BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)
B. Tech. Sem - I Electronics & Communication : WINTER- 2022
SUBJECT : ELECTRICAL TECHNOLOGY

Day : Monday | Time : 10:00 AM-01:00 PM
Date : 16-01-2023 | **W-24086-2022** | Max. Marks : 60

N.B.
1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.

Q.1	**a)**	Explain star-to-delta transformation with neat diagram.	**(05)**
	b)	What are the Kirchhoff's voltage and current laws?	**(05)**
		OR	
Q.1	**a)**	Explain Thevenin's theorem with proper circuit.	**(05)**
	b)	Describe superposition theorem with neat diagram.	**(05)**
Q.2	**a)**	Describe average and effective value for sinusoidal waveform.	**(05)**
	b)	Elaborate phasor representation of sinusoidally varying voltage and currents.	**(05)**
		OR	
Q.2	**a)**	Analyse series R-L-C circuit with phasor diagram.	**(05)**
	b)	What is power factor in AC circuit? Explain.	**(05)**
Q.3	**a)**	Describe B-H curve with proper diagram.	**(05)**
	b)	Describe principle and operation of single phase transformer.	**(05)**
		OR	
Q.3	**a)**	What are hysteresis and eddy current losses?	**(05)**
	b)	How to determine efficiency and regulation by direct load test?	**(05)**
Q.4	**a)**	Explain principle of electro-mechanical energy conversion.	**(05)**
	b)	Describe slip-torque characteristics with proper diagram.	**(05)**
		OR	
Q.4	**a)**	What are different types of DC machines?	**(05)**
	b)	Explain principle and operation of 3-phase induction motor.	**(05)**
Q.5	**a)**	How to take care and maintenance of lead-acid batteries ?	**(05)**
	b)	Explain series and parallel connection of batteries.	**(05)**
		OR	
Q.5	**a)**	Write in brief about maintenance free batteries.	**(05)**
	b)	Elaborate solar cells and solar panels.	**(05)**
Q.6	**a)**	How to obtain ABCD parameters?	**(05)**
	b)	Explain interconnections between two port parameters.	**(05)**
		OR	
Q.6	**a)**	Explain condition of reciprocity and symmetry in two port networks.	**(05)**
	b)	Describe H-parameters in two port networks.	**(05)**

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