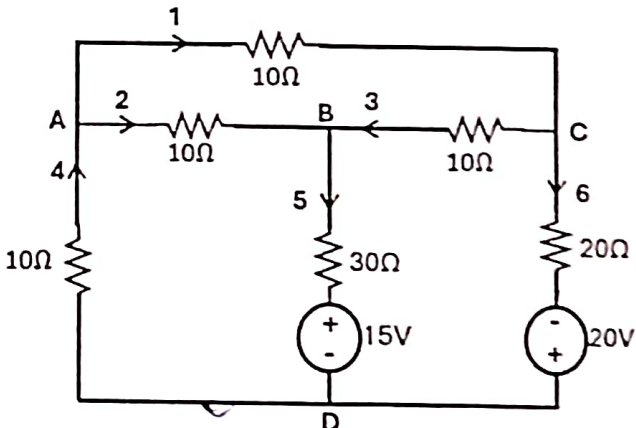
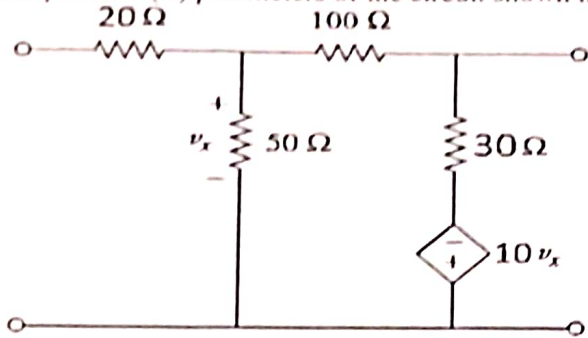
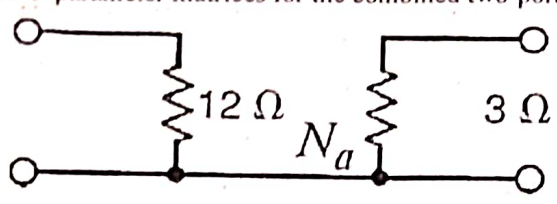
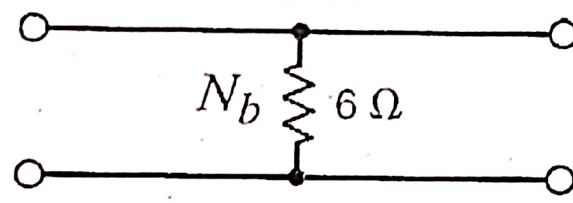


Reg. No.:		29BLC1198	
Name :		P. N. Megaraj	
 VIT[®] CHENNAI Vellore Institute of Technology Established in 1984, Accredited by AICTE, ISO 9001:2015			
Continuous Assessment Test – II – March 2025			
Programme	: B.Tech (ECE/ECM/VLSI)	Semester	: WS 2024-25
Course	: Circuit Theory	Code	: BECE203L
		Slot	: D2-TD2-TDD2
Faculty	: Dr.A.Sivasubramanian Dr.Anith Nelleri Dr.Niraj Kumar Dr.G.Gugapriya Dr.M.Saranya Nair Dr.Saurav Gupta Dr.Ashis Tripathy	Class Nbr(s)	: CH2024250502890 CH2024250502891 CH2024250502892 CH2024250502893 CH2024250502894 CH2024250502895 CH2024250502896
Time	: 90 Minutes	Max. Marks	: 50
General Instructions: • Write only your registration number on the question paper in the box provided and do not write other information. • Use statistical tables supplied from the exam cell as necessary • Use graph sheets supplied from the exam cell as necessary • Only non-programmable calculator without storage is permitted			

Answer ALL the questions

Q.No.	Sub. Sec.	Question Description	Marks	BT Level
1		For the circuit shown in Fig. 1. (a) Write the incidence matrix. [3 Marks] (b) Use twigs (2,3,5) to form a tree and write its cut set matrix. [5 Marks] (c) Use equilibrium equation to find their node voltage, branch voltage and branch currents. [7 Marks]  Fig.1	[15]	4

2	Calculate the impedance (Z) parameters of the circuit shown in Fig.2.  Fig.2	[10]	3
3	Consider the two two-port networks, N_a and N_b shown in Fig. 3(a) and 3(b), respectively. Assuming that these circuits are connected in series, determine the Z-parameter and Y-parameter matrices for the combined two-port network.  Fig. 3(a)  Fig. 3(b)	[10]	3
4	(a) Design a series RLC type bandpass filter with cutoff frequencies of 20 kHz and 22 kHz. Assuming $C = 60 \text{ pF}$, find R, L, and Q. [7 Marks] (b) Draw the circuit diagram to use above filter as band-stop filter? [3 Marks]	[10]	4
5	Design a T- pad attenuator to give an attenuation of 30 dB and to work in a line of $3 \text{ k}\Omega$ impedance.	[5]	3
Total Marks		[50]	

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