

## Electrical Quiz 4

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61. What is the base temp for meggering?  
20 deg. C.

For every 10 degree rise in temperature, halve the IR value.

Disconnect the leads after one minute for capacitance discharging.

62. What is Faraday's law of induction?

Induced emf is directly proportional to rate change of magnetic flux.

63. Difference in energy storing by inductor and capacitor?

Magnetic field Vs Electrostatic field.

64. Lenz's law gives what?

Direction of induced current.

[65.](#) Is there any medium in which EM waves won't travel?

No. Electromagnetic waves do not require a medium to travel and these waves can travel through solids, liquids, gases, and even space, which is a vacuum and has no matter.

66. What are all the electromagnetic waves?

There are different types of waves on the electromagnetic spectrum:

- (i) Gamma rays
- (ii) X-rays
- (iii) Ultraviolet waves. (iv) Even visible light.

67. How electromagnetic waves are constituted?

As the name itself implies, electromagnetic waves are a typical combination of both electric fields as well as magnetic fields. Figuratively, an EM wave is two waves that are traveling and oscillating at right angle to each other.

68. What will be the resistance of a 230 V, 100 W bulb?

$$R = V^2/P = 230^2/100 \\ = 529 \text{ Ohms.}$$

69. What are the constituents of Edison alkali cell?

Perforated steel ribbon and nickel plates with potassium hydroxide as electrolyte and an output of 1.75 V.

70. What is electrolysis?

The dissociation of a liquid into ions upon passing a current is electrolysis. Eg. Apart from break down of nervous system and cardiac arrest, fatal accidents occur due to electrocution, it also happens due to electrolysis of blood splitting into red cells & white cells causing blood clotting resulting cardiac arrest.

71. What are ideal voltmeters?

Potentiometer and vacuum tube voltmeter.

72. What are primary cells?

Cells which can not be recharged.

Eg: Voltaic cell (Named after Volt)

Daniel cell,

Leclanchee cell,

Bunsen cell,

Fuel cell.

73. What are secondary cells?

Rechargeable.

Eg : Lead- Acid, Nickel-Cadmium, Lithium- Ion.

74. What is Foucault's current?

Foucault's Current ( eddy current) are circulating current induced within the conductors in plane perpendicular to the changing magnetic field in the conductor itself due to Faraday's law of induction.

75. Working principle wise difference between auto transformer and power transformer?

Self induction Vs Mutual induction.

76. What is the polarity of the secondary winding current in a step up transformer?

Opposite polarity.

77. What for a transformer is employed?

To obtain a suitable voltage.

78. On which factor the magnitude of the potential difference across the secondary of a transformer is independent?

Resistance of both primary and secondary winding.

[79. To](#) which law, Faraday's law of induction is related?

Law of conservation of Energy.

80. What is an AC current?

The one which periodically changes its magnitude and direction with respect to time.

81. How much is the period (T) of our AC ?

$T = 20$  millisecond.

82. Define power frequency (F)?

The number of cycles gone through by AC per second .

$F = 1/T = 1/20\text{ms} = 50\text{Hz}$ .

Or, the number of positive peaks achieved by the voltage/current waves in one second is frequency.

83. What is the mean value of the current over a complete cycle?

Zero.

84. What is RMS value?

It is square root of the average of instantaneous voltage or current values of the AC.

$I_{\text{rms}} = 0.707(I_{\text{max}})$ .

85. Which value the AC meters indicate?  
RMS Value.

86. What happens when a DC voltage applied to a capacitor?  
Blocked.

87. What is wattless power.  
Since reactive power transfers no net energy to the load, it is called wattless power.

88. Why the average power consumed in a pure inductor is zero?  
The power absorbed to magnetise the inductor in the first quarter cycle is returned back to the source in the next quarter cycle making the average power as Zero.

89. Which is the best component to limit the current in an AC circuit?  
A choke coil and a resistor can limit the current. But, the choke coil is better as there is no large power loss except hysteresis and eddy current losses.

90. What is the inductive reactance of an inductor in a DC circuit?  
Zero.

$X_L = 2(\pi) F L = 0$ , since  $F$ (frequency) is zero in DC.