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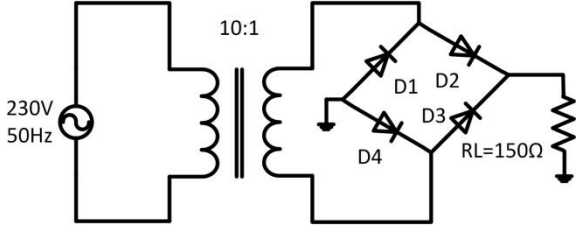
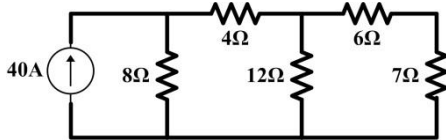
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TERM END EXAMINATIONS (TEE) – December 2021- January 2022

Programme	B.Tech [BAC,BAI,BAS,BCE,BCG, BEC,BHI,BME,BMR,BOE,BSA]	Semester	Fall 2021-22
Course Name	Electric Circuits and Systems	Course Code	EEE1001
Faculty Name	Dr. Baldev Swamy	Slot / Class No	B21+B22+B23/0082
Time	1½ hours	Max. Marks	50

Answer ALL the Questions

Q. No.	Question Description	Marks	Module No.	RBT Level	CO
PART - A (30 Marks)					
1	(a) Solve the given electric network circuit shown in below Fig. 1 by using mesh analysis to find the given currents I_1, I_2, I_3 and I_4 ? <div style="text-align: center;"> <p>Fig. 1</p> </div>	10	1 st Module	KL4	CO1
OR					
	(b) In the given below Fig. 2, switch was closed since a long time before opening at $t = 0$, Find V_x at $t = 0^+$? <div style="text-align: center;"> <p>Fig. 2</p> </div>	10	2 nd Module	KL4	CO2
2	(a) Calculate the speed of the motor and the output horse power. A four-pole 220 V dc series motor has 240 slots in the armature and each slot has six conductors. The armature winding is wave connected. The flux per pole is 1.75×10^{-2} Wb when the motor takes 80A. The field resistance is 0.05Ω and the armature resistance is 0.1Ω . The iron and friction losses 440W.	10	3 rd Module	KL5	CO3

OR						
	(b)	Find the DC output voltage, rectification efficiency and output frequency in the given bridge rectifier, the diodes are assumed to be ideal shown in below Fig. 3.	10	First half of 4 th Module	KL4	CO4
 <p style="text-align: center;">Fig. 3</p>						
3	(a)	Analyse the device that has built in feature to turn ON or OFF and its switching is controlled by biasing conditions and GATE input terminal. Also analyse its various mode of operations.	10	Second half of 4 th Module	KL2	CO4
OR						
	(b)	Implement the XOR logic gate by using 2:1 Mux with truth table	10	5 th Module	KL3	CO5
PART - B (20 Marks)						
4		Find the current flowing through the 7Ω resistor using Nortons Theorem and also find the Norton resistance R_N shown in below Fig. 4 .	10	1 st Module	KL4	CO1
 <p style="text-align: center;">Fig. 4</p>						
5		Implement and explain a Full-Subtractor with two half-subtractors and an OR gate.	10	5 th Module	KL4	CO5
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Note:

The above given Module Numbers will be followed strictly and this pattern is applicable for the courses with 5 modules.

Mostly 10 Marks questions will be asked; however, some sub-divisions with minimum 3 marks are also allowed.

If there are more than 5 modules in a particular course, then

Q. No. 1 (a) and (b) – First 40% of Modules/ Portion (Either Or Type),

Q. No. 2 (a) and (b) – Next 30% of Modules/ Portion (Either Or Type),

Q. No. 3 (a) and (b) – Last 30% of Modules/ Portion (Either Or Type),

Q. No. 4 - First 60% of Modules/ Portion (Compulsory Question without any choices),

Q. No. 5 – Last 40% of Modules/ Portion (Compulsory Question without any choices)

RBT – Revised Bloom’s Taxonomy

KL1 – Remember, KL2-Understand, KL3-Apply, KL4-Analyse, KL5-Evaluate, KL6-Create

CO – Course Outcome