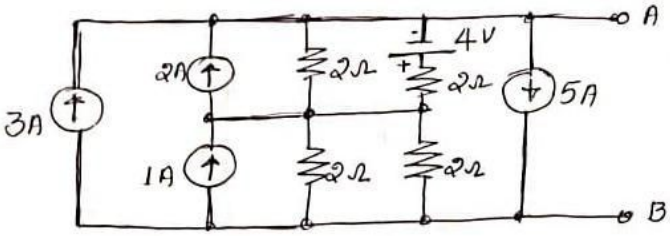
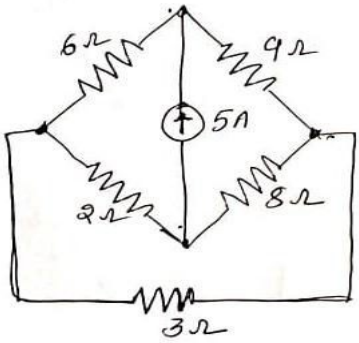
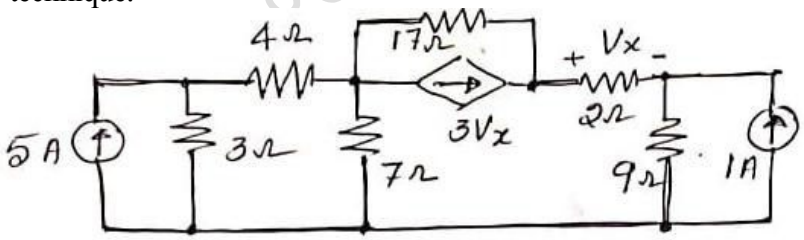
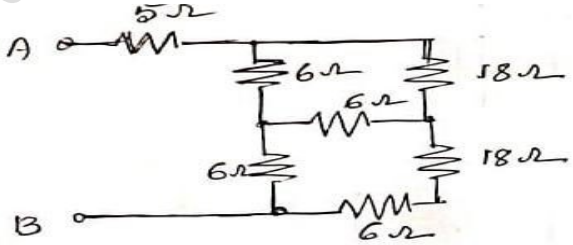
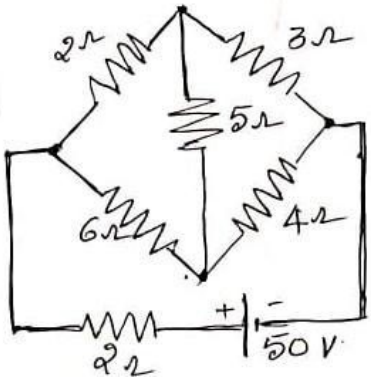
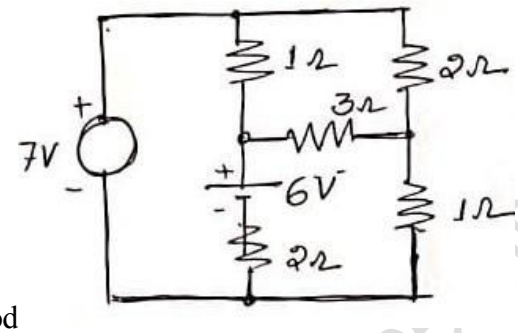
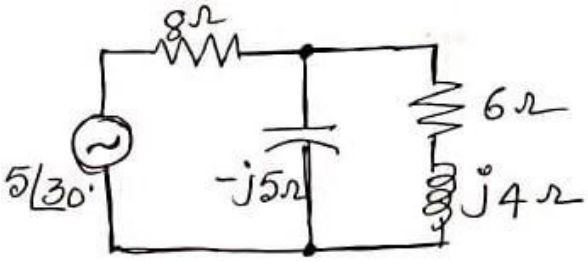
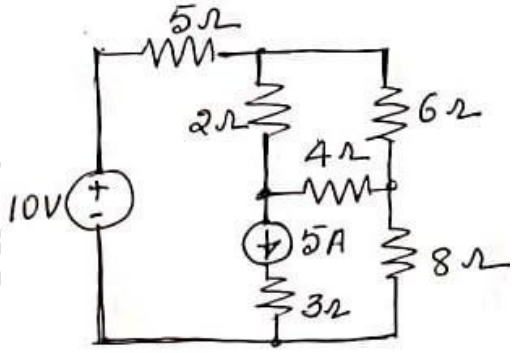
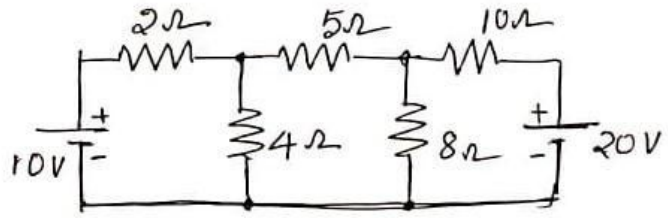
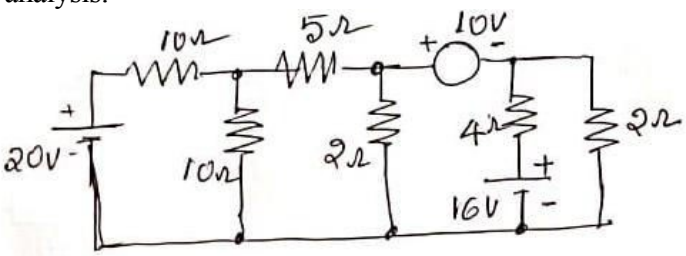
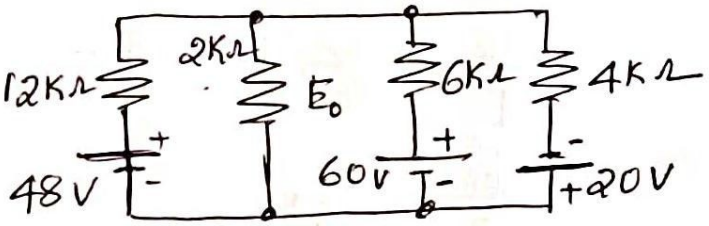
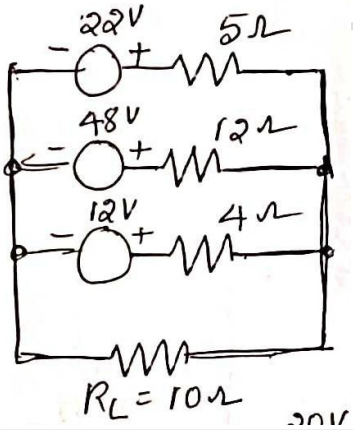
Semester: III	Department of Electronics and communication	AY: 2026-27
Course Code: 1BEC303	Course Name: Network Analysis	

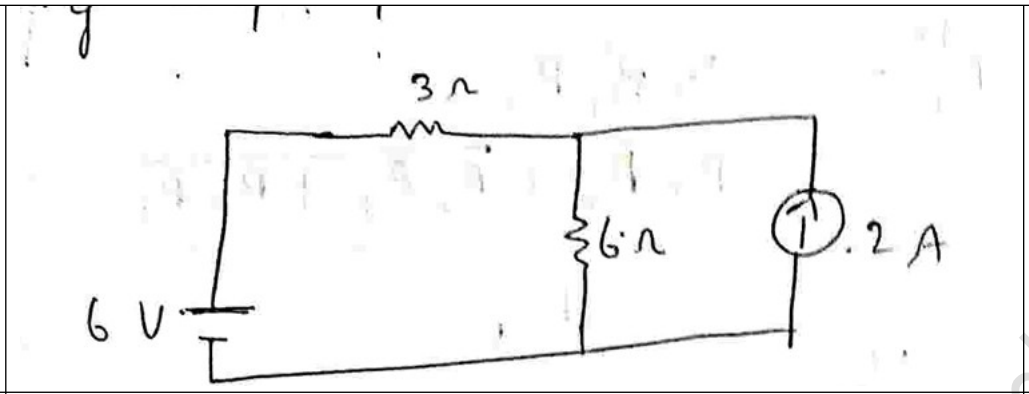
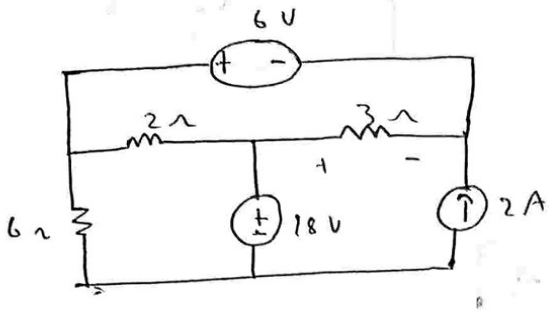
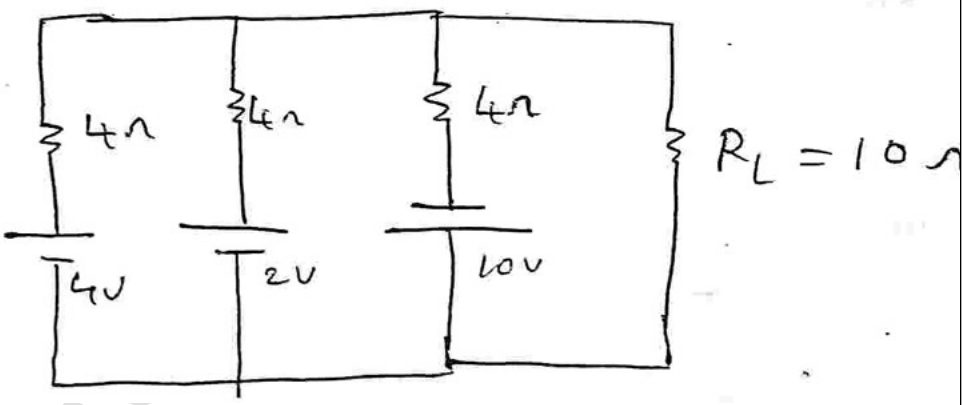
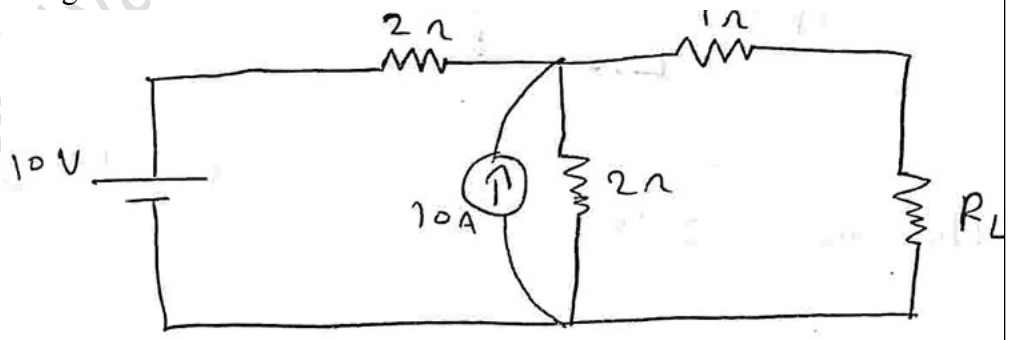
Question Bank

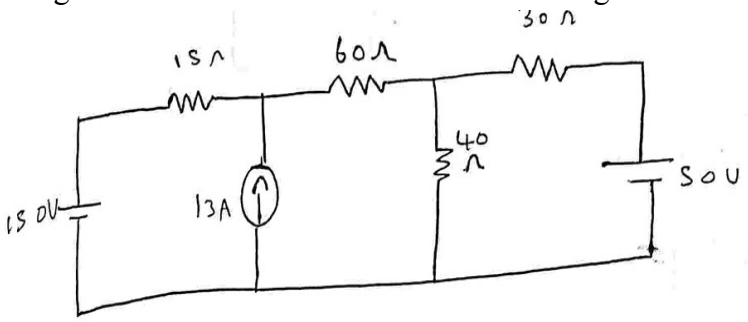
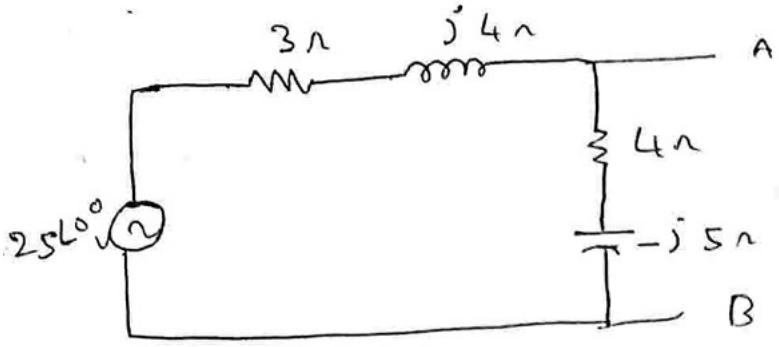
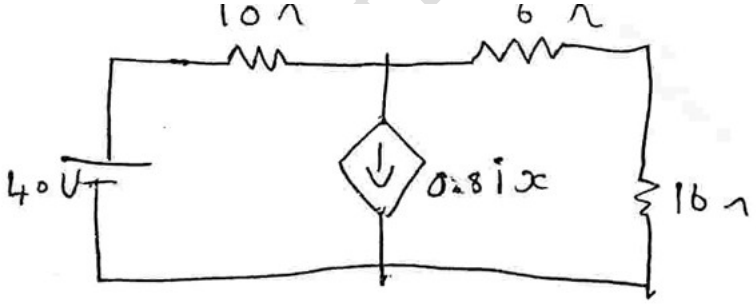
Q.	Module-01	M	L	C
1	Using Source transformation technique reduce following circuit into a single source network. 	8	L 3	CO 1
2	Reduce the following network into single source using source shifting and source transformation technique. 	7	L 3	CO 1
3	Calculate the current through 2Ω resistor using source transformation technique. 	8	L 3	CO 1
4	Find the equivalent resistance between A and B using star 	7	L 3	CO 1

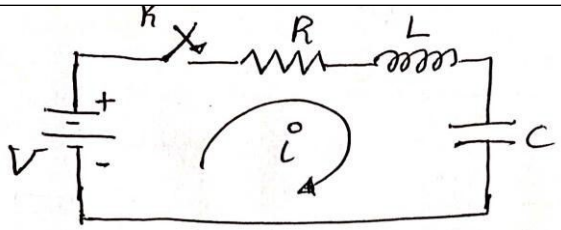
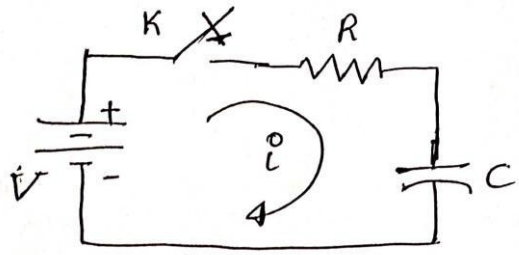
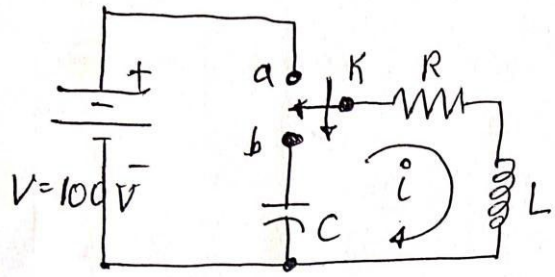
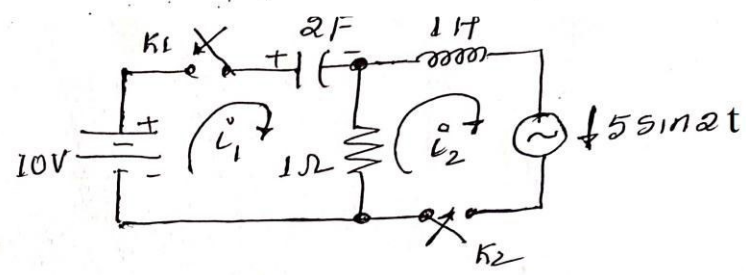
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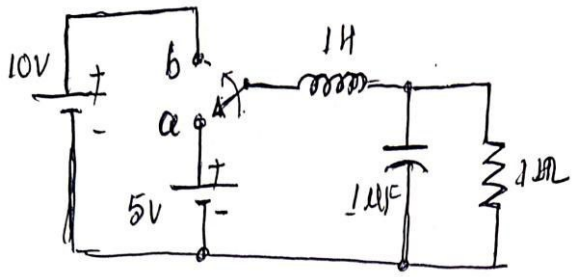
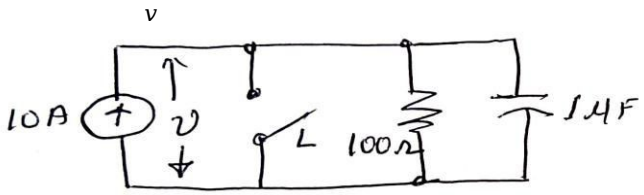
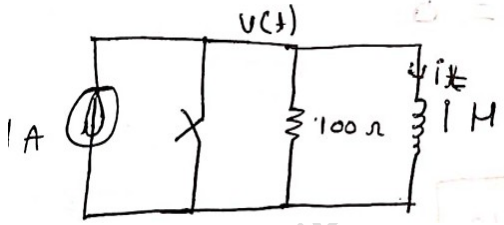
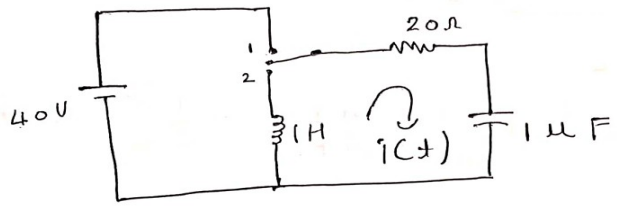
5.	Using star delta conversion obtain the current supplied by source 	6	L 3	CO 1
6.	In the circuit shown find mesh currents using mesh current  analysis method	7	L 3	CO 1
7.	Using mesh current analysis find the power supplied by source 	6	L 3	CO 1
8.	Find all the mesh currents using mesh current analysis 	8	L 3	CO 1
9	Using node voltage analysis, find the currents in each branch of the network shown	7	L 3	CO 1

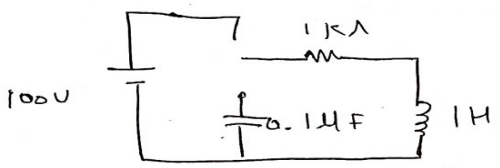
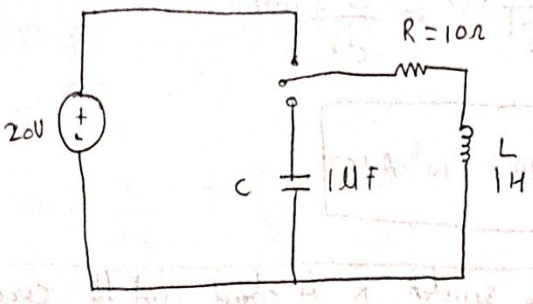
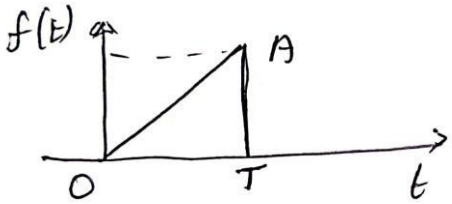
				
10	Find the current flowing through 4Ω resistor using node voltage analysis. 	8	L 3	CO 1
	Module-02			
11.	Find the output voltage E_o of the circuit shown using Millman's theorem. 	8	L 3	CO 2
12	Using Millman's theorem find the current through the load resistance R_L= 10Ω in the circuit 	8	L 3	CO 2
13.	Find the current through 6Ω resistor using super position theorem	6	L 3	CO 2

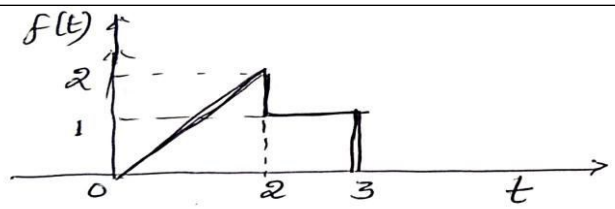
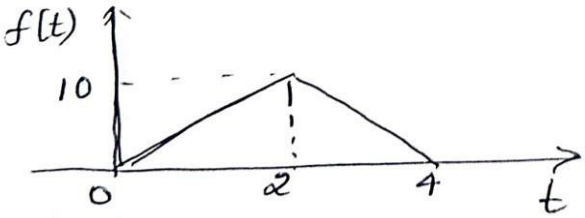
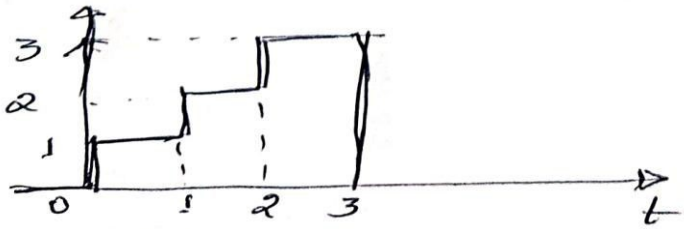
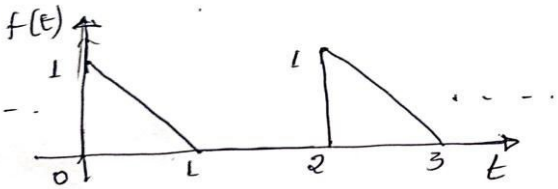
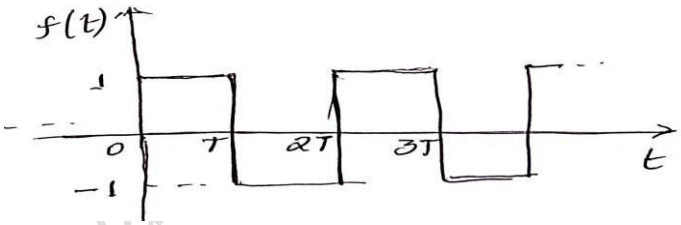
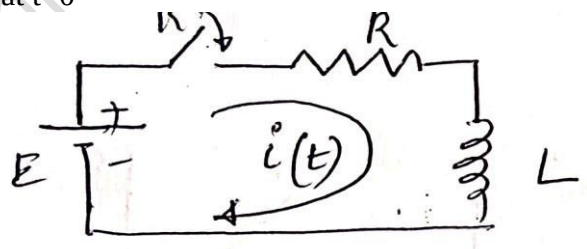
				
14.	Find the voltage across 5Ω resistor using super position theorem 	7	L3	CO2
15.	Find the value of current in load resistor RL=10Ω using millmens theorem 	7	L3	CO2
16.	Using thevenins theorem find the load current 	6	L3	CO2

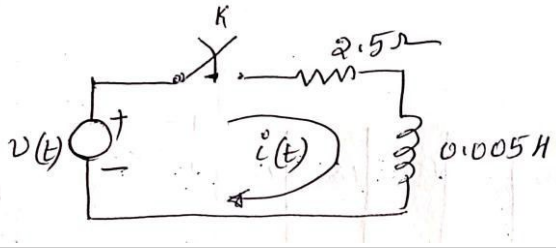
	.			
17.	Using thevenins theorem find the current through 30Ω resistor 	8	L3	CO2
18.	Explain Nortons Theorem.	6	L2	CO2
19.	Obtain Nortons equivalent for the network shown 	7	L3	CO2
20.	Determine the current through 16Ω resistor using Thevenins theorem 	8	L3	CO2
	Module-03			
21.	In the Circuit shown V=10V, R=10Ω, L=1H, C=10μF and Vc(0)=0. Find $i\ 0^+, \frac{di}{dt}0_+, \frac{d^2}{dt^2}i\ 0^+$	8	L3	CO3

				
22.	$i, \frac{di}{dt}, \frac{d^2i}{dt^2}$ at t=0+, In the network shown, the switch K is closed at t=0 at t=0+, for with the capacitor uncharged. Find the values of element values as follows. V=100V, R=1000Ω, C=1μF. 	7	L 3	CO 3
23.	$i, \frac{di}{dt}, \frac{d^2i}{dt^2}$. In the network shown switch K is changed from position a to b at t=0. Solve for t=0+, if R=1000Ω, L=1H, C=0.1 μF and V=100V. Assume that the capacitor is initially uncharged 	8	L 3	CO 3
24.	In the circuit shown $v_c{}^{0-} = 1V$, $i_2\, i_1, i_2{}^{0-} = 0A$. The switches K1 and K2 are closed at t=0.Find and their first and second derivatives at t=0+. 	8	L 3	CO 3
25.	In the network shown the switch was in a position 'a' for sufficiently long time to have achieved steady state. At t=0, the switch was changed from a	8	L 3	CO 3

	to b. Determine i_L *and* v_C their first and second derivatives at t=0+ 			
26.	In the circuit shown the switch is opened at t=0 find the values of $v, \frac{dv}{dt}, \frac{d_2}{dt^2}$ *at* $t = 0_+$ 	6	L 3	CO 3
27.	For the n/w shown in fig the switch is at $t=0$ calculate $v, \frac{dv}{dt}, \frac{d^2v}{dt^2}$ at $t=0^+$ 	7	L 3	CO 3
28.	For the n/w shown the switch is changed from position ① to ② at $t=0$, study state cond having reached before switching find the value of $i, \frac{di}{dt}, \frac{d^2i}{dt^2}$ at ~~at~~ $t=0^+$ 	7	L 3	CO 3

29.	6) for the figure shown t is changed from a to at $t=0$ solve, $\frac{di}{dt}$, $\frac{d^2i}{dt^2}$ at $t=0^+$ R = 1Ω L = 1 H, C = 0.1μF and U = 100 assume. (i is in unchanged 	5	L 3	CO 3
30.	For the circuit shown, the switch K is changed from position 2 at $t=0$ steady state condition having been reached in position 1 find the value of i, $\frac{di}{dt}$, $\frac{d^2i}{dt^2}$ at 	7	L 3	CO 3
	Module-04			
31.	State and prove Initial value theorem and Final Value Theorem	6	L 2	CO 4
32.	Find the Laplace Transform of the following waveform 	7	L 3	CO 4
33.	Find the Laplace Transform of f(t) shown below	8	L 3	CO 4

				
34.	Find the Laplace Transform of the following waveform 	8	L3	CO4
35.	Find the Laplace Transform of the following waveform 	7	L3	CO4
36.	Find the Laplace Transform of the periodic function shown 	6	L3	CO4
37.	Find the Laplace Transform of the periodic signal f(t) shown 	7	L3	CO4
38.	For the circuit shown find an expression for i(t) when the switch k is closed at t=0 	8	L3	CO4
39	In the series RL circuit shown the source voltage is	8	L	CO

.	v(t)=50sin250t. Using Laplace Transform determine the current when switch k is closed at t=0 		3	4
40.	Find the Laplace Transform of Unit step and Unit ramp function	7	L2	CO4
	Module-05			
41.	Define Z-parameters and Draw its Equivalent Model	5	L2	CO5
42.	Define Y-parameters and Draw its Equivalent Model	5	L2	CO5
43.	Define ABCD Parameters and Draw its Equivalent Model	5	L2	CO5
44.	Define h Parameters and Draw its Equivalent Model	5	L2	CO5
45.	Determine h-parameters in terms of Z-parameters	5	L2	CO5
46.	Determine ABCD-parameters in terms of Y-parameters	5	L2	CO5
47.	Determine Y-parameters in terms of Z-parameters	5	L2	CO5
48.	Determine Z-parameters in terms of ABCD-parameters	5	L2	CO5
49.	State and prove Millman's theorem	8	L3	CO5
50.	Explain Tomasulo's algorithm and show how it supports dynamic scheduling.	8	L3	CO5

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