PHY101 FINAL TERM PAPER SHARED BY STUDENT

VU NET

ON FEBRUARY 22, 2018 AT 7:25PM

Question No.1:

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?

Question No.2:

Intimal is pushing but the box does not move. What is the force of static friction shown in below figure.

Question No.3:

Is it true to say that Centre of mass and Centre of graving are the same? either yes or no explain in each case.

Question No.4:

Describe a few examples in which the force of friction exerted on an object is in the direction of motion of the object.

Question No.5:

Is it possible for two objects to be in thermal equilibrium if they are not in content with each other? Explain.

Question No.6:

Why discovers the nucleus? Write the experimental setup that's the follows.

Question No.7:

Wave spend in a string is a fiction of frequency, so if the wave frequency, will the wave speed increase to?

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON MARCH 6, 2016 AT 10:08PM

A 2000kg car is moving with a velocity of 20 m/s collides and locks with a 1500 kg car at rest a stop sign. Show the momentum is conserved.
Light from sun takes approximately 8.3 min to reach the earth. during the earth is rotating with the constant speed continuously. How far is the actual direction of the sun.
Do all current carrying conductors emit electromagnetic waves.
If the electric field in the region of space is zero, can u conclude that there is no charge in the region.
Is Heisenberg's uncertainty principle applicable to all particle case of using thermometer to measure the temperature of the glass of water.
If you hold water in a paper cup over flame, can you bring the water to boil, if then how?
All objects radiate energy then why are we not able to see all the objects in the dark?
If an electron and proton have same De Broglie's wavelength, which particle has greater speed?
Explain why mercury rises in Thermometer when is it put in the hot water.
why is glass transparent to visible light but opaque to ultraviolet and infrared.
thats all stay blessed :ansa:

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON MARCH 8, 2016 AT 6:51PM

today is my paper mcqs mostly uper di hvy fil se thy bt kuch new bi thy questions are following

1.if a120v line to asockedis limited to15a by asaftyfuse will it operate a 1200w hair dryer?

2. wearing a metal bracelet in a region of strong megnatic filled could be hazardous?

3. what is the changing in entropyof 1mol of water at0c that freez?

4. what is the value of relativivistismomentam of the proton??

5.explane the fusion reactions sun ?

6.if a total charge inside a surface is known but the distribution of the charg is unspecified can u use the causs?

7.law to find the electric field all object radiate energy?

8. is heisenbergs uncertainly principal a case of using a thermeter to measure the temprature of glass of water?

9.do you think light was wave nature and partical nature .give strong reason?

10. what potantial difference is need to stop an electron having an initial sped of 4.20*10 ras to power 5 m/s

11. do you agree or not that stationary charg or steady curent can produce electro megnatic waves?

ples remember me in your prayers

PHY101 FINAL TERM PAPER SHARED BY STUDENT

on August 26, 2016 at 7:59pm

my today's paper:

Q1: a planet has two moons of equal masses. Moon-I is in a circular orbit of radius r and Moon-II is in circular orbit of 2r . compare the magnitude of gravitational force exerted by planet on moon-I and moon-II(show all mathematical work) (2)

Q2; what happens to current in other lamps if one lamp in a series circuit burns out (2)

Q3: Given that electrons behave like waves, how is droppler shift described in terms of momentum. (2)

Q4: Find the shift in wavelength of photons scattered by electrons at theta = 60 (2)

Q5: How can object move with respect to an observer so that the sound from it is not shifted in frequency (3)

Q6; A small bar magnet is suspended in a uniform o.250-T magnetic field. the maximum torque experienced by magnet is 4.60 * 10^-3Nm. Calculate the magnetic moment of the bar magnet. (3)

Q7:is it possible to be in thermal equilibrium if they are not in contact with each other Explain (3)

Q8:with regard to reference frames, how does general relativity differ from special relativity? (3)

Q9: a) What is difference b/w magnetic flux and magnet field?

b) A loop of wire is placed in uniform magnetic field for what orientation of the loop is the maximum magnetic flux? for what orientation it is zero? (5)

Q10: An electron has de broglie wavelength 2.80*10^-10m determine a) magnitude of its momentum b) its K.E (5)

Q11. Explain Fusion Reaction of Sun (5)

Q12:a)

The speed of sound can vary signigicantly depending on the medium it travels through? if no, give a proof if yes comapre the speed of sound among water, air, solids.

b) the greater the amplitude of a sound wave the faster the waves moves. Explain? (5)

Mcqs were about the sUn mass and temperature , kinds of equillibriums, magnetic field and flux etc

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON MARCH 7, 2015 AT 11:13AM

My To Day PHY_101 Paper

Subjective:

Black body black? Explain with solid reason.

What is brought about quantum resolution?

Give at least three postulate of Bohr Theory.

Thermal equilibrium

MCQS:

Interference of light is evidence that:

(**light is a wave phenomenon)**

What is means of polarization?

Fahrenheit and Kelvin scales agree numerically at a reading of:

(-40)

How fast should you move away from a 6.0 × 1014 Hz light source to observe waves

With a frequency of 4.0 × 1014 Hz?

(38c)

Which of the following electromagnetic radiations has photons with the

Greatest energy?

(x rays)

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON MARCH 8, 2015 AT 7:11PM

my today phy 101 paper:

subjective:

1. what role resistors play in electric circuit? (2)
2. why does not have Kelvin scale any negative number? (2)
3. only a small percentage of the electric energy fed into a common light bulb is transforms into visible light. what happens to it? (2)
4. do you think light has wave nature or particle nature. give some very strong reason. (3)
5. what is the value of relativistic momentum of proton if its mass is 1.67 * 10^27 kg and velocity is 0.50c. (2)
6. is Heisenberg's uncertainty principle applicable to the practical case of using thermometer to measure the temp. of glass of water. (3)

7. you want to explore the shape of a cellain molecule by scattering electrons of momentum p from a gas of molecules and studying the deflection of electrons.you will be able to see finer details in the molecules by a) increasing p b) decreasing p c) not worrying what is p (3)
8. A cylindrical copper cable 1.50 km long is connected across a 220 v potential difference.what should be its diameter so that it produces heat at the rate of 50.0 w. (5)
9. a) will brighter light eject more electrons from a photosensitive surface than dimmer light of same frequency? a) will high frequency light eject a greater number of electrons than low frequency light? (5)
10. given that rms speed of a helium atom at a certain temperature is 1350 m/s find by proportion the rms speed of oxygen molecule at this temperature.the molecular mass of He is 4.00 g/mol and O2 is 32.0 g/mol.
11. an alpha particle m= 6.64*10^-27 kg emitted in the radioactive decay of uranium 238 has an energy of 4.20Mev.what is its broglie wavelength? (5)
12. lightning occurs when there is a flow of electric charge between the ground and a thundercloud.the max. rate of charge flow in a lightning bolt is 20,000 c/s this last for 100 micro sec. or less.how much charge flows between ground and cloud in this time.how many electrons flow during this time? (3)

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON MARCH 13, 2015 AT 1:29PM

MY TODAY PHYSICS 101

PAPER SHORT AND LONG Qs

A cylindrical copper cable 1.50Km long is connected across a 220.0V potential 5 marks difference.

What should be its diameter so that it produces heat at a rate of 50.0W? **5 Marks**

Explain the fusion reaction on Sun **5 Marks**

In a 30.0-s interval, 500 hailstones strike a glass window of area 0.600 m2 at an angle of 45.0° to the window surface. Each hailstone has a mass of 5.00 g and moves with a speed of 8.00 m/s. Assuming the collisions are elastic, find the average force and pressure on the window **5 Marks**

Unpolarized light passes through two polaroid sheets. The axis of the first is vertical, and that of the second is at 30.0° to the vertical. What fraction of the incident light is transmitted? 3 Marks

What are the properties of wave function? 3 Marks

Which is denser, dry air or air saturated with water vapor? Explain.3 Marks

All objects radiate energy. Then why, are we not able to see all objects in a dark room?3 Marks

In a conductor, changes in the electric field that drives the electrons through the conductor propagate with a speed close to the speed of light, although the drift velocity of the electrons is very small. Explain how these statements can both be true. Does one particular electron move from one end of the conductor to the other? 3 Marks

Is there any difference between the energy required to disassemble a nucleus into its constituent parts and amount of energy that is released when the same nucleus is assembled from separated nucleons? 2 Marks

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?2 Marks

What happens when a magnetically stored bit of information on a computer disk

spins under a reading head that contains a small coil? 2 Marks

What does it mean to say that a certain current is 60 HZ? 2 Mark

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON AUGUST 22, 2014 AT 2:50PM

Heres my paper,...well some of it

NOTE: IM JUST RECALLING FROM MEMORY.IT MAY NOT BE EXACTLY WHAT I

SAY.I REDUCED SOMETHINGS AS WELL.AND THIS IS NOT EVERYTHING.THANK

YOU

MCQs.
Note these points
1.i think a lot were about very simple calculations
2. 4 i think were related to energy and current in coil etc.ohms

were also mentioned.
2.gravity constant G was mentioned
3.units related questions came JOULE and COULOMB Units
4.i think there was also about frequency

SUBJECTIVE
1. which would be faster electron or proton (from past)
2.a 2(or 3?...i think 2) mark question some Yadawa wavelength or something like that
3.a 3 marks questiona transformer question n1 coil and n2 coil find emr (from past)
4.a 5 mark question on green house effect.also to tell it's effect

on humans
5.a 5 mark question on interference that why it happens with thin film

and not thick film and what is the dividing between thick and thin. i reduced the question.it was much like this
6.a 5 mark question : a 12 volt battery with resistances or capacitors

something like that
(a)What happens if we add another conductor or resistor
(b)what is the effect on voltage or battery something like that
(c)What is the effect on current

NOTE: IM JUSWT RECALLING FROM MEMORY.IT MAY NOT BE EXACTLY WHAT I SAY.I REDUCED SOMETHINGS AS WELL.AND THIS IS NOT EVERYTHING.THANK YOU

PHY101 FINAL TERM PAPER SHARED BY STUDENT

30/8/2014

total question =52

mcqs =40

2 marks questions=4

3 marks of question =4

5 marks of question =4

mcqs

1)the unit of magnetic dipole

2)step down transformer

3)what is the greater wavelength

4) the plants look green,they have chlorophyll ,chlorophyll makes leaves green to absorb

i)green only,ii)red only,iii)blue only ,iv)red and blue

5) polarization means
mostly past papers se mcqs aye huay thy

2 marks questions

what is the net charge of charged capacitor =2

you can get sunburn on a cloudy day,but you can not get sunburn on a sunny day if u r behind the glass.=2

explain the electron behave like a wave=2

will higher frequency light give greater number of electron or low frequency light give greater number of electron=2

3 marks questions

if the charge particle moves in the straight line through some region of space can you see that the magnetic field is that region is zero?=3

two questions are related about clock =3+3

5 **marks questions**

a beam of electron travels 3.o*10 power 6 m/s through a uniform magnetic field of 4.0*10 power-2 T at right angle .how strong force is acting on the electron.=5

a)what become of isotopes that undergo alpha decay

b)which produce higher counting rate.....=5

a gas is compressed by constant pressure 0f 0.800 atm to 9.0 to 2.0.in the process 400 j energy lose heats.
a)work done on the gas

b)what is the change in energy=5

last numerical tha de-brolige se mutalik tha.=5

PHY101 FINAL TERM PAPER SHARED BY STUDENT

on August 31, 2014 at 12:27am

MCQs.
Note these points
1.i think a lot were about very simple calculations
2. 4 i think were related to energy and current in coil etc.ohms were also mentioned.

2.gravity constant G was mentioned
3.units related questions came JOULE and COULOMB Units
4.i think there was also about frequency
SUBJECTIVE
1.which would be faster electron or proton (from past)
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on humans
5.a 5 mark question on interference that why it happens with thin film
and not thick film and what is the dividing between thick and thin. i reduced the question.it was much like this
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something like that
(a) What happens if we add another conductor or resistor
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NOTE: IM JUSWT RECALLING FROM MEMORY.IT MAY NOT BE EXACTLY WHAT I SAY.I REDUCED SOMETHINGS AS WELL.AND THIS IS NOT EVERYTHING.THANK YOU

PHY101 FINAL TERM PAPER SHARED BY STUDENT

on March 1, 2014 at 10:26pm

these question are given in my paper to day.

Continued after the jump ....

1. **1. Find momentum of proton in MeV/C units assuming its total energy is twice its rest energy. Marks 5**

1. **2. With regard to reference frames, how general relatively from special relatively Marks 3**

1. **3. A vessel is filled with gas atoms equilibrium pressure and temperature. Can all gas and molecules in vessel have same speed? Marks 3**

1. **4. What is the net charge of capacitor? Marks 3**

1. **5. Given that electron behave like wave, how is Doppler shift described in term of momentum Marks 3**

1. **6. What happens when a magnetically stored bit of information on a compact disk spins under a reading head that contain a small coil? Marks 2**

1. **7. A laser beam (lamda = 632.8 nm) is incident on two slits 0.200nm apart. How far apart are the bright 5.00m away? Marks 3**

1. **8. Potential difference between is 6.0v , what is kinetic energy in joul and electron (electron is -1.6*10^-19c) Marks 2**

1. **9. The initial angular velocity 1170 rev/mint and final angular velocity 2880 rev/mint and time 12.6s. how many revolution does engine make during this time. Marks 5**

PHY101 FINAL TERM PAPER SHARED BY STUDENT

MY TODAY PAPER(01/03/2014)

An Electron has do Brogile wavelength of $2.80*10^{-10}$m. (5)

a) Determine magnitude of its momentum and

b) K.E (in jouls and ev)

A person with body resistance his hand is 10kΩ accidently graps the terminal of 14Kw supply.

a) If the inertial resistance of power supply is 2000Ω. What is current through person body.

b) What is power disputed of body.

Is it true that de Brogile wavelength associated with particles like proton and electron only?

Or it is applicable for larger thing like baseball. Explain (5)

Light travelling in air is incident on the surface of a block of plastic at an angle of 62.7^0 to the normal and is bent so its make 48.1^0 angle with normal in plastic. Find space of light in plastic. (5)

Show that ratio of distance of two particles from centre of mass of two particle system is inverse ratio of their mass? (5)

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON JULY 22, 2013 AT 5:16PM

Q : What is difference between reflection ad refection ?
Q what is pressure and its unit and is it scalar quantity or vector?
Q why mirror can not rise chromatic aberration?
Q what is photoshere zone of sun?
Q: values were given .calculate work done?
Q: values were given find resulting induced current?
Q:Two identical clocks one is hanging upstairs bed room and one is in down stairs kitchen. which will run slowly?
Q: Values were given find frictional shift wavelength?
Q: values were give find approximate height ?
Q: is it correct to say radio waves are low frequency waves? and are radio waves sound waves as well?
Q: A dry aluminium foil paper can be bring out from oven with no burn on finger but if foil has some moisture it will result in burn why?
Q: first mercury in thermometer descend slightly but it rise after putting in hot water glass. why

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON JULY 22, 2013 AT 5:16PM

Total Questions = 64

Total Marks = 88

Total 1 Mark MCQ = 56

Total 3 Marks Short Questions=4

Total 5 Marks Long Questions =4

While using a projective test, series of ambiguous pictures is shown to the subject and subject is required to write a story. Identify and briefly explain the test. (1+2)

The experience of long-term anxiety with no explanation is a definition for a disorder. Identify the disorder and explain. (1+2)

Saad feels that when he smokes he looks stylish. He thinks smoking enhance his functioning competence. That is why he keeps on smoking. The ABC model of attitude encompasses different components, keeping in mind the above mentioned situation name three components of saad's attitude.

Amnesia and dementia are two types of memory disorders. Compare and contrast the two.(3)

Identify on which points mostly neo-Freudian emphasized and on which disagreed? (2.5+2.5)

Different theories of "Pitch Perception and Hearing" are being presented over the years. Which one is your favorite one and why?

You are required to write a hypothetical case of a person, who is suffering from panic disorder.

You are supposed to design a mobile phone ad by utilizing a combination of classical and operant conditioning principles.

PHY101 FINAL TERM PAPER SHARED BY STUDENT

ON JULY 28, 2013 AT 1:45PM

PHY101 SHORT QUESTION:

1. IF THREE BALLS THROWN AT AIR SIMALTNAUOSLY THEN WHAT WILL BE THE ACCELERATION OF THEIR CENTER OF MASS WHILE THEY ARE IN MOTION?
2. WHAT IS THE UNDERLYING PROCESS THAT ALL OTHER ELECTROMAGNETIC WAVES TRAVEL AT ONE FIXED SPEED?

LONG QUESTION:

IF THERE IS A PLAYER AND THERE IS A CD OR DVD IN IT THEN TO HEAD UP THE TRACK WHAT SHOULD BE DONE WHILE THE CD IS MOVING WITH CONSTANT SPEED?

I. INCREASE THE ROTATION SPEED
II. DECRESE THE ROTATION SPEED
III. STAY THE SAME

ALSO EXPLAIN THE REASON!

ONE QUESTION WAS ABOUT DEFRACTION?

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

PHY101 FINAL TERM PAPER SHARED BY STUDENT

Ref No: 1316760
Time: 120 min
Marks: 70

Student Info	
StudentID:	**BC080402259**
Center:	**OPKST**
ExamDate:	**3/9/2010 12:00:00 AM**

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

PHY101 FINAL TERM PAPER SHARED BY STUDENT

► **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**

PHY101 FINAL TERM PAPER SHARED BY STUDENT

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

PHY101 FINAL TERM PAPER SHARED BY STUDENT

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:

► **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:

PHY101 FINAL TERM PAPER SHARED BY STUDENT

► **-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**

PHY101 FINAL TERM PAPER SHARED BY STUDENT

► **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)

http://www.vuzs.net/

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 FINAL TERM PAPER SHARED BY STUDENT

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?

PHY101 FINAL TERM EXAM SHARED BY STUDENT

► 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)

PHY101 FINAL TERM PAPER SHARED BY STUDENT

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 FINAL TERM PAPER SHARED BY STUDENT

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 FINAL TERM PAPER SHARED BY STUDENT

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.

Question No: 21 (Marks: 3)

Two people are carrying a uniform wooden board that is 3.00 m long and weighs 160 N. If one person applies an upward force equal to 60 N at one end, at what point does the other person lift? Begin with a free-body diagram of the board.

Forces in x direction = 0
Forces in Y = F1 + F2 - W

Given:
L = 3.00 m F1 = 60 N
W = 160 N F2 = ? and x2 = ?
Sum of forces and torques = 0
Sum Force = F1 + F2 - W = 0
60N + F2 - 160 N = 0
F2 = 100 N
My pivot point is at F2.
Sum of torques = 0
Torque F1 = F1(L - x2)
Torque F2 = 0 b/c at pivot point
Torque W = W(L/2 - x2)
F1L - F1x2 + (WL)/2 - Wx2 = 0

(60)(3) - 60x2 + (160 * 3)/2 - 160x2 = 0
180-60x2 + 240-160x2 = 0
420-220x2 = 0
x2 = 1.9m

Question No: 22 (Marks: 3)

If a charged particle moves in a straight line through some region of space, can you say that the magnetic field in that region is zero?

Question No: 23 (Marks: 3)

You want to explore the shape of a cel1ain molecule by scattering electrons of momentum p from a gas of the molecules and studying the deflection of the electrons. You will be able to see finer details in the molecules by (a) increasing p; (b) decreasing p: (c) not worrying what p is.

Question No: 24 (Marks: 3)

A vessel is filled with gas at some equilibrium pressure and temperature. Can all gas molecules in the vessel have the same speed?

Question No: 25 (Marks: 3)

What are the properties of wave function?

Wave functions contain all the measurable information about the particles

Wave functions are continuous.

They allow energy calculations via schrodinger equation.

They establish the probability distribution in three dimensions.

They permit calculation of most probable values of given variables.

Question No: 26 (Marks: 5)

A bike accelerates uniformly from rest to a speed of 7.10 m/s over a distance of 35.4 m. Determine the acceleration of the bike.

$2as = vf^2 - vi^2$

$2a(35.4) = (7.10)^2 - (0)^2$

$2a(35.4) = 50.41$

$A = .71\ m/s^2$

Question No: 27 (Marks: 5)

A flat loop of wire consisting of a single turn of cross-sectional area 8.00 cm^2 is perpendicular to a magnetic field that increases uniformly in magnitude from 0.500 T to 2.50 T in 1.00 s. What is the resulting induced current if the loop has a resistance of 2.00 W?

E=(Bf-Bi)*A/t=(2.5-0.5)*8*10^{-4}/1=1.6*10^{-3} V I=E/R=1.23 mA

Question No: 28 (Marks: 5)

An ideal gas is contained in a vessel at 300 K. If the temperature is increased to 900 K, by what factor does each one of the following change? (a) The average kinetic energy of the molecules. (b) The rms molecular speed. (c) The average momentum change of one molecule in a collision with a wall. (d) The rate of collisions of molecules with walls. (e) The pressure of the gas.

Question No: 29 (Marks: 5)

Who discover the nucleus? Write the experimental setup that he follows.

Ans:

Lord Rutherford discovered the nucleus. He carried out his famous experiment that showed the existence of a small but very heavy core of the atom. He arranged for a beam of alpha particles to strike gold atoms in a thin foil of gold. If the positive and negative charges in the atom were randomly distributed, all ' would go through without any deflection. But a lot of backscattering was seen, and some alphas were even deflected back in the direction of the incident beam. This was possible only if they were colliding with a very heavy object inside the atom.

Question No: 30 (Marks: 5)

PHY101 FINAL TERM SOLVED PAPER BY VIRTUAL UNIVERSITY STUDENT

In an analogy between electric current and automobile traffic flow, what would correspond to charge? What would correspond to current?

Question No: 31 (Marks: 10)

(a) When can you expect a body to emit blackbody radiation?

(b) Which law is obeyed by Sun and other stars, briefly explain it.

(a) When can you expect a body to emit blackbody radiation?

Ans:

Waves are emitted when charges accelerate. Blackbody radiation occurs for exactly this reason as well. If a body is heated up, the electrons, atoms, and molecules which it contains undergo violent random motion. Light may emit by electrons in one atom and absorbed in another. Even an empty box will be filled with blackbody radiation because the sides of the box are made up of material that has charged constituents that radiate energy when they undergo acceleration during their random motion. A blackbody is both an ideal absorber and an ideal radiator. At high temperature, a body emits radiation of shorter wavelength. Temperature is inversely proportional to wavelength.

(b) Which law is obeyed by Sun and other stars, briefly explain it.

Ans:

The Sun and other stars obey Wien's Law since the gases they are composed of emit radiation that is in equilibrium with the other materials. Wien's law allows astronomers to determine the temperature of a star because the wavelength at which a star is brightest is related to its temperature.