

Reg. No.:

Name :

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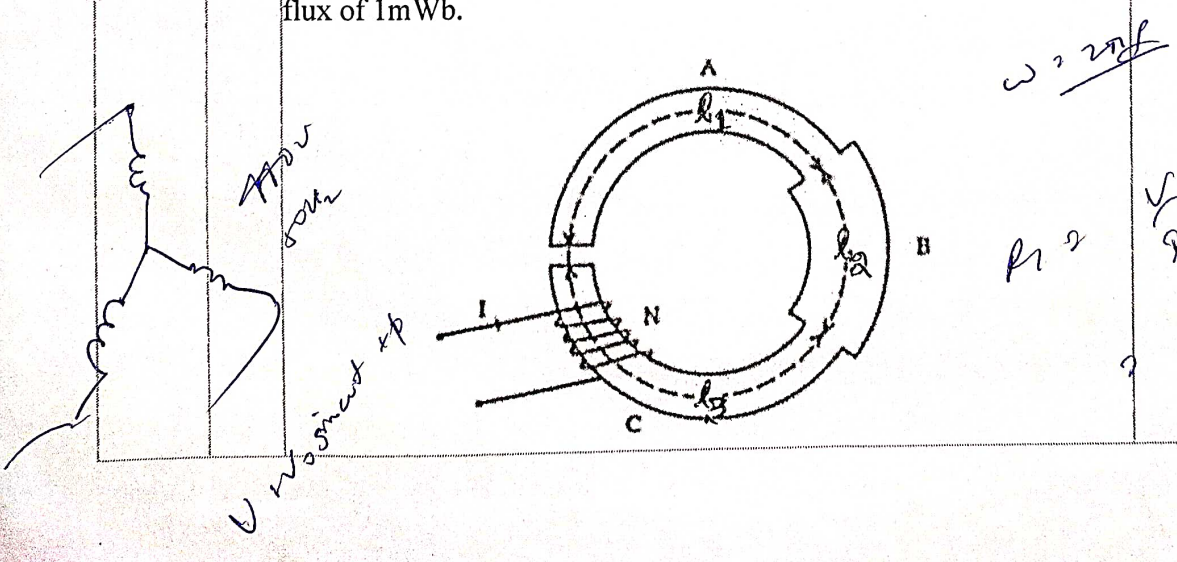
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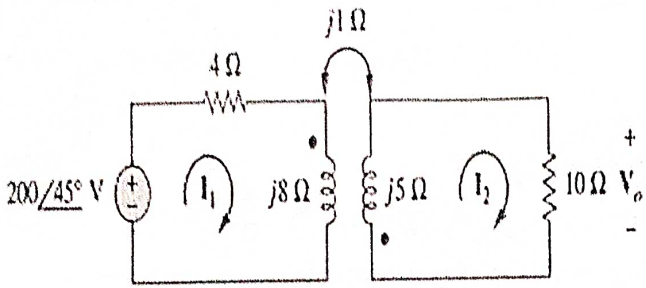
Continuous Assessment Test - II (CAT 2) – December 2022

Programme	: B.Tech (CSE)	Semester	: Winter 2022-23
Course	: Basic Electrical and Electronics Engineering	Code	: BEEE102L
		Class Number	: CH2022231700813, CH2022231700363, CH2022231700587, CH2022231700973, CH2022231700585, CH2022231700581
		Slot	: F1+TF1
Faculty	: Dr.L.Premalatha, Prof.M.Krithika@AnbuDevi, Prof.R.Srinivasan, Prof.Manish Kumar Dwivedi, Prof.Richa Dubey, Prof.M.M.Sravani	Max. Marks	: 50
Time	: 90 minutes		

Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks	Unit No.	Level	Hot ?	Criteria
1.		Three coils are connected in star to a balanced three-phase, 3-wire, 440 V, 50 Hz supply and takes a line current of 10 A at 0.9 power factor lagging. (a). Calculate the resistance and reactance of the coils assuming they are series connected in each phase. (b). If the coils are delta connected to the same supply, calculate the line current and the real power.	10	2	M	N	2
2		A circular ring is made of different materials A, B and C with lengths $l_1=25$ cm, $l_2=15$ cm and $l_3 = 25$ cm. The cross-sectional area and relative permeability of A, B and C are 6cm^2 , 8cm^2 , 6cm^2 and $\mu_{r1}=6000$, $\mu_{r2}=8000$, $\mu_{r3}= 6000$ respectively. Cross-sectional area and length of air gap are 6cm^2 and 2mm respectively. Find the value of exciting current 'I' if number of turns (N) = 1000 turns, to setup a flux of 1mWb.	10	3	H	Y	3



3	<p>Determine the voltage 'V_o' in the given magnetically coupled circuit, using mesh analysis technique.</p> 	10	3	H	N	3
4	<p>For the following Boolean function $F(a,b,c,d) = \sum m(2,3,12,13,14,15)$.</p> <p>(a). Write the truth table, Boolean expression and draw the logic diagram using common gates. (5 marks)</p> <p>(b). Simplify the given function using K map and write the simplified Boolean expression. (5 marks)</p> <p>(c). Draw the logic diagram for the simplified Boolean expression using common gates. (5 marks)</p> <p>(d). Draw the logic diagram for the simplified Boolean expression using only NAND gates. (5 marks)</p>	20	6	H	Y	3

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