DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Examination – Summer 2022

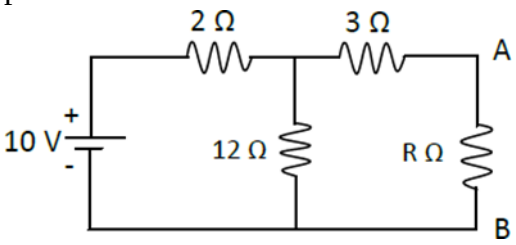
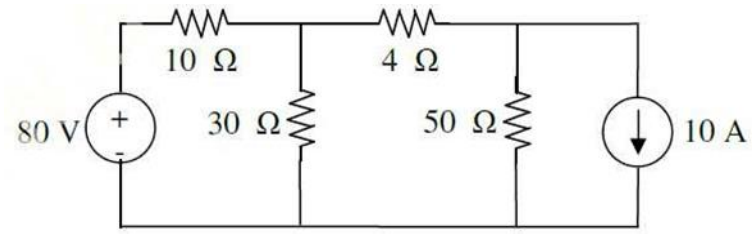
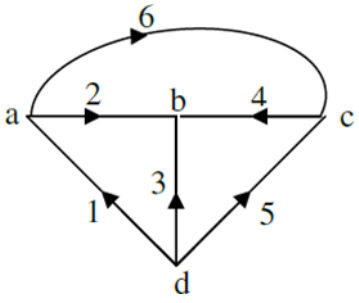
Course: B. Tech. **Branch :Electrical Engineering** **Semester :III**

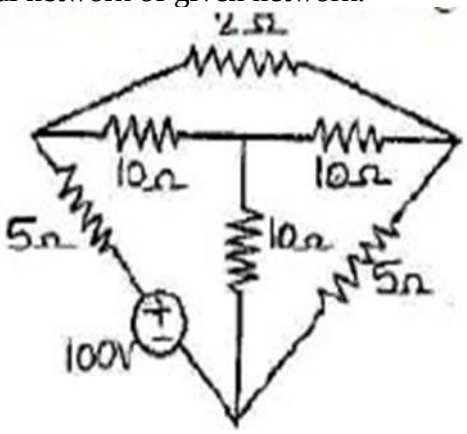
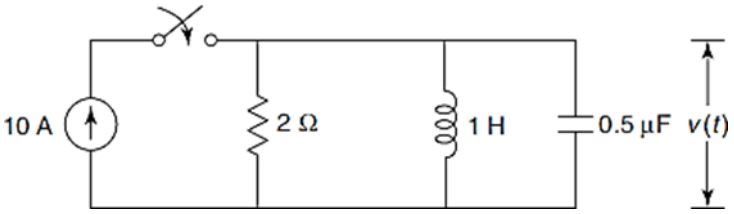
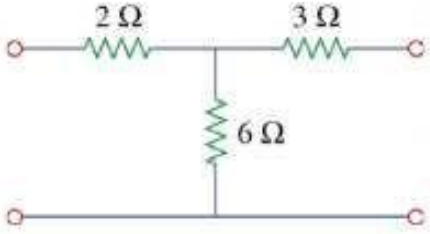
Subject Code & Name: Network Analysis and Synthesis (BTEEC302)

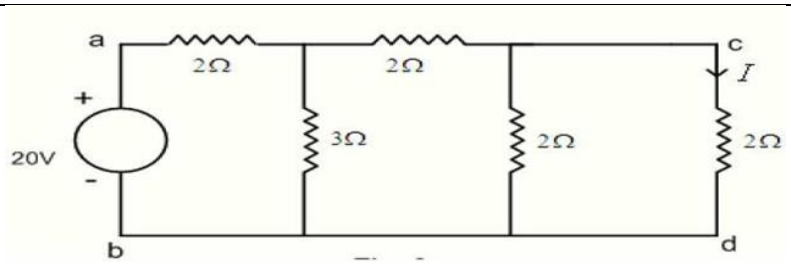
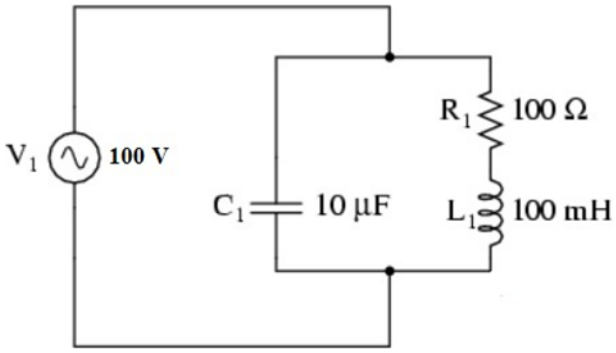
Max Marks: 60 **Date:** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.** *(This is just a sample instruction)*		
A)	Find the maximum power delivered to the load by using maximum power transfer theorem for the following circuit. 	**(CO2)**	**6**
B)	Verify Superposition theorem for 4Ω resistor for the following circuit. 	**(CO2)**	**6**
C)	Explain the following terms: i) Independent and Dependent sources **ii)** Lumped and Distributed Systems	**(CO1)**	**6**
Q.2	**Solve Any Two of the following.** *(This is just a sample instruction)*		
A)	Explain Dot convention with suitable example	**(CO2)**	**6**
B)	For the graph shown below find incidence and cut set matrices 	**(CO2)**	**6**
C)	Explain the concept of Super-mesh and Super-node with one suitable example for each.	**(CO2)**	**6**

Q. 3	**Solve Any Two of the following.** *(This is just a sample instruction)*		
A)	Explain the complete response of source free series RLC Circuits	**(CO4)**	**6**
B)	Draw the dual network of given network. 	**(CO2)**	**6**
C)	For the network shown in Fig., the switch is closed at t = 0, determine v, dv/dt, andd^2v/d^2t at t = 0+. 	**(CO2)**	**6**
Q.4	**Solve Any Two of the following.** *(This is just a sample instruction)*		
A)	Find the ABCD parameters for the following circuit. 	**(CO2)**	**6**
B)	What is a filter? Explain about various types of filters.		**6**
C)	A series RLC circuit with R = 2 ohm, L = 1 H and C = 0.5 Farad with the applied voltage V (t) = sint. Find i(t) if the switch is closed at t= 0. Use Laplace transform method.	**(CO2, CO3)**	**6**
Q. 5	**Solve Any Two of the following.** *(This is just a sample instruction)*		
A)	Verify the reciprocity theorem for the network shown in fig	**(CO2)**	**6**

			
B)	Write the property of laplace transform 1) Unit impulse 2) Unit step and 3) Unit ramp function	**(CO3)**	**6**
C)	In a parallel Resonant circuit shown in figure find 1) The Resonant frequency 2) Bandwidth 3) Q-factor 	**(CO4)**	**6**
	***** End *****		

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