O.P.Code: 20EE0250	R20	H.T.No.									

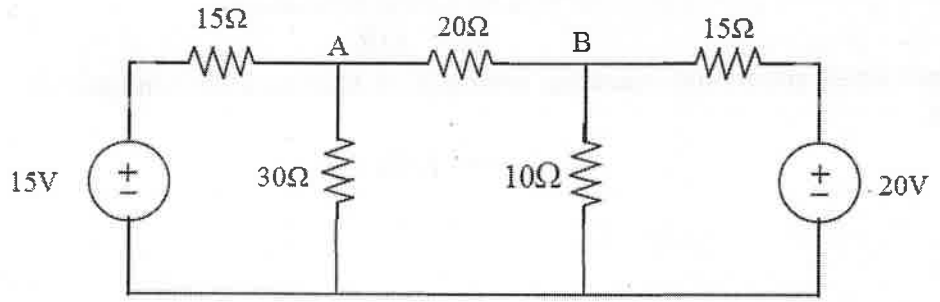
SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Supplementary Examinations February-2024
PRINCIPLES OF ELECTRICAL ENGINEERING
(Common to CSE, CSIT, CSM, CIC, CAD, CCC & CAI)

Time: 3 Hours **Max. Marks: 60**

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

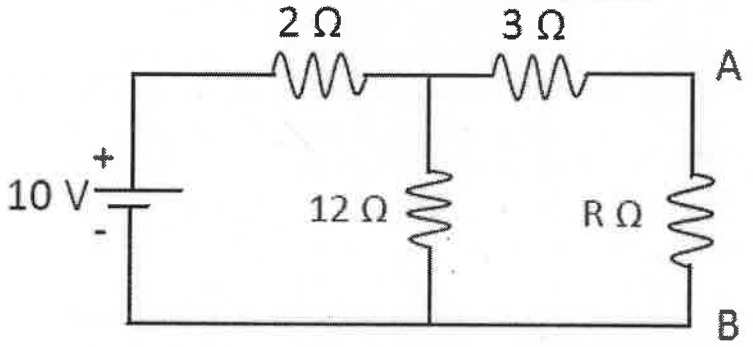
UNIT-I

1	a	State and Explain about the ohm's law.	CO1	L1	6M
	b	Determine the current in branch A-B by using KVL.	CO1	L2	6M



OR

2	a	State and Prove Maximum Power Transfer Theorem.	CO1	L2	6M
	b	Draw the Norton's equivalent circuit for the circuit shown in figure.	CO1	L2	6M



UNIT-II

3	a	Define active power, apparent power, and reactive power.	CO3	L2	6M
	b	The impedances of series circuit are Z1= (6+j8) ohms and Z2 = (8-j6) ohms. If the applied voltage is 120V, find total impedance, current and power factor. Draw the phasor diagram.	CO3	L3	6M

OR

4	a	Derive an expression for the current and impedance for a series RL circuit excited by a Sinusoidally alternating voltage. Draw the phasor diagrams.	CO3	L2	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.	CO3	L3	6M

UNIT-III

5	Explain the Constructional details of DC machine with neat sketch.	CO4	L2	12M
	OR			
6	What are the different types of DC. motors. Explain in detail.	CO4	L2	12M

UNIT-IV

7	Explain the Working principle of single phase transformer.	CO5	L2	12M
	OR			
8	Define voltage regulation of an alternator. Explain procedure to determine voltage regulation by Synchronous Impedance Method.	CO5	L3	12M

UNIT-V

9	Explain operating principle of Moving Iron (MI) instruments.	CO6	L2	12M
	OR			
10	Explain construction and operating principle of Moving Coil Ammeter in detail.	CO6	L2	12M

***** END *****