)_2$ b)CaO C)$CaCO_3$ d)$CaCl_2$

74)The gas which may cause explosion in swage is….

a)carbon monoxide b)carbon dioxide c) carbon d) METHANE

75)Flocculated particles do not change their ….

a)Size b) shape c)weight d)None of these

76)The detention period for plain sedimentation water tanks, is usually …..

a)16-24 hours b)4-8 hours c)8-16 hours d)24-36 hours

77) The std BOD of water is taken for….

a) 2 –days b)3- days c)1- day d)5-days

78)Blow-down operation causes the removal of….

a)scales b) sludges c)Bacteria d)Turbidity

79)The formation of Wet steam in boiler is called as …

a)Foaming B)PRIMING

C)Scale &Sludge formation d)None of these

80) IN a nephelo turbidity n meter the light detectors are at ….

a)180 b)360 c)90 d)270

81) Which is n0t used for desalination of water…..

a)boling b) Lime soda process

c) electrodialysis d)flash evaporation

82)flash evaporation is a method of getting pure water from….

a)) Potable water b) drinking water

c) Sea water d) underground water

83)temporary hardness of water is removed by…

a) chlorination b)electo dialysis

c)Boiling d)sedimentation

84)UV –RAYS ARE used in water treatment for

a)sedimentationb) filtration c) solvent extraction) disinfection

85)Which of the following is n0t hazardous chemical present in water…..

a) Cadmium b) calcium c)chromium d)Arsenic

86)Sterilization of water can be done by using….

a)oxygen b)hydrogen peroxide c)potash d)ozone

87) Distilled water can be obtained by……

a)boling b) Lime soda process

c)Zeolite process d)Ion exchange process

88) Which of the following substances are commonly used in a filter….

a) charcoal b) sand c) both charcoal & sand d)alumina

89)The ultimate sources of water is

a)Rivers &lakes b)Dew & forests

c)Rain &snow d)surface & ground water

90)Acidity of water is caused due to….

a) mineral acida b)free CO2

c)iron sulphate d)all the above

91)Turbidity of Raw water is measure of …

a)suspended solids b) acidity of water

c)microbes d)ALL the above

92))The maximum depth of sedimentstion tank is

a)2- m b)6- m c)4-m d)5-m

93)Which one of the following is NOT a property of water….

a) It Boils at 80. b)It is a good solvent

c) density is low d)It clings to glass by capillary action)

94)The principle of chlorination is…..

a) Formation OF Nasent oxygen b) Formation of oxygen molecule

c) Formation OF HCL d)Formation of CHLORINE gas

95)…..is not consequence of scale & sludge formation in the boiler.

a)Abrasion b)wastage of fuel

c)danger of explosion d)decrease in efficiency

UNIT –VI –FUELS

1)The following is the desirable property of a good fuels

a) high energy content b)free from fire hazards

c) low toxicity d)all of these

2) The solid fuels can be used in internal combustion engine

only after their…

a) Solidification b)liquification c)gasification d) all of these

3)The major constituent of natural gas is……

a)methane b)ethane c) propane d) butane

4) Decomposition of higher hydrocarbons into lower hydrocarbon ,

Having lower temperature is known…….

a)polymerization b)hydrogenation

c)carbonization d) cracking

5) The following is used for rating of compression ignition engines…..

a)octane number b) cetane number

c) butane number d) all of these

6)The heat energy released is measured with help of……

a) energy- meter b)thermometer c)calorimeter)ammeter

7) Bomb calorimeter is used to determine…… the

calorific value of the following fuels

a) solid fuels b)liquid fuels

c)both (a) % (b)d) d) none of these

8) which of the component of coal is most important

In the production of heat ?

a)moisture b)volatiles c) ash d)carbon

9)The ratio of hardness & carbon content increase

a)oxygen content progressively decreases

b) fixed carbon increases

c)volatile matter increases

d)calorific value increases

10)Higher % of ash in coal means……

a) decrease in efficiency of coal

b) decrease in in its calorific value

c) decrease in obtaining desired temperature

d)all of these

11)Combustion reaction of fuels is a/an reaction

a)exothermic b) endothermic

c)none of these d)autocatalytic

12)Petrol & diesel can be obtained rom……..

a)coal tar b)coal c)petroleum d)coal gas

13) petroleum is a mixture of……

a) Petrol b) diesel c) petroleum gas d) all of these

14) Inflammable substances have……

a)high ignition temperatur b) low ignition temperature

c)no ignition temperatur d)high boiling point

15) A good fuels should have…..

a)high ignition temperatur b) low ignition temperature

c) high calorific value d)low calorific value

16)LPG is predominantly the mixture of propane % …….

a)methane b)ethane c) butane d)Isobutene

17)…. Is not stage of coalification…..

a)Anthracite b)Carbide c)Bituminous d)lignite

18)The lowest temperature of which a substance

catches fire is called is …

a) boiling point b) melting point

c)ignition temperature d) critical temperature

19) ignition temperature gives……

a) Co2 B)CO C)Carbon d)none of these

20) Which types of combust release the most energy ?

a) combustion b) incomplete combustion

c)thermal decomposition d) all of these

21) Naphthalene balls are obtained from…..

a)carbon b) coke c) petroleum d) none of these

22) Petroleum is formed form…..

a) domestic animals b) organism in sea

c) wild - animals d)insect

23) Refining of Petroleum is……..

a)extracting petroleum gas b)separation of various fraction of petroleum

c) heating of coal d)sedimentation of fossil fuel

24) which of these is being used as a solvent for dry cleaning?

a) diesel b) kerosene c) petroleum d) paraffin wax

25)CNG IS…….

a)high polluting b)less polluting

c) not at all high polluting d) none of these

26) What is the major component of CNG……

a) ethane b) propane a)methane d) butane

27) Which of these is not obtained as a fraction during

Refining of petroleum?

a) kerosene b)natural gas c)lubricating oil d)bitumen

28) The slow process by which large land & tree buried deep under the earth have become coal is called as

a) Carbonation b) carburation c) carbonisation d) none of these

29) The gas which occurs above petroleum - oil trapped under the rock is called a…

a)bio gas b)natural gas c) petroleum gas d)coal gas

30)The property used to separate various petroleum

product by fractional distillation is…….

a) boiling point b) melting point c)solubility d)none of these

31) The property of separation of various product from petroleum

Is called as….

32) Bitumen is used as…..

a)road surfacing b)lubricant c)motor fuel d) none of these

33) ….. is used to prepare candles , Vaseline.

a) petroleum b)wax oil c)paraffin wax d)none of these

34) …… is fuel derived from vegetable oil.

a) biodiesel b)natural gas c) coal gas d)LPG

35) Gasoline is also known as…..

a) Petrol b) diesel c) wax d) CNG

36)The fraction of crude oil that is used in LPG is……

a) naphtha b)wax oil c) residue d)uncondensed gases

37)At a refinery , crude oil is separated into it's components by…..

a)decanting b)filtration

c)catalytic cracking d) fractional distillation

38) Cetane number is an important test for…..

a) Petrol b) diesel c) kerosene d) fuel oil

39)Octane number is an important test for….

a)LPG. B)kerosene c)gasoline d)light diesel oil

40) which of the following compounds is added in LPG

To impart distinct odour

a) AMYL NITRATE B)ETHYL MERCAPTON

C) TETRA ETHYL LEAD D)phenol

41)The most popular antiknock agent is

a)AMYL NITRATE b TETRA ETHYL LEAD

c)phenol d) none of these

42)The molecular formula of TEL is…….

a)C2H5 SH B)Pb(C2H5)4 C)Pb2 C2 H5 d)CH3SH

43)Octane number of paraffin's…….

a)remains constant with change in number of carbon atoms

b)increase with increase in number of carbon atoms

c) decreases with decrease in number of carbon atoms

d) none of these

44) proximate analysis of coal does not include

The determination of…..

a)volatile matter b)% of ash c)fixed carbon d)% of sulpher

45) Ultimate analysis finds….

a) determination of carbon & hydrogen b) determination of Nitrogen

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

46) Higher is the Octane number of gasoline….

a) Higher the knowing it produce b) lower the knowing it produces

c) moderate knowing it produce d) None of these

47) Octane number is measure of…….

a)quality of petrol b)quality of diesel

c)quality of coal d)all of these

48) Cetane number is measure of…….

a)knowing of petrol b)ignition quality of diesel

c)C.V. of coal d) ignition quality of coal

49)otto-hofmann's oven is used in…..

a)coalification of coal b)carbonization of coal

c) Proximate analysis d) Ultimate analysis

50) Laboratory gas is obtained by the cracking of ….

a)kerosene b)gasoline c) diesel oil d)fuel oil

51)which of the following is not a product of tar distillation

a)phenol &naphthalene b)benzyl & pitch

c)anthracite &kerosene d) None of these

52)Combustion reaction of the fuels is an …… reaction

a)auto catalytic b)exothermic

c)endothermic d) None of these

53)Size of blast furnace coke is ….mm.

a)0-15 b)>100 c)25-80 d)15-25

54)Which of the following constituent of coal is

The most important production of coke?

a)carbon b)volatiles c)moisture d)ash

55)Presence of …. In dry gaseous fuel does not contribute

to its calorific value.

a)carbon b)oxygen c) supers d) hydrogen

56) which of the following gaseous fuels has

the lowest calorific value .

a) gobar gas b)refinery gas c)fuel gas d) blast furnace gas

57) Dry air required to burn 1kg carbon completely

may be around…….kg.

a)38 b)20 c)11 d)04

58)oxygen content in atmospheric air is ……..

a)22 b)21 c)23 d)20

59)High excess air in combustion of fuels results in……

a)incomplete combustion b)increased fuel consumption

c) None of these d)smoky flame

60) which of the following has highest calorific value ?

a)peat b)Anthracite c)bituminous coal d) None of these

61)A good quality coal should have

a)high ash content b)low fusion point of ash

c)high sulpher d) None of these

62) Gobar gas is produced by the ….. of gobar.

a) hydrolysis b)fermentation

c) Dehydration d)oxidation

63)Which fuels are used for running automobiles?

a) wood b) diesel c)coal d)charcoal

64)charcoal burns in air producing .

a)CO2 B)CO C)H2 D)O2

65)Fuel may be ……

a)solid b) liquid c)gas d) All oh these

66) Combustion is a …….

a)physical process b)chemical process

c)both a& b d) None of these

67) which of the following has lower ignition temperature?

a) wood b)paper c)coal d)Kerosene oil

68) which of the following is non -combustible?

a)stone piece b) wood b)paper c)matchsticks

69) which of the following is inflammable substances?

a)petrol b)wood c)paper d)straw

70) Essential requirement for fire are…….

a) fuel b)air c)heat d)All of these

71) For combustion …….is necessary.

a) air b)water c)paper d)fuel

72)on burning fuel produces……. Amount of heat.

a)Large b)Less C)Very less d) moderate

73) Which is better domestic fuel…….

a)CNG B)LPG C) WOOD D)coal

74) Use of …. In vehicle reduces pollution

a) Petrol b) diesel c) CNG d)) None of these

75) The most common fire extinguisher is…….

a)water b)CO_2 c)oxygen d)hydrogen

76)Ideal fuel has ….. Calorific value.

a)Low b)High c)Moderate d)zero

77) calorific value gives the…….

a)Fuel efficiency b)Amount of heat

c)Amount of light d)None of these

78)) calorific value is measured in…….

a)Kilo joule b)Kilograms c) Kilo joule per Kg d)KM

79)Incomplete combustion gives….

a)CO_2 b) CO c)carbon d) None of these

80) which of the following is/are carbon fuel……

a)wood b)coal c)petroleum d)All of these

81) combustion of most fuels releases…….

a)CO_2 b)SO_2 C)NO_2 d)Oxygen

82) Global warming is caused duo to …… concentration of CO_2 in air.

a)Decreased b)increased

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

83)Burning of coal& diesel releases……

a)CO_2 b)SO_2 C)NO_2 d)Oxygen

84)Acid rain caused by oxides of …….

a) sulphur, Nitrogen b) sulphur, carbon

c) carbon Nitrogen d)phosphorous, carbon

85)Which is a solid fuel?

a) Petrol b) diesel c) wax d) None of these

86)Water is not suitable for fire involving…….

a)oil b)petrol c)both(a) & (b) d) None of these

87) Which of the following is not a fuel source?

a)wood b)plastic c)charcoal d)PG

88)Which of the following is not a primary fuel?

a)wood b) coke c) peat d)coal

89)Which of the following is not a secondary fuel?

a) oil gas b)refinery gas c)fuel gas d)natural gas

90) 1BTU=…..CALORIE

a)o.252 b)2.52 c)25.2 d)252

91)1Kcal=……BTU ?

a)3.968 b)0.3968 c)39.68 d)396.8

92) Which of the following is a good fuel characteristic?

a) High calorific value b)low moisture

c) low cost d) All of these

93)) Which of the following is an disadvantages of solid fuels?

a)their ash content is high

b)they are easy to transport

c)cost of production is low

d)Easy to store

94) Major advantages of LPG & CNG is ?

a)store as liquid b)High pressure tank not required

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

95)Natural gas turns into liquid known as LNG at ……C

a)-42 b)-163 c)-263 d)-363

96)Sulpher content coal is calculated by……

a) orsat analysis b)Eschka method

c) Kjeldahl's method d) None of these

97)The heat energy released is measured with the help of …

a)energy meter b)Thermometer

c)Calorimeter d)Anemometer

98) Nitrogen content coal is calculated by……

a) orsat analysis b) Eschka method

c) Kjeldahl's method d) None of these

99)Peat may contains as much as …….% water before drying?

a)40-50 b)50-6- c)80-90 d)25-35

100) Air dried lignite contains……% carbon.

a)90-95 b)60-70 c)75-85 d)30-40

101) Anthracite contains……% carbon content

a)92-98 b)60-70 c)75-85 d)30-40