PHY101 Physics Solved Objective final Term Papers For Final Term Exam

Question No: 1 (Marks: 1) - Please choose one

As a 2.0-kg block travels around a 0.50-m radius circle it has an angular speed of 12 rad/s. The circle is parallel to the xy plane and is centered on the z axis, a distance of 0.75m from the origin. The z component of the angular momentum around the origin is:

► **6.0kg · m2/s**

► **6.0kg · m2/s**

► 9.0kg · m2/s

► 11 kg · m2/s

► 14 kg · m2/s

Question No: 2 (Marks: 1) - Please choose one

A net torque applied to a rigid object always tends to produce:

► **rotational equilibrium**

► linear acceleration

► **rotational equilibrium**

► angular acceleration

► rotational inertia

Question No: 3 (Marks: 1) - Please choose one

An object attached to one end of a spring makes 20 vibrations in 10 s. Its angular frequency is:

► **2.0 rad/s**

► 12.6 rad/s

► 1.57 rad/s

► **2.0 rad/s**

► 6.3 rad/s

Question No: 4 (Marks: 1) - Please choose one

In simple harmonic motion, the restoring force must be proportional to the:

► **displacement**

► amplitude

► frequency

► velocity

► **displacement**

Question No: 5 (Marks: 1) - Please choose one

Mercury is a convenient liquid to use in a barometer because:

► **it has a high density**

► it is a metal

► it has a high boiling point

► it expands little with temperature

► **it has a high density**

Question No: 6 (Marks: 1) - Please choose one

The units of the electric field are:

► **J/m**

► **J/m**
► J/(C·m)
► J/C
► J·C

Question No: 7 (Marks: 1) - Please choose one

A farad is the same as a

► **J/V**

► **J/V**
► V/J
► C/V
► V/C

Question No: 8 (Marks: 1) - Please choose one

We desire to make an LC circuit that oscillates at 100 Hz using an inductance of 2.5H. We also need a capacitance of:

► **100 µF**

► 1 F
► 1mF
► 1 µF
► **100 µF**

Question No: 9 (Marks: 1) - Please choose one

The wavelength of red light is 700 nm. Its frequency is _____.

► **$4.30 * 10^5$ Hertz**

► $4.30 * 10^4$ Hertz
► $4.30 * 10^3$ Hertz
► **$4.30 * 10^5$ Hertz**
► $4.30 * 10^2$ Hertz

Question No: 10 (Marks: 1) - Please choose one

Which of the following statements is **NOT TRUE** about electromagnetic waves?

► **The electromagnetic radiation from a burning candle is unpolarized.**

► Electromagnetic waves satisfy the Maswell's Equation.
► Electromagnetic waves can not travel through space.
► The receptions of electromagnetic waves require an antenna.

► **The electromagnetic radiation from a burning candle is unpolarized.**

Question No: 11 (Marks: 1) - Please choose one

Radio waves and light waves are _____.

► **Electromagnetic and transverse both**

► Longitudinal waves
► Transverse waves
► **Electromagnetic and transverse both**
► Electromagnetic and longitudinal both

Question No: 12 (Marks: 1) - Please choose one

Wien's Law states that, λ_{max} =_____K.

► **$2.90 * 10^{-3}$ m**

► $2.90 * 10^{-3}$ Hertz
► $2.90 * 10^{-3}$ s
► $2.90 * 10^{-3}$ kg
► **$2.90 * 10^{-3}$ m**

Question No: 13 (Marks: 1) - Please choose one

Interference of light is evidence that:

► the speed of light is very large

► **light is a wave phenomenon**

► the speed of light is very large

► light is a transverse wave
► **light is a wave phenomenon**
► light is electromagnetic in character

Question No: 14 (Marks: 1) - Please choose one

Fahrenheit and Kelvin scales agree numerically at a reading of:

► **-40**

► **-40**
► 0
► 273
► 574

Question No: 15 (Marks: 1) - Please choose one

According to the theory of relativity:

► **moving clocks run fast**

► **moving clocks run fast**
► energy is not conserved in high speed collisions
► the speed of light must be measured relative to the ether
► none of the above are true

Question No: 16 (Marks: 1) - Please choose one

Light from a stationary spaceship is observed, and then the spaceship moves directly away from the observer at high speed while still emitting the light. As a result, the light seen by the observer has:

► **lower frequency and a shorter wavelength than before**

► higher frequency and a longer wavelength than before
► **lower frequency and a shorter wavelength than before**
► higher frequency and a shorter wavelength than before
► lower frequency and a longer wavelength than before

Question No: 17 (Marks: 1) - Please choose one

How fast should you move away from a 6.0×10^{14} Hz light source to observe waves with a frequency of 4.0×10^{14} Hz?

► **38c**

► 20c
► **38c**
► 45c

► 51c

Question No: 18 (Marks: 1) - Please choose one

The quantum number n is most closely associated with what property of the electron in a hydrogen atom?

► **Energy**

► **Energy**
► Orbital angular momentum
► Spin angular momentum
► Magnetic moment

Question No: 19 (Marks: 1) - Please choose one

The quantum number m_s is most closely associated with what property of the electron in an atom?

► **Energy**
► Magnitude of the orbital angular momentum

► **Energy**
► z component of the spin angular momentum
► z component of the orbital angular momentum

Question No: 20 (Marks: 1) - Please choose one

As the wavelength of a wave in a uniform medium increases, its speed will _____.

► **Remain the same**

► Decrease
► Increase
► **Remain the same**
► None of these

Virtual University Old & Current

FINALTERM EXAMINATION
Fall 2009
PHY101- Physics (Session - 1)

Time: 120 min
M a r k s: 70

PHY101 - Physics - Question No: 1 (M a r k s: 1)

As a 2.0-kg block travels around a 0.50-m radius circle it has an angular

speed of
12 rad/s. The circle is parallel to the xy plane and is centered on the z axis, a distance of 0.75m from the origin. The z component of the angular momentum
around the origin is:
► **6.0kg · m2/s**
► 9.0kg · m2/s
► 11 kg · m2/s
► 14 kg · m2/s

PHY101 - Physics - Question No: 2 (M a r k s: 1)
A net torque applied to a rigid object always tends to produce:
► linear acceleration
► rotational equilibrium
► **angular acceleration**
► rotational inertia

PHY101 - Physics - Question No: 3 (M a r k s: 1)
An object attached to one end of a spring makes 20 vibrations in 10 s. Its angular
frequency is:
► 1.57 rad/s
► **2.0 rad/s**
► 6.3 rad/s

PHY101 - Physics - Question No: 4 (M a r k s: 1)
In simple harmonic motion, the restoring force must be proportional to the:
► amplitude
► frequency
► velocity
► **displacement**

PHY101 - Physics - Question No: 5 (M a r k s: 1)
Mercury is a convenient liquid to use in a barometer because:
► it is a metal
► it has a high boiling point
► it expands little with temperature
► **it has a high density**

PHY101 - Physics - Question No: 6 (M a r k s: 1)

The units of the electric field are:
► **J/m**
► J/(C·m)
► J/C
► J·C

PHY101 - Physics - Question No: 7 (M a r k s: 1)
A farad is the same as a
► **J/V**
► V/J
► C/V
► V/C

PHY101 - Physics - Question No: 8 (M a r k s: 1)
We desire to make an LC circuit that oscillates at 100 Hz using an inductance of
2.5H. We also need a capacitance of:
► 1 F
► 1mF
► 1 µF
► **100 µF**

PHY101 - Physics - Question No: 9 (M a r k s: 1) vuzs
The wavelength of red light is 700 nm. Its frequency is _____.
► 4.30 * 10_4 Hertz
► 4.30 * 10_3 Hertz
► **4.30 * 10_5 Hertz**
► 4.30 * 10_2 Hertz

PHY101 - Physics - Question No: 10 (M a r k s: 1)
Which of the following statements is **NOT TRUE** about electromagnetic waves?
► Electromagnetic waves satisfy the Maswell's Equation.
► Electromagnetic waves can not travel through space.
► The receptions of electromagnetic waves require an antenna.
► **The electromagnetic radiation from a burning candle is unpolarized.**

PHY101 - Physics - Question No: 11 (M a r k s: 1)

Radio waves and light waves are _____.
► Longitudinal waves
► Transverse waves
► **Electromagnetic and transverse both**
► Electromagnetic and longitudinal both

PHY101 - Physics - Question No: 12 (M a r k s: 1)
Wien's Law states that, λ_{max} =_____K.
► 2.90 * 10^{-3} Hertz
► 2.90 * 10^{-3} s
► 2.90 * 10^{-3} kg
► **2.90 * 10^{-3} m**

PHY101 - Physics - Question No: 13 (M a r k s: 1)
Interference of light is evidence that:
► the speed of light is very large
► light is a transverse wave
► **light is a wave phenomenon**
► light is electromagnetic in character

PHY101 - Physics - Question No: 14 (M a r k s: 1)
Fahrenheit and Kelvin scales agree numerically at a reading of:
► **-40**
► 0
► 273
► 574

PHY101 - Physics - Question No: 15 (M a r k s: 1)
According to the theory of relativity:
► **moving clocks run fast**
► energy is not conserved in high speed collisions
► the speed of light must be measured relative to the ether
► none of the above are true

PHY101 - Physics - Question No: 16 (M a r k s: 1)
Light from a stationary spaceship is observed, and then the spaceship moves directly away from the observer at high speed while still emitting the light. As
a result, the light seen by the observer has:
► higher frequency and a longer wavelength than before
► **lower frequency and a shorter wavelength than before**

► higher frequency and a shorter wavelength than before
► lower frequency and a longer wavelength than before

PHY101 - Physics - Question No: 17 (M a r k s: 1)
How fast should you move away from a 6.0×10^{14} Hz light source to observe
waves with a frequency of 4.0×10^{14} Hz?
► 20c
► **38c**
► 45c
► 51c

PHY101 - Physics - Question No: 18 (M a r k s: 1)
The quantum number n is most closely associated with what property of the electron in a hydrogen atom?
► **Energy**
► Orbital angular momentum
► Spin angular momentum
► Magnetic moment

PHY101 - Physics - Question No: 19 (M a r k s: 1)
The quantum number m_s is most closely associated with what property of the electron in an atom?
► Magnitude of the orbital angular momentum
► **Energy**
► z component of the spin angular momentum
► z component of the orbital angular momentum

PHY101 - Physics - Question No: 20 (M a r k s: 1)
As the wavelength of a wave in a uniform medium increases, its speed will _____.
► Decrease
► Increase
► **Remain the same**
► None of these

FINALTERM EXAMINATION
Spring 2009
PHY101- Physics (Session - 2)
PHY101 - Physics - Question No: 1 (M a r k s: 1)

The number of significant figures in 0.00150 is:
► 5
► 4
► 3
► 2

PHY101 - Physics - Question No: 2 (M a r k s: 1)
One revolution is the same as:
2π rad
► 1 rad
► 57 rad
► π/2 rad
► π rad
► 2π rad

PHY101 - Physics - Question No: 3 (M a r k s: 1)
For a body to be in equilibrium under the combined action of several forces:
► All the forces must be applied at the same point
all the forces must be applied at the same point
► all of the forces form pairs of equal and opposite forces
► any two of these forces must be balanced by a third force
► the sum of the torques about any point must equal zero

PHY101 - Physics - Question No: 4 (M a r k s: 1)
A bucket of water is pushed from left to right with increasing speed across a
horizontal surface.
Consider the pressure at two points at the same level in the water.
► It is the same
► It is higher at the point on the left
► It is higher at the point on the right
► At first it is higher at the point on the left but as the bucket speeds up it is lower there

PHY101 - Physics - Question No: 5 (M a r k s: 1)
An organ pipe with both ends open is 0.85m long. Assuming that the speed of
sound is 340m/s, the frequency of the third harmonic of this pipe is:

► A. 200 Hz
► B. 300 Hz
► C. 400 Hz
► D. 600 Hz

PHY101 - Physics - Question No: 6 (M a r k s: 1)
Capacitors C1 and C2 are connected in series. The equivalent capacitance is given by
► $C_1C_2/(C_1 + C_2)$
► $(C_1 + C_2)/C_1C_2$
► $1/(C_1 + C_2)$
► C_1/C_2

PHY101 - Physics - Question No: 7 (M a r k s: 1)
If the potential difference across a resistor is doubled:
► only the current is doubled
► only the current is halved
► only the resistance is doubled
► only the resistance is halved

PHY101 - Physics - Question No: 8 (M a r k s: 1)
By using only two resistors, R1 and R2, a student is able to obtain resistances of 3
Ω, 4Ω, 12Ω, and 16 Ω. The values of R1 and R2 (in ohms) are:
► 3, 4
► 2, 12
► 3, 16
► 4, 12

PHY101 - Physics - Question No: 9 (M a r k s: 1)
Faraday's law states that an induced emf is proportional to:
► the rate of change of the electric field
► the rate of change of the magnetic flux
► the rate of change of the electric flux
► the rate of change of the magnetic field

PHY101 - Physics - Question No: 10 (M a r k s: 1)
A generator supplies 100V to the primary coil of a transformer. The primary has
50 turns and the secondary has 500 turns. The secondary voltage is:
► 1000V

► 500V
► 250V
► 100V

PHY101 - Physics - Question No: 11 (M a r k s: 1)
The wavelength of red light is 700 nm. Its frequency is _____.
► 4.30 * 10_4 Hertz
► 4.30 * 10_3 Hertz
► 4.30 * 10_5 Hertz
► 4.30 * 10_2 Hertz

PHY101 - Physics - Question No: 12 (M a r k s: 1)

PHY101 - Physics - Question No: 13 (M a r k s: 1)
A laser in a compact disc player generates light that has a wavelength of 780 nm
in air. The light then enters into the plastic of a CD. If the index of refraction of
plastic is 1.55, the speed of this light once enter the plastic is_____.
► 3.00 * 10_8 m/s
► 1.94 * 10_8 m/s
► 4.29 * 10_8 km/h
► 3.00 * 10_8 km/h

PHY101 - Physics - Question No: 14 (M a r k s: 1)
Which of the following electromagnetic radiations has photons with the greatest energy?
► blue light
► yellow light
► x rays
► radio waves

PHY101 - Physics - Question No: 15 (M a r k s: 1)
A virtual image is one:
► toward which light rays converge but do not pass through
► from which light rays diverge as they pass through
► toward which light rays converge and pass through
► from which light rays diverge but do not pass through

PHY101 - Physics - Question No: 16 (M a r k s: 1) vuzs
What is the unit of magnification factor?
► meter.Kelvin
► radian.Kelvin
► degree.Kelvin
► no units

PHY101 - Physics - Question No: 17 (M a r k s: 1)
During an adiabatic process an object does 100 J of work and its temperature decreases by 5K. During another process it does 25 J of work and its temperature decreases by 5 K. Its heat capacity for the second process is.
► 20 J/K
► 100 J/K
► 15 J/K
► 5 J/K

PHY101 - Physics - Question No: 18 (M a r k s: 1)
An ideal gas expands into a vacuum in a rigid vessel. As a result there is:
► a change in entropy
► a decrease of internal energy
► an increase of pressure
► a change in temperature

PHY101 - Physics - Question No: 19 (M a r k s: 1)
The Stern-Gerlach experiment makes use of:
► a strong uniform magnetic field
► a strong non-uniform magnetic field
► a strong uniform electric field
► a strong non-uniform electric field

PHY101 - Physics - Question No: 20 (M a r k s: 1)
A large collection of nuclei are undergoing alpha decay. The rate of decay at any
instant is proportional to:
► the number of undecayed nuclei present at that instant
► the time since the decays started
► the time remaining before all have decayed
► the half-life of the decay

PHY101 - Physics - Question No: 21 (M a r k s: 1)

Which weighs more, a liter of ice or a liter of water?

PHY101 - Physics - Question No: 22 (M a r k s: 1)
Will the current in a light bulb connected to a 220-V source be greater or less
than when the same bulb is connected to 110-V source?

PHY101 - Physics - Question No: 23 (M a r k s: 1)
How is the wavelength of light related to its frequency?

PHY101 - Physics - Question No: 24 (M a r k s: 1)
We don't notice the de Broglie wavelength for a pitched baseball. Is this because
the wavelength is very large or because it is very small?

PHY101 - Physics - Question No: 25 (M a r k s: 2)
Does every magnet necessarily have a north and south pole? Explain
PHY101 - Physics - Question No: 26 (M a r k s: 2)
In a cool room, a metal or marble table top feels much colder to the touch than
does a wood surface even though they are at the same temperature. Why?

PHY101 - Physics - Question No: 27 (M a r k s: 3) vuzs
If a water wave oscillates up and down three times each second and the distance
between wave crests is 2 m, what is its frequency? What is its wavelength? What is its wave speed?

PHY101 - Physics - Question No: 28 (M a r k s: 3)
A transformer has N_1 = 350 turns and N_2 = 2 000 turns. If the input voltage is coil?

PHY101 - Physics - Question No: 29 (M a r k s: 3)
Why do astronomers looking at distant galaxies talk about looking backward in time?

PHY101 - Physics - Question No: 30 (M a r k s: 3)
Some distant astronomical objects, called quasars, are receding from us at half
the speed of light (or greater). What is the speed of the light we receive from

these quasars?

PHY101 - Physics - Question No: 31 (M a r k s: 5)
Consider a lamp hanging from a chain. What is the tension in the chain?

PHY101 - Physics - Question No: 32 (M a r k s: 5)
Aproton travels with a speed of 3.00 * 10_6 m/s at an angle of 37.0° with the direction of a magnetic field of 0.300 T in the + y direction. What are (a) the magnitude of the magnetic force on the proton and (b) its acceleration?

PHY101 - Physics - Question No: 33 (M a r k s: 5)
1.Light from the Sun takes approximately 8.3 min to reach the Earth. During this
time interval the Earth has continued to rotate on its axis. How far is the actual direction of the Sun from its image in the sky?
2. Do all current-carrying conductors emit electromagnetic waves? Explain
2. Yes all current carrying conductors emit electromagnetic waves, and these are at the right angle of the current passes thorough as right hand rule of Fleming's explains it.

PHY101 - Physics - Question No: 34 (M a r k s: 5)
Explain solar convection zone. What is its other name?

PHY101 - Physics - Question No: 35 (M a r k s: 10)
a) Explain why you can't just open your refrigerator to cool your kitchen on a hot
day. Why is it that turning on a room air conditioner will cool down the room
but opening a refrigerator door will not?
b) On a humid day, water vapor condenses on a cold surface. During condensation, the entropy of the water(a) in-creases, (b) remains constant, (c)
decreases, (d) may decreases or remain unchanged. Give its reason.

Quiz Start Time: 10:39 AM

Question # 1 of 5 (Start time: 10:39:48 AM)

In constructing a thermometer it is NECESSARY to use a substance that:

Select correct option:

- (●) Expands linearly with rising temperature
- ( ) Will not freeze
- ( ) Will not boil
- ( ) Undergoes some change when heated or cooled

Quiz Start Time: 10:39 AM

Question # 2 of 5 (Start time: 10:41:11 AM)

What is the unit of magnification factor?

Select correct option:

- ( ) meter.Kelvin
- ( ) radian.Kelvin
- ( ) degree.Kelvin
- (●) no units

Question # 1 of 5 (Start time: 10:18:42 AM)

No lens is perfect because_____.

Select correct option:

- (•) They suffer from aberration
- ( ) They are not perfectly spherical
- ( ) It is nearly impossible to polish them
- ( ) They are not cleaned with accuracy

Question # 2 of 5 (Start time: 10:19:24 AM)

Constant-volume gas thermometers using different gases all indicate nearly the same temperature when in contact with the same object if:

Select correct option:

- ( ) The volumes are all extremely large
- (•) The volumes are all the same
- ( ) The pressures are all extremely large
- ( ) The particle concentrations are all extremely small

Question # 4 of 5 (Start time: 10:22:07 AM)

A thermometer indicates 98.6?C It may be:

Select correct option:

- ( ) Outdoors on ac old day
- ( ) In a comfortable room
- (•) In a cup of hot tea
- ( ) In a normal person's mouth



Quiz Phy101 (Physics) # 2 Solved 30-01-2012

Room temperature is about 20 degrees on the:
Select correct option:

Kelvin scale
Celsius scale
Fahrenheit scale
Absolute scale

A particle with zero mass and energy E carries momentum:
Select correct option:

Ec
Ec2
vEc
E/c

The quantum number ms is most closely associated with what property of the electron in an atom?
Select correct option:

Magnitude of the orbital angular momentum
Energy
z component of the spin angular momentum

z component of the orbital angular momentum

J.J.Thompson's measurement of e/m for electrons provides evidence of the:
Select correct option:

Wave nature of matter
Particle nature of matter
Wave nature of radiation
Particle nature of radiation

During a slow adiabatic expansion of a gas:

Select correct option:

The pressure remains constant
Energy is added as heat
Work is done on the gas
No energy enters or leaves as heat