

31 Lecture - PHY101

Important Subjective

What is meant by alternating current?

Answer: Alternating current is an electric current that periodically reverses direction, constantly changing its magnitude and direction.

What is the frequency of AC current in India?

Answer: The frequency of AC current in India is 50 Hz.

Define RMS value of AC current.

Answer: RMS (Root Mean Square) value of AC current is the value of the current which when passed through a resistor for a given time produces the same amount of heat as produced by the corresponding DC current when passed for the same time through the same resistor.

What is the phase difference between the voltage and current in a purely resistive circuit?

Answer: In a purely resistive circuit, the voltage and current are in phase with each other, i.e., there is no phase difference between them.

What is an inductor in an AC circuit?

Answer: An inductor is a passive electrical component that stores energy in a magnetic field when electric current flows through it in an AC circuit.

What is the reactance of a capacitor in an AC circuit?

Answer: The reactance of a capacitor in an AC circuit is given by $X_c = 1/(2\pi fC)$, where f is the frequency of the AC signal and C is the capacitance of the capacitor.

What is the power factor of a purely resistive circuit?

Answer: The power factor of a purely resistive circuit is unity or 1.

What is meant by the resonance frequency of an AC circuit?

Answer: The resonance frequency of an AC circuit is the frequency at which the circuit offers maximum impedance to the flow of current.

What is the phase difference between the voltage and current in an inductive circuit?

Answer: In an inductive circuit, the current lags behind the voltage by 90 degrees.

What is an LC circuit?

Answer: An LC circuit is a resonant circuit consisting of an inductor (L) and a capacitor (C) connected together. It can store electrical energy oscillating at its resonant frequency.