R17 Regulation *Subject code:1P3DE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

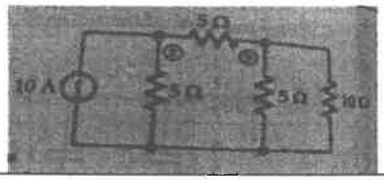
B.Tech III Semester Supplementary Examinations, July 2024

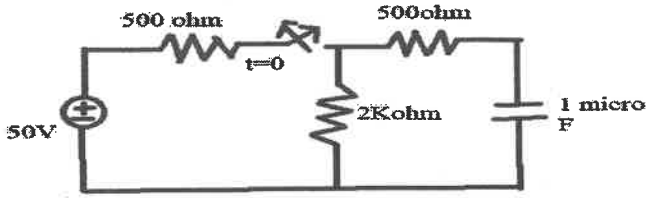
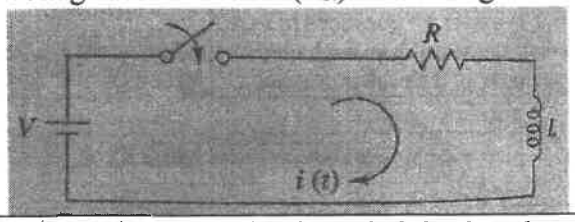
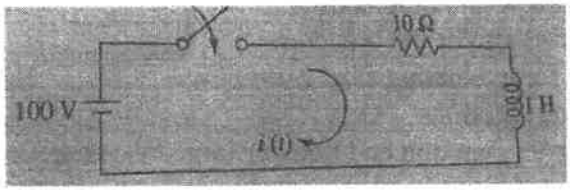
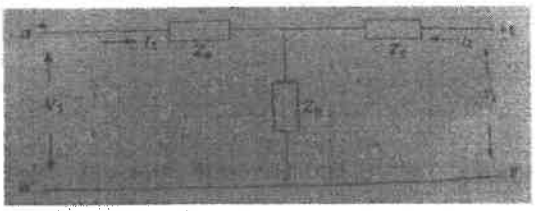
NETWORK ANALYSIS

(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=20mH, L_2=50mH.If the coefficient of mutual induction is 0.8.Find the Value of mutual induction. (10M)	1	L1
13	Explain the procedure for the formation of Tie-set matrix.(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)  Fig. RL circuit	3	L5
	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)  Fig. Network	4	L1
19	Design a m- derived high pass filter. (10M)	5	L2
	OR		
20	Design a constant K – low pass filter. (10M)	5	L2