



B.Tech III Semester Supplementary Examinations, July 2024

**NETWORK ANALYSIS
(ECE)**

Maximum Marks: 70

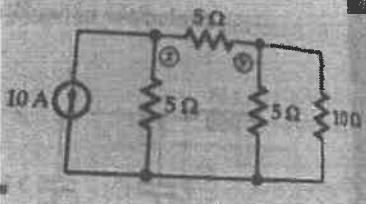
Date:27.07.2024 Duration: 3 hours

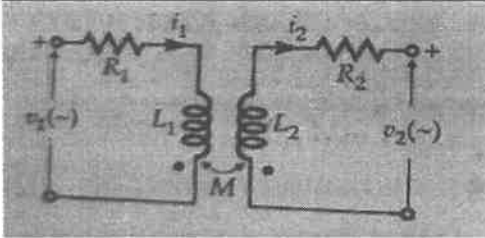
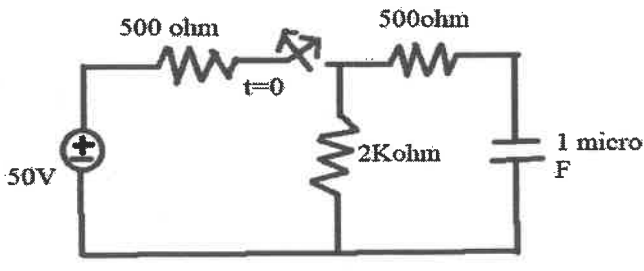
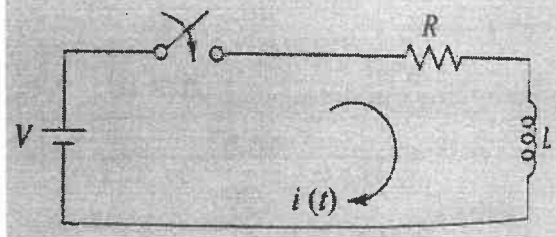
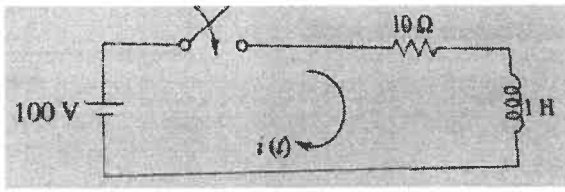
- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub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

Part-A

All the following questions carry equal marks		(10X2M=20 Marks)	CO	Bloom Tx
1	Explain Basic cut set matrix.		1	L2
2	Explain the relation between link and branches		1	L2
3	Explain Transient response		2	L1
4	Explain the following terms time constant		2	L1
5	Explain initial conditions for the inductor.		3	L1
6	Explain procedure for evaluating final conditions		3	L2
7	Define driving point functions		4	L2
8	Define current transfer function and transfer impedance function		4	L2
9	Explain low pass filter		5	L3
10	Explain composite filter		5	L3

Part-B

Answer All the following questions.		(5X10M=50Marks)		
11	Obtain equilibrium equation using nodal equations for the network shown in fig. Also find node voltage at X and Y. (10M)		1	L1
				
OR				
12	Fig represents a coupled coil circuit where $L_1=20\text{mH}$, $L_2=50\text{mH}$. If the coefficient of mutual induction is 0.8, Find the Value of mutual induction and write down the mesh equations in time domain.		1	L1

		(10M)		
13	Find $V(0^-)$, $V_c(t)$, $i(0^+)$	(10M)	2	L2
				
	OR			
14	In the given circuit as shown in fig. Find the expression for the current $i(t)$, voltage across resistor (V_R) and voltage across inductor (V_L)	(10M)	2	L2
				
15	In the network of Fig. the switch is closed at $t=0$. With the inductor uncharged, find value for I , di/dt and d^2i/dt^2 at $t=0$.	(10M)	3	L5
				
	Fig. RL circuit			
	OR			
16	Derive the Convolution integral of laplace transform	(10M)	3	L4
17	Determine the interrelationship between ABCD parameters and Z parameters	(10M)	4	L5
	OR			
18	In the given network as shown in Fig. Find Z - parameters	(10M)	4	L1

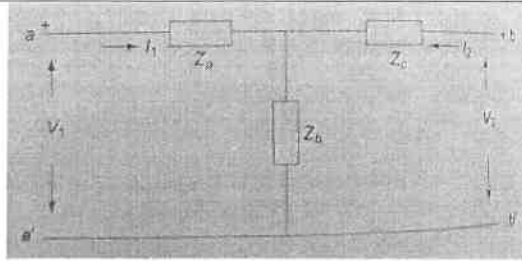


Fig. Network

19	Design a m- derived high pass filter.	(10M)	5	L2
	OR			
20	Design a constant K – low pass filter.	(10M)	5	L2

