	Reg. No.:	
	Name :	

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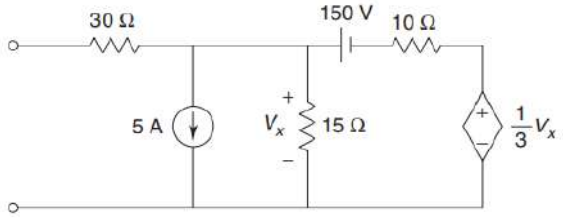
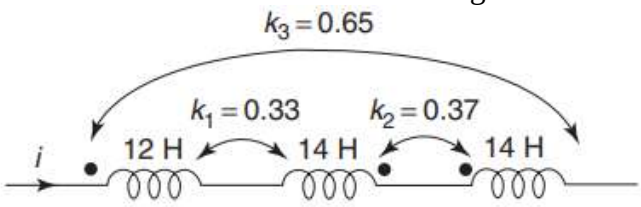
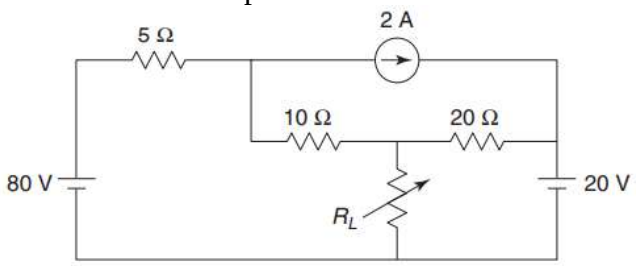
TERM END EXAMINATIONS (TEE) – December 2021- January 2022

Programme	:	**B-Tech (BAC, BAI, BAS, BCG, BHI, BMR, BOE, BSA)**	Semester	:	**Fall 2021-22**
Course Name	:	**Electric Circuits and Systems**	Code	:	**EEE1001**
Faculty Name	:	**Dr. Abhay Vidyarthi**	Slot/ Class No.	:	**E11+E12+E13/0053**
Time	:	**1 ½ hours**	Max. Marks	:	**50**

Answer ALL the Questions

Q. No.		Question Description	Marks
		PART - A (30 Marks)	
1	(a)	Obtain the Thevenin equivalent network for the circuit shown in Fig.1  Fig.1	10
		OR	
	(b)	Find the equivalent inductance of the network shown in Fig. 2  Fig. 2	10
2	(a)	Explain the working of a single phase transformer with the help of a neat sketch.	10
		OR	
	(b)	With the help of a neat sketch, explain the working of any two: I. BJT and its $V-I$ Characteristics II. PN Diode and its $V-I$ Characteristics III. Full wave Rectifiers IV. Modes of operation of SCR V. Depletion-type MOSFET	10
3	(a)	Write the truth table of Full Subtractor and Half adders and how to design a Full Subtractor using two Half Adders and an OR gate.	10

		OR	
	(b)	Explain the working of 3-bit ripple down-counter with the help of *T* flip-flop	10
PART - B (20 Marks)			
4		Find the value of resistance *RL* as shown in Fig. 3 so as to deliver the maximum power transfer and also calculate the maximum power.  Fig.3	10
5		Explain the significance of threshold voltage in case of N Channel Enhancement MOSFET. What happens to the current which is flowing from drain to the source if the drain to source voltage crosses the saturation voltage level? Explain the working of N Channel Enhancement MOSFET with the help of a neat sketch.	10
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