



**B.Tech III Semester Supplementary Examinations, July 2024**

**NETWORK ANALYSIS  
(ECE)**

**Maximum Marks: 70**

Date: 31.07.2024 Duration: 3 hours

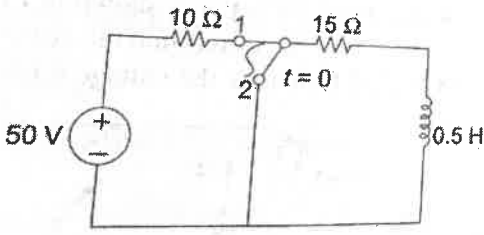
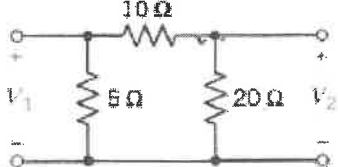
- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

**Part-A**

All the following questions carry equal marks		(10X2M=20 Marks)	CO	Bloom Tx
1	Define self-induced emf.		1	L1
2	Define Graph.		1	L1
3	Write about Initial conditions?		2	L1
4	Define time constant.		2	L1
5	Define Forced response?		3	L1
6	Write the transient conditions for the inductor?		3	L1
7	Write the transient conditions for the capacitor?		4	L1
8	Define Quality Factor.		4	L1
9	Define Damping Ratio.		5	L1
10	Define Characteristic Impedance.		5	L1

**Part-B**

Answer All the following questions.		(5X10M=50Marks)		
11	Define coefficient of coupling and derive the formula. [10M]		1	L2
OR				
12	Define tieset matrix, cutset matrix and find the tieset matrix and cutset matrix for the circuit shown. [10M]		1	L2
13	Derive the expression for voltage $v(t)$ in RC circuit with source. [10M]		2	L2
OR				
14	Derive the expression for current $i(t)$ in RL circuit with source. [10M]		2	L2

15	find current $i(t)$ when switch is moved from 1 to 2. [10M]	3	L2
			
OR			
16	Determine the inter-relationship between ABCD parameters and Z parameters. [10M]	3	L2
17	Derive the condition for Reciprocity and symmetry in a two port Z- parameter representation. [10M]	4	L2
OR			
18	In the given network as shown in Fig. Find Y – parameters [10M]	4	L2
			
19	Explain the classifications of filters in detail. [10M]	5	L2
OR			
20	Explain T-network and $\pi$ network. [10M]	5	L2