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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 <p style="text-align: center;">Fig.1</p>	10
OR		
	(b) Find the equivalent inductance of the network shown in Fig. 2 <p style="text-align: center;">Fig. 2</p>	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: <ol style="list-style-type: none"> BJT and its $V - I$ Characteristics PN Diode and its $V - I$ Characteristics Full wave Rectifiers Modes of operation of SCR 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	<p>Find the value of resistance R_L as shown in Fig. 3 so as to deliver the maximum power transfer and also calculate the maximum power.</p> <div style="text-align: center;"> </div> <p style="text-align: center;">Fig.3</p>	10
5	<p>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.</p>	10
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