R22 Regulation *Subject code: 4E3DC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

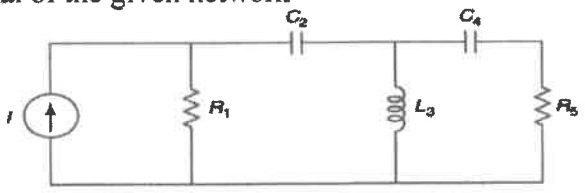
B.Tech III Semester Regular/Supplementary Examinations, December 2024

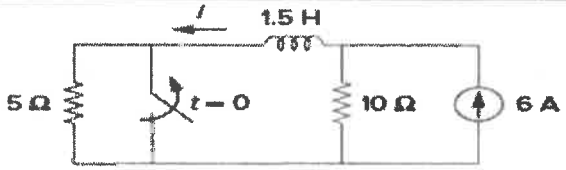
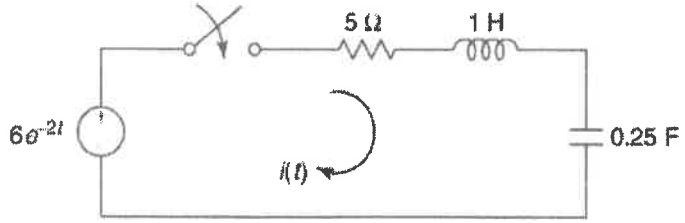
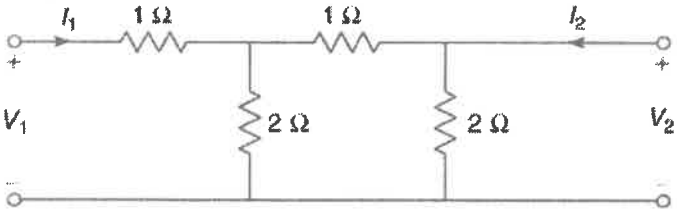
Network Theory

(ELECTRONICS & COMMUNICATION ENGINEERING)

Maximum Marks: 60 Date:06.12.2024 Duration: 3 hours

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

	Part-A	CO	Bloom Tx
All the following questions carry equal marks	(10X1M=10 Marks)		
1.a)	Define Graph.	1	1
b)	Define Basic Tie set.	1	1
c)	Define the time constant of RL circuit.	2	1
d)	Define transient responses. Give one example	2	1
e)	State the Laplace transform of ramp function.	3	1
f)	State the Laplace transform of impulse function.	3	1
g)	Define impedance parameters.	4	1
h)	Define Hybrid parameters.	4	1
i)	What is high pass filter?	5	1
j)	Define propagation constant.	5	1
	Part-B		
Answer All the following questions.	(5X10M=50Marks)	CO	Bloom Tx
2	Explain the steps to obtain Basic Cut set in detail. [10M]	1	3
	OR		
3	Develop the dual of the given network [10M] 	1	3
4	Illustrate an expression for current response of RL series circuit transients. [10M]	2	3
	OR		
5	The switch in Figure below has been closed for a long time it opens at t= 0 solve i(t) for t>0 [10M]	2	3

			
6	For the network shown in figure below the switch is closed at t = 0. Determine the current i(t) by Laplace transform Approach Assuming Zero initial conditions [10M] 	3	3
	OR		
7	Solve the inverse Laplace transform of function $H(s) = \frac{4}{(s+1)(s+3)}$ [10M]	3	3
8	Determine y - parameters of the circuit shown in below [10M] 	4	3
	OR		
9	Compare the relation between z and h parameters? [10M]	4	5
10	Summarize briefly about single tuned filters. [10M]	5	5
	OR		
11	Compare different types of filters with neat sketches along with their advantages. [10M]	5	5