Q.3	**(a)**	Give a list of safety devices used for home appliances.	**03**
	(b)	Give a comparison between squirrel cage induction motor and wound rotor induction motor.	**04**
	(c)	Derive the equations of capacitor voltage and circuit current in a series R-C circuit connected to a DC supply through a switch. Assume that switch is initially open and it is closed at time t=0 second.	**07**
Q.4	**(a)**	Discuss the difference between MCB and Fuse.	**03**
	(b)	Why the consumers should improve their power factor?	**04**
	(c)	Explain Thevenin's theorem. Take suitable example and explain the steps to apply Thevenin's theorem for a resistive circuit with a constant DC voltage source.	**07**

OR

Q.4	**(a)**	What is MCCB? Where is it used?	**03**
	(b)	Compute the monthly energy charges for an air conditioner having consumption of 2 kW. Daily usage of the air conditioner is 10 hours. Energy charges are Rs 8 per unit.	**04**
	(c)	Explain the term power factor. Explain the steps to obtain power factor of an AC circuit with parallel connection of R, L and C elements.	**07**
Q.5	**(a)**	Describe the stator construction of a single phase induction motor.	**03**
	(b)	Write a short note on Miniature Circuit Breaker (MCB)	**04**
	(c)	Explain the term rotating magnetic field with proper diagrams in case of a three phase induction motor.	**07**

OR

Q.5	**(a)**	Describe the construction of rotor for a slip ring type three phase induction motor.	**03**
	(b)	Write a short note on Earth Leakage Circuit Breaker (ELCB).	**04**
	(c)	Explain the working principles of a synchronous generator and a synchronous motor.	**07**

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