



B.Tech II Semester Supplementary Examinations, January 2024
Network Analysis
 (Electrical & Electronics Engineering)

Maximum Marks: 60

Date: 23.01.2024 Duration: 3 hours

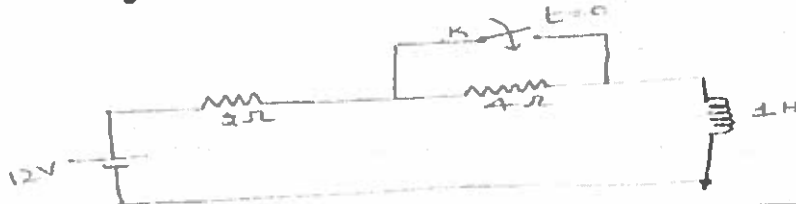
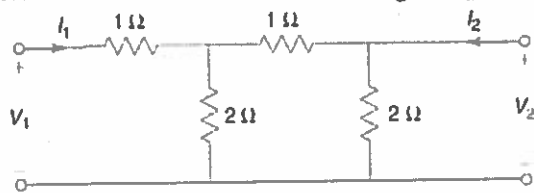
- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x1M=10 Marks)			CO	Bloom Tx
1.	a	Define the passive and active components.	CO1	L1
	b	How the capacitor will behave when connected to a D.C source.	CO1	L2
	c	A 0.2H inductor with an initial current of 4A is in parallel with a resistance of 100Ω. Calculate the current at 0.6ms.	CO2	L3
	d	Define natural and forced response.	CO2	L2
	e	List any two properties of Laplace transform	CO3	L2
	f	Define time constant of series RC circuit	CO3	L1
	g	What are the conditions to be fulfilled for reciprocity of a two port network	CO4	L2
	h	Define propagation constant.	CO4	L1
	i	Draw constant-k low pass filter (proto type)	CO5	L2
	j	Define propagation constant, Attenuation constant ?	CO5	L1

Part-B

Answer All the following questions.		(5X10M=50Marks)		
2	<p>In the network of Fig., the switch is closed at $t=0$. With the capacitor unchanged, find value for I, di/dt and d^2i/dt^2 at $t=0^+$ [10]</p> <div></div>	CO1	L4	
OR				
3	<p>Explain the transient response of Series RL circuit when dc voltage is applied to the circuit. [10]</p>	CO1	L3	

4	Explain the steady state response of parallel RLC circuit when excited with a unit step input is applied to the circuit. [10]	CO2	L3
	OR		
5	Obtain the Current Expression for Transient Response of Series RLC Circuit excited by AC using Laplace Transform Method? [10]	CO2	L3
6	For the figure shown, the dc voltage is applied to the circuit keeping the switch K open so that the steady state is reached. Determine the complete response for the circuit after closing the switch K. using laplace transform. [10]	CO3	L4
			
	OR		
7	Find out the Laplace transform for the following time functions: i) Impulse function ii) Ramp function iii) Sinusoidal function iv) Hyperbolic sinusoidal function. [10]	CO3	L3
8	Explain the conditions to be fulfilled for parallel connection of 2 two port networks. [10]	CO4	L3
	OR		
9	Find the z-parameters for the network shown in figure. [10]	CO4	L3
			
10	Design a prototype band pass filter with cut off frequencies 1.5 kHz and 5 kHz and a design impedance of 500 Ω. [10]	CO5	L5
	OR		
11	Analyze constant K High pass filters. [10]	CO5	L4