ALTERNATING CURRENT

Test Paper-I

MAX MARKS: 30 **TIME: 90Mts**

Sl. No.	QUESTION	ANSWER PAGE	MARKS
1	What is an alternating voltage? Give an equation to represent the same.	Page:233	2
2	Explain how a resistor responds to an alternating voltage with relevant equations. Give the graphical representations of current and voltage across the resistor.	Page:234	3
3	Define mean value of current and derive the relation between the peak value of current and mean value of current. What is the value of average power consumed in a complete cycle?	Page:235	3
4	Define the rms value of current. Derive the relation between the peak value and rms value of current.	Page:236	3
5	A light bulb is rated at 100 W for a 220 V supply. Find (a) the resistance of the bulb ; (b) the peak voltage of the source; and (c) the rms current through the bulb.	Page:236	3
6	What is a phasor? Give the phasor diagram showing the voltage and current phasors and their relationship at time t in case of an ac source connected to a resistor.	Page:237	3
7	Explain how an inductor responds to an alternating voltage with relevant equations. Give the phasor diagram for the same.	Page:238	3
8	Show that the average power through an ac circuit consisting of inductor over one complete cycle is zero.	Page:239	2
9	A pure inductor of 25 mH is connected to a source of 220 V. Find the inductive reactance and rms current in the circuit if the frequency of the source is 50 Hz.	Page:239	2
10	Give the formula to find the reactance due to an inductor. What is the function of reactance in a circuit? What is the relationship between the current and voltage when alternating current is allowed to flow through an ac circuit? Explain	Page:240	3
11	Explain what happens to ac current when it is allowed to flow through a circuit consisting of a capacitor. What is the phase relationship between the current and voltage?	Page:241	3