Q.P. Code: 20EE0250 **R20**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year I Semester Regular & Supplementary Examinations March-2023

PRINCIPLES OF ELECTRICAL ENGINEERING

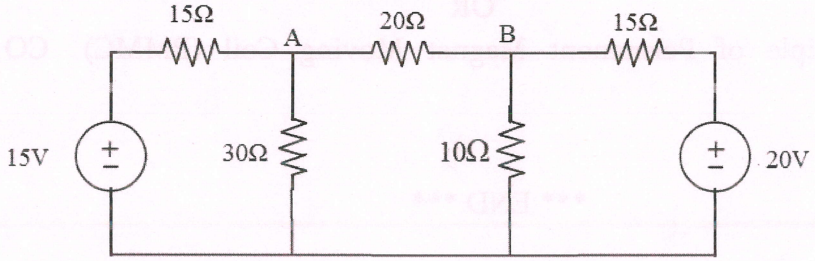
(Common to CSE,CSIT, CSM, CIC, CAD, CCC & CAI)

Time: 3 hours Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

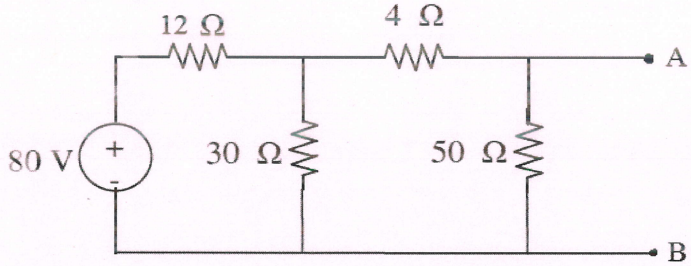
UNIT-I

1	a	State and Explain about the ohm's law.	CO 1	L1	6M
	b	Determine the current in branch A-B by using KVL.	CO 1	L4	6M



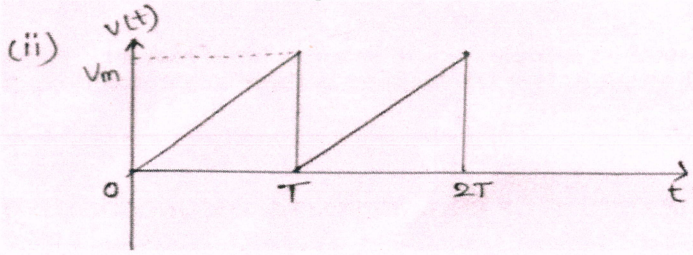
OR

2	a	State and explain Thevenin's theorem.	CO 1	L1	6M
	b	Find the Thevenin's equivalent for the circuit shown below	CO2	L4	6M



UNIT-II

3	a	Derive an expression for RMS value of sine wave form.	CO 3	L2	6M
	b	Find the RMS value for the following waveform	CO 3	L3	6M



OR

4	a	Derive an expression for the current and impedance for a series RL circuit excited by a Sinusoidal alternating voltage. Draw the phasor diagrams.	CO 3	L3	6M
	b	A series circuit consisting of a 10Ω resistor, a 100μF capacitor and a 10 mH inductor is driven by a 50 Hz a.c. voltage source of maximum value 100 volts. Calculate the equivalent impedance, Current in the circuit and the phase angle.	CO 3	L2	6M

UNIT-III

5	Explain the Constructional details of DC machine with neat sketch.	CO 4	L1	12M
	OR			
6	What are the different types of DC Motors? Explain in detail.	CO 4	L1	12M
	UNIT-IV			
7	Explain the Working principle of single phase transformer.	CO 5	L2	12M
	OR			
8	Define voltage regulation of an alternator. Explain procedure to determine voltage regulation by Synchronous Impedance Method.	CO 5	L4	12M
	UNIT-V			
9	a Classify different types of measuring instruments.	CO 6	L1	6M
	b Explain operating principles of Moving Iron and PMMC instruments	CO 6	L2	6M
	OR			
10	Explain operating principle of Permanent Magnet Moving Coil (PMMC) instruments.	CO 6	L2	12M

*** END ***