

# Phy101 Quiz 3

1. Lenz's law is in accordance with law of conservation of  
**Energy...confirm**
2. Which of the following types of electromagnetic radiation at the greatest speed in vacuum?  
**All of these travels at the same speed....confirm**
3. Inductive reactance  $X_L$  of an inductor is  
 **$2(\pi)fL$ .... confirm**
4. Force per unit charge is:  
**Electric field intensity...confirm**
5. The sum of electric and magnetic force is called  
**Lorentz force...confirm**
6. Radio waves and light waves are \_\_\_\_\_.  
**Electromagnetic and transverse both...confirm**
7. Kirchhoff's 1st rule is the manifestation of the law of conservation of  
**Charge...confirm**
8. Kirchhoff's 2nd rule is the manifestation of the law of conservation of  
**Energy...confirm**
9. The total energy in an circuit is  $5.0 \times 10^{-6}$  J. if  $L=25\text{mH}$  the maximum current is:  
**20mA...confirm**
10. If  $I_0$  is the peak value of an AC supply, then its rms value is given as firms  
 **$I_0/\text{square root}2$ ....confirm**

11. The potential difference between the ends of a conductor is 12V. How much electrical energy is converted to other forms of energy in the conductor when 100C of charge flows through it?  
1200J...confirm
12. A particle carrying a charge of  $2e$  falls through potential difference of 3V the energy acquired by it will be:  
6 eV...confirm
13. An inductor may store energy in its:  
Magnetic field...confirm
14. The graphical representation of Ohm's law is:  
Straight line...confirm
15. Radio waves and light waves are\_\_\_\_\_  
Longitudinal waves...confirm
16. The increase in capacitance of a capacitor due to presence of dielectric is due to:  
Electric polarization
17. The Focal length of convex lens is:  
Positive...confirm
18. The AC circuit in which current and voltage are in phase the power factor is  
1...confirm
19. The wavelength of red light is 700 nm. Its frequency is\_\_\_\_\_  
 $4.29 \times 10^{14}$  hertz...confirm
21. The known laws of electromagnetism before James Clerk Maxwell were following EXCEPT  
Faraday's Law...confirm
20. When some dielectric is inserted between the plates of a capacitor, then capacitance;  
Increased....confirm
21. Which of the following is NOT the characteristics of electromagnetic waves?  
They can travel with different speeds in vacuum depending on frequency....confirm
22. If electric and gravitational force on an electron in uniform electric field balance each other, then the intensity of electric field will be:  
 $Mg/q$
23. The increase in capacitance of a
24. Electric energy is measured  
WaTT...confirm
25. When we accelerate the charge, which types of waves are produced  
Electromagnetic waves....confirm
26. A particle device transmitted a signal in the form of electromagnetic waves of frequency  $7.5 \times 10^8$ Hz. What is the wavelength of the signal.  
0.4m
27. A step-down transformer is used to:  
Decrease the voltage

27. The quantity of  $\Delta V/\Delta r$  is called  
**Potential gradient**
28. Which electromagnetic radiation transmits the highest photon energy?  
**Gamma rays...confirm**
29. The reaction of an particle at 50 Hz is 10.0 its reactance at 100Hz becomes  
**5.0**
30. Work done on a charged particle moving in uniform magnetic field is  
**Zero...confirm**
31. Select the correct statement  
**Gamma Rays have higher frequency than infrared waves...confirm**
32. Which of the following have the greatest wavelength  
**Radio waves**
33. Potentiometer can be used as  
**Potential divider...confirm**
34. All of the followings are the different types of mental images; people generally experience them while close their eyes Except:  
**Solving an algebra equations**
35. The nation that motivational state of the organism is understood and explained in terms of positive and negative environmental stimuli BEST connects to;  
**Incentive approaches**
36. If one wants to increase the capacity of short-term memory, through which process more items can be held?  
**Chunking...confirm**
37. Which physical quantity is produced by a calculation where a charge is  
**Energy...confirm**
38. The current in a car headlamp is 2.0 A. The Headlamp is switched an for 3.0  
**360 C**
39. If potential difference across two plates of a capacitor is doubled, then  
**Four times...confirm**
40. How could the unit of potential difference the volt also be written?  
**J/C**
41. If magnetic field is doubled then magnetic energy density becomes  
**Four times...confirm**
42. The primary of a 3.1 step-up transformer is connected to a source and the secondary this situation is P. If R is connected directly to the source it will dissipate a power of:  
**P/9...confirm**
43. A particle having  $2e$  charge falls through a potential difference of 5.V energy acquired by it is  
**10 eV**
44. A generator supplies 100V to the primary call of a transformer. The primary has 50 turns and the secondary has 500 turns. The secondary voltage is  
**1000V**
45. The combined effect of resistance and reactance is known as  
**Impedance...confirm**

46. A transparent refracting medium bounded by the two curved surfaces called  
Prism...confirm
47. A student rubs a rod held in his hand. Which action causes the rod to gain a large electrostatic charge  
Rubbing a polythene rod with a woolen duster...confirm
48. A charge of 30 C flows through an electric appliance in 2.0 minutes. What is the average current in the appliance?  
0.25A...confirm
51. Total flux through a closed surface depends on  
Charge and -N...confirm
49. Electromagnetic waves emitted from antenna are  
Transverse...confirm
50. Two parallel straight wires carrying current in same direction will.  
Attract each other...confirm
51. Charge carriers in electrolysis are:  
Positive and negative ions...confirm
52. Capacitive reactance  $X_C$  is  
 $1/2\pi fC$
53. The number of turns becomes double, but length remain same then magnetic field in the solenoid become  
Double...confirm
54. If velocity of a conductor moving through Magnetic field  $B$  is made zero then motional emf is  
 $-vBL$
58. The amplitude modulation frequency ranges from  
540 kHz to 1600 kHz...confirm from net
55. Average value of current and voltage over complete cycle is:  
Zero..confirm
56. A detector is used to detect the speed at a particular wave if the frequency of an electromagnetic signal is 400 MHz, the speed define the detector is  
300000 km/s
57. The product of resistance and capacitance is called  
Time...confirm
58. Greenhouse gases absorb \_\_\_ radiation  
Infrared...confirm
59. In RL series circuit phase angle is given by:  
 $\tan^{-1}(wL/ R)$ ...confirm
60. One tesla is equal to  
N/Am
61. An LC series circuit an inductance  $L$  and a capacitance  $C$  /has an oscillation frequency  $f$ . Two inductors each with inductance  $L$ , and two capacitors, each with capacitance  $C$ , are all wired in series and the circuit is completed. The oscillation frequency is:  
 $f$ ....confirm
62. Capacitance of a capacitor in vacuum is given by  
 $A\epsilon_0/d$ ....confirm
63. Force on a charged particle is zero when projected at angle with the magnetic field

0 degree....confirm

64. If an electron of charge is accelerated through a potential difference  $V$ , it will acquire energy.

$Ve$ ....confirm

65. In case of metallic conductors, the charge carriers are:

Electrons...confirm

66. Tesla is a unit of

Magnetic flux....confirm

67. When a charge is projected perpendicular to a uniform magnetic field, its path is:

Circular.....confirm

68. Electromagnetic waves do not transport

Charge....confirm

69. The concept of an electric field lines is introduced by

Faraday....confirm

70. A capacitor in an LC oscillator has a maximum potential difference of 15V and a maximum energy of 360  $\mu\text{J}$ . At a certain instant the energy in the capacitor is 40  $\mu\text{J}$ . At that instant what is the emf induced in the inductor

5V....confirm

71. The wave form of alternating voltage is a:

Sine wave....confirm

72. If velocity of a conductor moving through a magnetic field  $B$  is made zero then motional emf is:

$-vBL$ ...confirm

72. Which one of is in the order of decreasing frequency?

Ultraviolet rays, visible light, radio waves...confirm

73. The lenz's law refers to:

Induced current....confirm

74. Which of the following statements is Not true about electromagnetic waves?

The electromagnetic radiation from a burning candle is polarized...confirm

75. Phase different between  $V$  and  $I$  of on A.C through resistor is:

0 degree

76. Which of the following is equivalent to 1 V

1 J/C.....confirm

77. Which of the following is equivalent to one coulomb

One ampere second....confirm