STUDENT INN COACHING CENTER

PPSC Lectureship Guide

PPSC Physics Past Papers

Team STUDENT INN

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Physics MCQs for Public Service Commission Lecturers' Test

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1.Which of the following statements is false for a particle moving in a circle with a constant angular speed?

(A) The velocity vector is tangent to the circle.

(B) The acceleration vector is tangent to the circle.

(C) The acceleration vector points to the centre of the circle.

(D) The velocity and acceleration vectors are perpendicular to each other.

2.A particle is acted upon by a force of constant magnitude which is always perpendicular to the velocity of the particle, the motion of the particle takes place in a plane. It follows that

(A) its velocity is constant

(B) its acceleration is constant

(C) its kinetic energy is constant

(D) it moves in a straight line

3.The dispersion of light in a medium implies that

(a) Lights of different wavelengths travell with different speeds in the medium.

(b) Lights of different frequencies travell with different speeds in the medium.

(c) The refractive index of medium is different for different wavelengths of light.

(d) All of the above

4.During the X-Ray emission , if the voltage is increased

(a) minimum wavelength decreases

(b) minimum wavelength increases

(c) intensity decreases

(d) intensity increases

5.Force exerted on a body can change its

a. kinetic energy

b. direction of motion

c. speed and momentum

d. All above

6.Kirchoff's first law of electric circuits is based on the law of conservation of

(a) only on mass

(b) only on charge

(c) on charge as well as on energy

(d) on charge as well as on mass

7.If a particle moving in a magnetic field , increases its velocity, then its radius of magnetic field energy will

(a) remain constant

(b) decrease

(c) increase

(d) either b or c

8.A particle executes SHM with frequency f. The frequency with which its Kinetic energy oscillates is

(a) f/2

(b) f

(c) 2f

(d) 4f

9.An atom is paramagnetic if it has

(a) an electric dipole moment

(b) no magnetic moment

(c) a magnetic moment

(d) no electric dipole moment

10.Magnetic moment of a diamegnetic atim is

(a) 0

(b) infinity

(c) negative

(d) positive

11.The line on the earth's surface joining the points where the field is horizontal is called

(a) magnetic maredian

(b) magnetic axis

(c) isogonic line

(d) magnetic equator

12.The principle used in the transmission of signal through an optical fibre is

(a) total internal reflection

(b) reflection

(c) refraction

(d) dispersion

13.Which of the following is a Vector?

i> Energy

ii> Power

iii> Force

iv> Mass

14. Which of the following is a vector?

i> Time

ii> Work

iii> Heat

iv> Momentum

15.Which of the following is a scalar?

i> Elementary area

ii> Kinetic energy
iii> Weight of a body
iv> Wind velocity

16. Which of the following is a scalar?
i> Electric field
ii> Magnetic Moment
iii> Acceleration
iv> Electrostatic Potential

17. Moment of inertia is:
i> A scalar
ii> A vector
iii> A tensor
iv> Same as mass
18. Lorentz force is the sum of:
a) Gravitational and centripetal force
B) ELECTRIC AND MAGNETIC FORCE
c) Magnetic and nuclear force
d) Electrical and nuclear force

19. The areas under the hysteresis loop is proportional to
a) Magnetic energy density
b) Thermal energy per unit volume
C) ELECTRIC ENERGY PER UNIT VOLUME
d) Mechanical energy per unit volume

20. The frequency of A.C is measured using:
a) Multimeter b) avometer c) TACHOMETER d) speedometer

21. Del. E = rho/epsilon not is called
a) GAUSS'S LAW b) faraday's law c) ampere's law d) biot savart's law

22. Semiconductor materials have _____ bonds.
a) Ionic b) COVALENT c) mutual d) metallic

23. The depletion region of a pn junction is formed:
a) During the manufacturing process
B) WHEN FORWARD BIAS IS APPLIED TO IT

c) Under reverse bias
d) When its temperature is reduced

24. The current amplification factor DC is given by:
A) IC/IE b) Ic/Ib c)Ib/Ie d) Ib/Ic
25.In amplitude modulation
a) Carrier frequency is changed
B) CARRIER AMPLITUDE IS CHANGED
c) Three sidebands are produced
d) Fidelity is improved

26. Demodulation
a) Is performed at the transmitting station
b) Removes side bands
c) Rectifies modulation signal
d) IS OPPOSITE OF MODULATION

28.Which of the following expression does not represent the force acting on the body of mass m
a. GMem/(Re)2
b. ma
c. μN
d. 6ηπrv

29. Heat cannot by itself flow from a body at lower temperature to a body at higher temperature" is a statement of consequence of
(A) second law of thermodynamics
(B) conservation of momentum
(C) conservation of mass
(D) first law of thermodynamics.

30. Which of the following parameters does not characterize the thermodynamic state of matter?
(A) temperature
(B) pressure
(C) work
(D) volume

31. Which of the following statements is correct for any thermodynamic system?
(A) The internal energy changes in all processes.
(B) Internal energy and entropy are state functions.

(C) The change in entropy can never be zero.
(D) The work done in an adiabatic process is always zero.

32. when a solid metalic sphere is heated.the largest percentage increase occurs in its
a.Diameter
b. Surface area
c. Volume
d. density

33. A metallic sphere has a cavity of diameter D at its center.If the sphere is heated,the diameter of the . cavity will
a. Decrease
b. Increase
c. Remain unchanged
d. none of the above

34.In a given process of an ideal gas,dW=0 and dQ<0 ,then for a gas
a.dT <0
b. dV>0
c.dP=0
d. dT>0

35.what is true for a free expansion process
a. dW=0
b. dQ=0
c. dU=0
d. all the these

36.what is true of Isothermal process
a. dT>0
b. dT<0
c. dQ=dW
d. none of the above

37. if dU=-dW for a process,the process is
a. Adiabatic
b. Isothermal
c. Isobaric
d. None of the abobe

38. The amount of energy radiated by a body depends on
a.The nature of the surface
b. The area of the surface
c. Temperature of the surface
d. all the these
e. none of these

39. The wavelenght of the radiation emitted by the body depends on
a.The nature of the surface
b. The area of the surface
c. Temperature of the surface
d. all the above

40. An ideal black body is thrown in the furnace.It is observed that
a. Intially it is the darkest body and at later times the brightest
b. it is the darkest body all the times
c. It cannot be distinguish at all the times
d. Intially it is the darkest body and at later times It cannot be distinguish

42.One end of a metal rod is kept in a furnace.In steady state,the temperature of the rod
a. Increase
b decrease
c. remains constant
d. is non uniform

43. what is true for black body
a refract radiation
b emit radiation and absorb radiation
c. just absorb radiation
d. just emit radiation

Physics Mcqs Test

(i) If A= 6i-8j, then 4A has the magnitude:
(a) 40
(b) 10
(c) 20
(d) None of these

(ii) Let A= 2i+6j-3k and B= 4i+2j+k then A.B equals:
(a) 8i+12j-3k

(b) 17
(c) 23
(d) None of these

(iii) If V is an operator, then V.V means:
(a) Gradient of a Scalar field
(b) Curl of a vector field
(c) Divergence of a Vector field
(d) None of these

(iv) The volume of a parallelepiped bounded by Vectors A,B and C can be obtained from the expression:
(a) (A x B).C
(b) (A.B)x C
(c) (A x B) x C
(d) None of these

(v) A force acting on a particle is conservative if:
(a) It obeys Newton's third law
(b) It obeys Newton's second law
(c) It works equals the change in Kinetic energy
(d) None of these

(vi) A torque applied to a rigid object always tends to produce:
(a) A rotational acceleration
(b) A linear acceleration
(c) Precision
(d) None of these

(vii) When the velocity of a body is constant, its acceleration is:
(a) Maximum
(b) Zero
(c) Infinity
d) None of these

(viii) In the absence of external torque the total angular momentum is:
(a) Constant
(b) Zero
(c) infinity
(d) None of these

(ix) The rate of change of Momentum of the particle is:
(a) Energy
(b) Force
(c) Impulse
(d) None of these

(x) Constructive and destructive superposition of waves is observed in:
(a) Polarisation
(b) Interference
(c) Diffraction
(d) None of these

(xi) The intensity of a wave is proportional to the square of:
(a) Amplitude
(b) Time
(c) Intensity
(d) None of these

(xii) The colours in soap bubbles, oil slick etc. in a thin film is due to:
(a) Diffraction
(b) Polaristaion
(c) Interference
(d) None of these

(xiii) For higher resolution, in a diffraction grating, one needs to have:
(a) Large number of ruling
(b) Small number of ruling
(c) No rulings at all
(d) None of these

(xiv) To produce interference, the sources must be:
(a) Intense
(b) Incoherent
(c) Coherent
(d) None of these

(xv) Interference fringes are of:
(a) Unequal width
(b) Equal width

(c) Variable width
(d) None of these

(xvi) A Carnot Cycle is:
(a) a rectangle on a P-V graph
(b) bounded by two isotherms and two adiabatics
(c) any four sided process on a P-V graph
(d) None of these

(xvii) In an Adiabatic process:
(a) The temperature of the system remains constant
(b) The temperature of the system must change
(c) The internal energy

(xviii) A Carnot Cycle heat engine operates between 227°C and 127° C. Its efficiency is:
(a) 44%
(b) 20%
(c) 79%
(d) None of these

(xix) Metals pipe carrying water some times bursts in winter because:
(a) Water expands
(b) Ice expands when melts
(c) Metal contracts more than water
(d) None of these

(xx) A Fahrenheit thermometer and Celsius thermometer shows the same reading at:
(a) 200°
(b) -40°
(c) 100°
(d) None of these

Physics Mcqs Practice Test

Posted by staff on 22 September 2014, 2:00 am

Physics Mcqs Practice Test

1) a siren emitting a note of frequency n is fitted on a police van, traveling towards a stationary listener. What is the velocity of the van, if the frequency of the note heard by the listener is double the original frequency?
a) Vs = V
b) Vs=V/2
c) Vs = 2V
d) Vs=V/3

2) Two waves are represented as

y1 = 0.25 sin 316t and
y2 = 0.25 sin 310t
are traveling in same direction. The number of beats produced per second will be:
a) 6
b) 3
c) $3/\pi$
d) 3π

3) when a beam of light travelling in rare medium is reflected from a denser medium ,then it:
a)suffers no phase change
b)undergoes a phase change of 180 degree
c)undergoes a phase change of 270 degree
d)undergoes a phase change of 90 degree

4) when the water waves reach an obstacle in a medium , they bend around the obstacle into the region behind it , this is evidence of phenomena of :
a)refraction
b)diffraction
c)reflection
d)super position

5) if the speed of sound in air is 340m/sec , what is the wavelength of 1-kHz sound waves:
a)3.40m
b)2.94m
c)0.340m
d)0.294m

6) an ocean wave has an amplitude of 2.5 m .Weather condition suddenly changes such that the wave has the amplitude of 5.0 m. the amount of energy transported by the wave is:
a) halved
b) doubled
c) quadrupled
d) remain the same

7) when longitudinal waves propagate through a medium , the particles of the medium:
a)vibrate parallel to the direction of propagation of waves
b)vibrate perpendicular to the direction of propagation of waves
c)do not move at all
d)vibrate at an angle of 360 degree to the direction of waves

8) the waves which do not require any medium for their propagation are called:
a)electromagnetic waves
b)mechanical waves
c)sound waves
d)tidal waves

9) the energy carried by water waves is proportional to the:
a)wavelength squared
b)amplitude squared
c)square root of wavelength
d)square root of amplitude

10) What will be the speed of the transverse wave in a string if the tension in the string remains constant and

the diameter is doubled
a) remains constant
b) becomes half
c) becomes double
d) becomes four times

11) in a transverse wave the distance between the crest and the adjacent trough is
a) lambda/2
b) lambda/4
c) lambda
d) 2 lambda

12) The wavelength of a wave travelling at a speed v and having frequency f is
a) v/f
b) vf
c) f/v
d) none of these

13) two waves of the same frequency and amplitude travelling in the opposite direction along the same path will form
a) electromagnetic waves
b) micro waves
c) standing waves
d) sound waves

14) A phase change of 180 is equivalent to path difference of
a) lambda/2
b) lambda
c) 2 lambda
d) 4 lambda

15) At What temp. the velocity of sound is doubled than as that 10 degree Celsius
a) 1132 C
b) 859 C
c) 759 C
d) 283 C

16)When the wave no. of light is 5*10^6m-1 . then its wavelength is
a)2*10^7 m
b)5*10^-6 m
c)2*10^-7 m
d)none

17)Wave transport energy without transporting
a)Power
b)Work
c)Matter
d)none

18)The speed of sound in hydrogen is _____ times its speed in oxygen
a)Two
b)Three
c)Four

d)Sixteen

19)When a wave goes after collision it reflect back . Then in the result of superposition on the wave will call .
a)Longitudinal waves
b)Compressional waves
c)Stationary waves
d)Reflected waves

20)Speed of sound in vacuum is _____ m/s
a)332
b)340
c)0
d)350

21)for a monoatomic gas Cv=(3/2)R, therefore gamma for this is:
a)3/5
b)5/2
c)4/15
d)2/3

22)the velocity of wave could be increased by :
a)reducing the amplitude
b)decreasing the frequency
c)increasing the period
d)stretching the string more

23) energy is directly related to
a) frequency
b) wavelength
c) amplitude
d) none

24) when a wave move from denser to rarer medium which of the following quantity remains same
a) speed
b) wavelength
c) amplitude
d) frequency

25) Speed of sound is greatest in
a) glass
b)Water
c)wood
d)plastic

26) Speed of sound is greatest in
a) copper
b)Water
c)wood
d)plastic

27) The frequency of the second overtone of a closed pipe is in unison with the third overtone of an open pipe other ratio of lengths of the pipe is
a) 10: 8

b) 5: 4
c) 7: 4
d) 4: 5
e) None of these

28) During the time that sound travels 1100 feet in air, light can travel in vacuum a distance of about
a) 1100 miles
b) 200000 miles
c) 20000 miles
d) 11000 km

29) 56 tuning forks are so arranged in series, that each fork gives 4 beats/second with the previous one. If the frequency of the last fork is 3 times that of the first, then the frequency of the first fork will be
a) 55 Hz
b) 110 Hz
c) 75 Hz
d) 220 Hz

30) The fork A of frequency 100 Hz is sounded with another tuning fork B. the number of beats produced is 2. On putting some wax on the prong of B. the number of beats reduces to 1. the frequency of the fork B is
a) 101 Hz
b) 99 Hz
c) 102 Hz
d) 98 Hz

31) A progressive wave in a stretched string has a speed of 20m/s and a frequency of 100Hz. what is the phase difference between two points 25mm part?
a) zero
b) pie/4 radian
c) pie/2 radian
d) pie radian
A level exam 2002

32) which of the following statements about the stationary waves is true
a) particles between adjacent waves all have the same amplitude
b) particles between adjacent nodes are all out of phase with each other
c) particles on immediately either side of node are moving in opposite directions
d) there is minimum disturbance of the medium at the anti-node

33) A signal has a frequency of 2 M Hz. what is the period of the signal
a) 2 us
b) 5 us
c) 200 ns
d) 500 ns

34) The amplitude of the wave is A and its intensity is I. Which amplitude is necessary for the intensity to be 2I?
a) A^2
b) sq. root A
c) sq. root 2 x A
d) 2A

35) If Cp – Cv = R and Cp/Cv=r , then which relation is correct
(a) Cv=R/r-1
(b) Cv=rR/r-1
(c) Cv=R^2/r^2
(d) Cv=r-1/R

36) when two identical travelling waves are superimposed , the velocity if the resultant wave
a) increases
b) decreases
c) remain same
d) becomes zero

37) if the stretching force of the wire is increased then its frequency
a) decreases
b) increases
c) remain same
d) any of the above can happen

38) A stationary wave is set up in the air column of the closed pipe. At the closed end of the pipe
a) always a node is formed
b) always an anti-node is formed
c) neither a node nor an antinode is formed
d) sometimes a node and sometimes an antinode is formed

39) The amplitude of the sound wave is detected as its
a) wavelength
b) frequency
c) pitch
d) resonance
e) loudness

40) if the velocity of the light in a medium depends on its frequency, then the medium is called
a) coherent
b) refractive
c) dispersive
d) diffractive
e) resonant

41) according to Laplace the sound travels in air under conditions of
a) adiabatic
b) isothermal
c) isobaric
d) isochoric

42) for an echo to be heard the time difference in reaching the ear between the reflected sound waves and the sound waves travelling directly from vibrating source to ear must be
a) 0.01 sec
b) 0.1 sec
c) 1 sec
d) 10 sec
e) 100 sec

43) in order for the two sound waves to produce beats, it is important the two waves

a) have the same frequency
b) have the same amplitude
c) have the same number of overtones
d) have slightly different frequencies
e) have slightly different amplitudes

44) a girl produce a certain note when she blows gently into an organ pipe. If she blows harder into the pipe, the most probable change will be that the sound wave
a) will travel faster
b) will have a higher frequency
c) will have a greater amplitude
d) will have a lower frequency
e) will have a lower amplitude

45) On loading the prong of the tuning fork with wax its frequency
a) decreases
b) remain same
c) increases
d) may increase or decrease

46) when the speed of sound in air is 330m/s, the shortest air column, closed at one end, that will respond to a tuning fork with a frequency of 440 vibrations per second has the length of approximately
a) 19cm
b) 33cm
c) 38cm
d) 67cm
e) 75cm

47) if a man moves, with a speed equal to 0.5 that of sound, away from a stationary organ producing a sound of frequency f, he will probably hear a sound of frequency
a) less than f
b) f
c) 1.5f
d) 2.25f
e) 2.5f

48) A certain stretched string produces a frequency of 1000 vibrations per second. For the same string to produce a frequency twice as that high, the tension in the string should be
a) doubled
b) quadrupled
c) half
d) one fourth
e) square root 2 times the original

49) the periodic alternation of the sound between maximum and minimum loudness are called
a) silence zone
b) interference
c) beats
d) resonance

50) the sound of a siren to the west of you is transmitted to your ear by air that is
a) vibrating in a north-south direction
b) vibrating in a south west-east direction

c) vibrating in a vertical direction
d) moving continuously westward
e) moving continuously eastward

51) when the source of the sound moves away from the stationary listener then _____ occurs
a) an apparent increase in frequency
b) an apparent decrease in frequency
c) an apparent decrease in wavelength
d) none of these

52) which of the following statement is(are) correct about transverse waves
a) transverse waves can be polarized
b) transverse waves can be diffracted
c) microwaves are transverse waves
d) vibrations are perpendicular to the direction of propagation
e) all of the above are correct

53) which of the following property does not apply to sound
a) reflection
b) refraction
c) diffraction
d) interference
e) polarization

54) what is the correct relation between the fundamental frequency of open (f1) and closed pipe (f2)
a) f1= 2 f2
b) f2= 2f1
c) f1=f2
d) f1= 1/f2

55) when light emerges from water and enters the air
a) the light will be refracted
b) the frequency of light will increase
c) the frequency of light will decrease
d) the speed of light will decrease
e) the speed of light will increase

56) which of the following properties of the light is(are) not changed when a beam of light goes obliquely from rarer to a denser medium
1.Amplitude
2.Direction
3.Wavelength
4.Frequency

a) 1,2 and 3 only
b) 1 and 3 only
c) 2 and 4 only
d) 4 only
e) none of these

57) the lowest note that can be produced by a vibrating object is known as which of the following
1.Fundamental frequency
2.First overtone

3.First Harmonic
4.First Basso

a) 1,2 and 3
b) 1 and 3 only
c) 2 and 4 only
d) 4 only
e) none of the above

58) in open organ pipe
a) even harmonics are present
b) odd harmonics are present
c) both even and odd are present
d) selected harmonics are present

59) During a hurricane, a 1,200 Hz warning siren on the town hall sounds. The wind is blowing at 55 m/s in a direction from the siren toward a person 1 km away. With what frequency does the sound wave reach the person?
a) 1,000 Hz
b) 1,030 Hz
c) 1,200 Hz
d) 1,400 Hz
e) 1,440 Hz

60) an organ pipe, closed at one end and open at the other, is designed to have a fundamental frequency of 131 Hz. What is the frequency of the next higher harmonic for this pipe?
a) 44 Hz
b) 196 Hz
c) 262 Hz
d) 393 Hz
e) 524 Hz

61) transverse waves of same frequency are generated in two steel wires A and B. diameter of A is twice as that of B and tension in A is half than in B. the ratio of their velocities is:
a) 1:2√2
b) 1:2
c) 3:2√2
d) 1:√2

62) A sonar depth finder in a boat uses sound signals to find the depth of water. 4 seconds after the sound leaves the boat it returns to boat because of reflection from the bottom. If the speed of sound in water is 1460 meter per second the depth of water in meters is?
a) 2200
b) 4400
c) 4800
d) 2920
e) 19200

63) if the frequency of a sound wave in air at standard temperature and pressure remains constant, the energy of the wave can be varied by changing its
a) amplitude
b) speed
c) wavelength

d) period
e) direction

64) maximum destructive interference of two waves occur at points where the phase difference between the two waves is
a) 0 degree
b) 45
c) 90
d) 180
e) 270

65) the approximate speed of light in water in meter per second is
a) 5.8 x 10^8
b) 1.0 x 10^8
c) 2.3 x 10^8
d) 2.8 x 10^8
e) 3.0 x10^8

66) a source of sound of frequency 600Hz is placed inside water. The speed of sound in water is 1500m/s and in air it is 300m/s. the frequency of sound wave recorded by an observer who is standing on air is
a) 3000Hz
b) 900Hz
c) 600Hz
d) 510Hz

67) velocity of sound is greater in solids than is gases because
a) density of solids is high and elasticity is low
b) density and elasticity of solids is low
c) density of solids is low and elasticity is high
d) elasticity of solids is very high

68) the star moving towards the earth shows a
a) blue shift
b) red shift
c) either a or b
d) none of these

69) speed of sound is independent of
a) temperature of medium
b) density of medium
c) pressure of medium
d)elasticity of medium

70)the fact that universe is expanding is indicated by:
a)red shift
b)blue shift
c)both a and b
d)none of the above

71)progressive waves of frequency 300 Hz are superimposed to produce a system of stationary waves in which adjacent nodes are 1.5 m apart . the speed of wave is:
a)100m/s
b)300m/s

c)600m/s
d)900/s

72)Stationary waves of fundamental frequency 50 Hz are produced in an organ pipe closed at one end. The distance b/w node and antinode is : (the velocity of sound is =300m/s)
a)6m
b)3m
c)2m
d)1.5m

73) which one of the following wave is purely longitudinal:
a)surface wave in shallow pan of water
b)light waves travelling through vacuum
c)waves on plunked guitar string
d)sound waves in air

74)if amplitude of waves at distance "r" from a point source is A then the amplitude at a distance "2r" will be:
a)2A
b)A
c)A/2
d)A/4

75) if a star emitting a yellow light , start accelerating towards earth . its color as seen from earth will be:
a)turn gradually red
b)turn gradually violet
c)remain unchanged
d)turn bright yellow

76) what would be the length of an open organ pipe if it sounds a fundamental frequency note of frequency 230Hz.
a) 0.25m
b) 0.5m
c) 0.75m
d) 2m

77) the length of a stretched string is doubled and the tension is increased four times. Its frequency will be
a) twice
b) 8 times
c) half
d) 4 times

78) the ratio of the velocities of sound in air at 4 atm and 1 atm pressure would be
a) 1:1
b) 1:4
c) 4:1
d) 3:1

79) the color of the star is an indication of
a) weight
b) distance
c) temperature
d) size

Physics Mcqs Practice Test

Posted by staff on 26 August 2014, 11:36 am

Physics Mcqs Practice Test

When one body is actually sliding over the other, the friction is termed:
(I) Limiting (II) Sliding
(III) Kinetic (IV) Dynamic
(a) I only
(b) I & II
(c) II & III
(d) III & IV
(e) III only
Q#03:- If A is perpendicular to B, i.e θ=90, or one of the two vectors is a null vector then A.B will be,
(a) Zero
(b) A.B
(c) ABcosθ
(d) A^2
(e) ABsinθ
Q#04:- Two forces equal in magnitude but opposite in direction and not acting along the same line constitute a:
(a) Tension
(b) Force
(c) Momentum
(d) Torque
(e) Couple
Q#05:- The S.I unit of angular momentum is:

(a) Newton-second
(b) Joule-second
(c) Meter-second
(d) Newton-meter
(e) None of these
Q#06:- The total angular momentum of a system of particles is constant if the net external torque acting on the system is:

(a) Constant
(b) Increase
(c) Decrease
(d) Zero
(e) None of these
Q#07:- Earth quake waves are an example of:
(a) Compressional waves
(b) Longitudinal waves
(c) Pressure waves
(d) Infrasonic waves
(e) All of these except D.
Q#08:- A simple pendulum completes one oscillation in 2 second. Calculate its length when g=9.8 ms^-2, the time period of simple pendulum is:

(a) 0.1414 m
(b) 0.025 m

(c) 0.992 m
(d) 9.202 m
(e) None of these
Q#09:- Which of the following correct statement about Doppler effect:

(I) When the listener is moving and the source is at rest
(II) When the source is moving and the listener is at rest
(III) When both, the source and the listener are moving
(a) I only
(b) II only
(c) III only
(d) I & II
(e) I, II & III
Q#10:- A convex lens of focal length 20 cm, is used to form an erect image which is twice as long as the object. Find the position of the object?

(a) 10 cm
(b) 20 cm
(c) -20 cm
(d) 20.5 cm
(e) -30 cm
Q#11:- In the British Engineering system, the unit of power is:
(a) Meter.foot/second
(b) Kilometer.foot/second
(c) Foot.meter/second
(d) Joule.pound/second
(e) Foot.pound/second
Q#12:- A neutron travels a distance of 12 m in a time interval of 3.6×10^-4 s. Assuming its speed was constant, find its kinetic energy. Take 1.7×10^-27 kg as the mass of neutron.
(a) 6.87 ev
(b) 5.78 ev
(c) 8.56 ev
(d) -8.56 ev
(e) 9.25 ev
Q#13:- The value of the gravitational constant G is:
(a) 5.5×10^3 kg/m^3
(b) 5.5×10^-3 N.m^2/kg^2
(c) 6.67×10^-11 N.m^2/kg^2
(d) 6.98×10^-3 N.m^2/kg^2
(e) 9.8×10^-11 N.m/kg^2
Q#14:- Which pair of the following is vector:
(a) Weight, Momentum
(b) Volume, Entropy
(c) Frequency, Velocity
(d) Acceleration, Distance
(e) Displacement, Speed
Q#15:- Calculate the centripetal acceleration and centripetal force on a man whose mass is 80 kg when resting on the ground at the equator if the radius of earth is 6.4×10^6 m.
(a) 0.69 N
(b) 2.35 N
(c) 2.69 N
(d) 8.65 N

(e) 6.78 N
Q#16:-ΔV/ΔS is the rate of change of potential with respect to the distance and it is called:
(a) Electric field
(b)Electric flux
(c) Potential Difference
(d) Potential Gradient
(e) Electric intensity
Q#17:- The electron acquires a speed of 10^6 ms^-1. Find its energy in electron volts:
(a) 1.66 ev
(b) 2.84 ev
(c) 6.23 ev
(d) 8.34 ev
(e) 9.68 ev
Q#18:- I=V/R, This equation is known as:
(a) Hooke's law
(b) Gauss's law
(c) Ohm's law
(d) Ampere's law
(e) Lenz's law
Q#19:- 1 Kwh=
(a) 2.6×10^2 Joule
(b) 3.6×10^5 Joule
(c) 3.6×10^6 Joule
(d) 36×10^5 Joule
(e) 36×10^4 Joule
Q#20:- The induced current always flows in such a direction as to oppose the change which is giving rise to it, This state of:
(a) Ampere's law
(b) Ohm's law
(c) Newton's law
(d) Hook's law
(e) Lenz's law
Q#21:- The essential part/s of a moving coil galvanometer is/are:
(I) A U-Shaped permanent magnet with cylindrical concave pole-pieces
(II) A flat coil of thin enamel insulated wire usually rectangular
(II) An spiral metallic wire connected to external terminal
(a) I only
(b) I & II only
(c) I, II & III
(d) II & III
(e) III only
Q#22:-A potentiometer is a device for measuring the:
(a) Current
(b) Resistance
(c) Voltage
(d) Both A & C
(e) None of these
Q#23:-The length of a measuring rod is 1 m when it is at rest. What will its length be if it is moving with a velocity one third of the speed of light.
(a) 0.943 m
(b) 0.346 m
(c) 3.64 m

(d) 6.563 m
(e) 9.321 m

Q#24:- The process of combining audio frequency (a-f) and radio frequency (r-f) waves to accomplish translational is called:
(a) Transmission
(b) Rectifier
(c) Modulation
(d) Crystal Diode
(e) Carrier Signal
Q#25:-For hydrogen atom the energy needed to ionize it is_____ electron volts and the corresponding ionization potential is_____.
(a) 6 volts, 6 volts
(b) 12 volts, 12.6 volts
(c) 12.6 volts, 13 volts
(d) 13.6 volts, 13.6 volts
(e) 20 volts, 30 volts
Q#26:- A material consisting of the fissionable (or fissile) isotope is called:
(a) Nuclear fission
(b) Nuclear fusion
(c) Moderator
(d) Nuclear reactor
(e) Reactor fuel
Q#27:- A portable device which is widely used for the detection of ionizing particle or radiations:
(a) Solid state dector
(b) Geiger counter
(c) Wilson cloud chamber
(d) All of these
(e) None of these
Q#28:- The unit of magnetic flux is:
(a) Weber
(b) Tesla
(c) Henry
(d) Coulomb
(e) Newton-coulomb
Q#29:- A basic electric instrument which is used for the detection (or measurement) of small current:
(a) Ammeter
(b) Voltmeter
(c) Galvanometer
(d) Transmeter
(e) All of these
Q#30:- $\Delta x \Delta px \geq h/2\pi =$
(a) 1.05×10^-20 J-s
(b) 2.05×10^-34 J-s
(c) 1.08×10^-30 J-s

(d) 1.05×10^-34 J-s
(e) 1.05×10^-10 J-s
ANSWER KEY
01. D 11. E 21. B
02. D 12. B 22. C
03. A 13. C 23. A

04. E 14. A 24. C
05. B 15. C 25. D
06. D 16. D 26. E
07. D 17. B 27. B
08. C 18. C 28. A
09. E 19. D 29. C
10. A 20. E 30. D

-Physics Mcqs Paper for Public Service Commission Exam

Posted by administrator on 24 May 2014, 5:51 am

Physics Mcqs Paper For Public Service Commission Exam

Physics Mcqs Paper for Public Service Commission Exam

1. Lorentz force is the sum of:
a) Gravitational and centripetal force
B) ELECTRIC AND MAGNETIC FORCE
c) Magnetic and nuclear force
d) Electrical and nuclear force

2. The areas under the hysteresis loop is proportional to
a) Magnetic energy density
b) Thermal energy per unit volume
C) ELECTRIC ENERGY PER UNIT VOLUME
d) Mechanical energy per unit volume

3. The frequency of A.C is measured using:
a) Multimeter b) avometer c) TACHOMETER d) speedometer

4. Del. E = rho/epsilon not is called
a) GAUSS'S LAW b) faraday's law c) ampere's law d) biot savart's law

5. For computation of the rate at which the dipole radiates energy, the interaction of the normal component of _____ is done over sphere of radius R.
a) ELECTRIC FIELD b) pointing vector c) addition vector d) radiation

6. Semiconductor materials have _____ bonds.
a) Ionic b) COVALENT c) mutual d) metallic

7. The depletion region of a pn junction is formed:
a) During the manufacturing process
B) WHEN FORWARD BIAS IS APPLIED TO IT

c) Under reverse bias
d) When its temperature is reduced

8. The current amplification factor DC is given by:
A) IC/IE b) Ic/Ib c)Ib/Ie d) Ib/Ic

9. In amplitude modulation
a) Carrier frequency is changed
B) CARRIER AMPLITUDE IS CHANGED
c) Three sidebands are produced
d) Fidelity is improved

10. Demodulation
a) Is performed at the transmitting station
b) Removes side bands
c) Rectifies modulation signal
d) IS OPPOSITE OF MODULATION

11. Which of the following x-ray lines will have the largest frequency in a given element
a) K alpha b) K BETA c) L gamma d) it depends on the element

12. Which of these statements is a consequence of planck's derivation of a radiation law?
a) Atomic oscillator can emit and absorb energy at discrete values only
b) ATOMIC OSCILLATOR CAN EMIT AND ABSORB ENERGY AT DISCRETE FREQUENCIES ONLY
c) Both A & B
d) None of these

13. The Zeeman effect without the spin of the electron is called_____ Zeeman effect
a) ANOMALOUS b) normal c) paschen d) None of these

14. Zero point energy of harmonic oscillator is
a) hw b) HW/2 c) zero d)hw2

15. According to pauli exclusion principle for two identical ferminions the total __ is antisymmetric
a) Matrix b) WAVE FUNCTION c) operator d) tensor

16. The decay rate of a radioactivity is measured in units of
a) CURIES b) roentgens c) rads d) rems

17. Why are the fission fragments usually radioactive?
a) They come originally from radioactive U235
b) They have a large neutron excess
c) THEY HAVE A LARGE BINDING ENERGY PER NUCLEON
d) They are moving at high speed

18. In a nuclear reactor, the function of the moderator is
a) To absorb neutrons
b) To keep the reactor from going critical

c) TO SLOW DOWN THE NEUTRONS
d) To absorb heat from the core

19. What is the main difficulty associated with the fusion process as a source of electrical power
a) The scarcity of fuel
b) THE COULOMB BARRIER
c) The radioactivity of the products
d) The danger of an explosion

20. Binding energy of a deuteron is
A) 2.22 MEV b) 2.8Mev c) 2.3Mev d)none of these

Physics MCQs for Public Service Commission Lecturers' Test

Posted by administrator on 24 January 2014, 4:29 am

Physics MCQs for Public Service Commission Lecturers' Test

Physics MCQs for Public Service Commission Lecturers' Test
1.Which of the following statements is false for a particle moving in a circle with a constant angular speed?
(A) The velocity vector is tangent to the circle.
(B) The acceleration vector is tangent to the circle.
(C) The acceleration vector points to the centre of the circle.
(D) The velocity and acceleration vectors are perpendicular to each other.

2.A particle is acted upon by a force of constant magnitude which is always perpendicular to the velocity of the particle, the motion of the particle takes place in a plane. It follows that
(A) its velocity is constant
(B) its acceleration is constant
(C) its kinetic energy is constant
(D) it moves in a straight line
3.The dispersion of light in a medium implies that
(a) Lights of different wavelengths travell with different speeds in the medium.
(b) Lights of different frequencies travell with different speeds in the medium.
(c) The refractive index of medium is different for different wavelengths of light.
(d) All of the above
4.During the X-Ray emission , if the voltage is increased
(a) minimum wavelength decreases
(b) minimum wavelength increases
(c) intensity decreases
(d) intensity increases
5.Force exerted on a body can change its
a. kinetic energy
b. direction of motion
c. speed and momentum
d. All above
6.Kirchoff's first law of electric circuits is based on the law of conservation of
(a) only on mass

(b) only on charge
(c) on charge as well as on energy
(d) on charge as well as on mass
7.If a particle moving in a magnetic field , increases its velocity, then its radius of magnetic field energy will
(a) remain constant
(b) decrease
(c) increase
(d) either b or c
8.A particle executes SHM with frequency f. The frequency with which its Kinetic energy oscillates is
(a) f/2
(b) f
(c) 2f
(d) 4f
9.An atom is paramagnetic if it has
(a) an electric dipole moment
(b) no magnetic moment
(c) a magnetic moment
(d) no electric dipole moment
10.Magnetic moment of a diamegnetic atim is
(a) 0
(b) infinity
(c) negative
(d) positive
11.The line on the earth's surface joining the points where the field is horizontal is called
(a) magnetic maredian
(b) magnetic axis
(c) isogonic line
(d) magnetic equator
12.The principle used in the transmission of signal through an optical fibre is
(a) total internal reflection
(b) reflection
(c) refraction
(d) dispersion
13.Which of the following is a Vector?
i> Energy
ii> Power
iii> Force
iv> Mass

14. Which of the following is a vector?
i> Time
ii> Work
iii> Heat
iv> Momentum

15.Which of the following is a scalar?
i> Elementary area
ii> Kinetic energy
iii> Weight of a body
iv> Wind velocity

16. Which of the following is a scalar?
i> Electric field
ii> Magnetic Moment
iii> Acceleration
iv> Electrostatic Potential

17. Moment of inertia is:
i> A scalar
ii> A vector
iii> A tensor
iv> Same as mass
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28.Which of the following expression does not represent the force acting on the body of mass m
a. GMem/(Re)2
b. ma
c. μN
d. 6ηπrv

29. Heat cannot by itself flow from a body at lower temperature to a body at higher temperature" is a statement of consequence of
(A) second law of thermodynamics
(B) conservation of momentum
(C) conservation of mass
(D) first law of thermodynamics.

30. Which of the following parameters does not characterize the thermodynamic state of matter?
(A) temperature
(B) pressure
(C) work
(D) volume

31. Which of the following statements is correct for any thermodynamic system?
(A) The internal energy changes in all processes.
(B) Internal energy and entropy are state functions.
(C) The change in entropy can never be zero.
(D) The work done in an adiabatic process is always zero.

32. when a solid metalic sphere is heated.the largest percentage increase occurs in its
a.Diameter
b. Surface area
c. Volume
d. density

33. A metallic sphere has a cavity of diameter D at its center.If the sphere is heated,the diameter of the . cavity will
a. Decrease
b. Increase
c. Remain unchanged
d. none of the above

34.In a given process of an ideal gas,dW=0 and dQ<0 ,then for a gas
a.dT <0
b. dV>0
c.dP=0
d. dT>0

35.what is true for a free expansion process
a. dW=0

b. dQ=0
c. dU=0
d. all the these

36.what is true of Isothermal process
a. dT>0
b. dT<0
c. dQ=dW
d. none of the above

37. if dU=-dW for a process,the process is
a. Adiabatic
b. Isothermal
c. Isobaric
d. None of the abobe

38. The amount of energy radiated by a body depends on
a.The nature of the surface
b. The area of the surface
c. Temperature of the surface
d. all the these
e. none of these

39. The wavelenght of the radiation emitted by the body depends on
a.The nature of the surface
b. The area of the surface
c. Temperature of the surface
d. all the above

40. An ideal black body is thrown in the furnace.It is observed that
a. Intially it is the darkest body and at later times the brightest
b. it is the darkest body all the times
c. It cannot be distinguish at all the times
d. Intially it is the darkest body and at later times It cannot be distinguish

42.One end of a metal rod is kept in a furnace.In steady state,the temperature of the rod
a. Increase
b decrease
c. remains constant
d. is non uniform

43. what is true for black body
a refract radiation
b emit radiation and absorb radiation
c. just absorb radiation
d. just emit radiation

Physics Mcqs Practice Test

Posted by adeelabbasbk on 18 August 2013, 10:40 am

Physics Mcqs Practice Test

PHYSICAL QUANTITY NOT DIRECTLY INVOLVED IN ROTATORY MOTION IS:
moment of inertia

mass

angular velocity

torque

WHEN A HELIUM LOSES AN ELECTRON IT BECOMES
an alpha particle

a proton

a positive helium ion

a negative helium ion

A SMALL AND A LARGE RAIN DROPS ARE FAILING THROUGH AIR:
large drop moves faster

both move with same velocity

small drop fall faster

None of these above

A BODY CAN HAVE ZERO VELOCITY AND STILL BE ACCELERATING
True

False

We cannot say unless the mass of the body is known

None of these

THE CARNOT CYCLE IS A
reversible cycle process woth two isotherms and two adiabats

constant pressure cycle

cnstant volume cycle

a reversible two stroke cycle

WHEN LIGHT PASSES CLOSED THE EDGE OF ANY OBJECT, IT IS BENT IN ITS PAHT AND TRAVELS IN A NEW DIRECTION THIS BENDING OF LIGHT ARROUND CORNERS IS CALLED

refraction

polaristio

diffraction

interference

WHENEVER A SYSTEM IS MADE TO COMPLETE A CYCLIC PROCESS , THE WORK DONE DURING THE COMPLETE CYCLE

is Zero

positive

is negative

depends upon the path followed

A POTENTIOMETER CAN NOT BE USED FOR THE MEASUREMENT OF

current

voltage

internal resistance of cell

dielectric constant

THE AMOUNT OF CHARGE WHICH CAN BE PLACED ON A CONDUCTOR DOES NOT DEPEND ON

the dialectic strength of the surrounding medium

its capacitance

its potential

its size or ship

THERMOCOUPLE IS AN ARRANGEMENT OF TWO DIFFERET METALS

to convert heat energy onto electric energy

to produce more heat

to convert heat energy into chemical energy

to convert electrical heat t energy

WHAT IS THE RADIUS OF FIRST BOHR`S ORBIT FOR Z=5?

0.53A

0.106A

2.65A

None of these

HEAT PRODUCED BY FRICTION IS TRANSFERRED BY

conduction

radiation

convection

all of these

INTERFERENCE OF LIGHT WAVES RESULTS IN ALTERNATE AREAS OF MINIMUM AND MAXIUM INTENSITY MEANS THAT

energy at dark spots has been destroyed

energy at the bright spots has been created

there is transfer of energy from dark to bright region

average energy medium is reduced

WHAT DETERMINES LONGITUDINAL CHROMATIC ABERRATION OF A LENS

Dispersive power only

Focal length only

Both dispersive power only

None of these

WHEN IMPURITIES ARE ADDED TO METAL, THEY
will decrease the elasticity

will increase the elasticity

will not change the elasticity

will or will not change the elasticity

Regard,

Professor Mohsin hassan

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