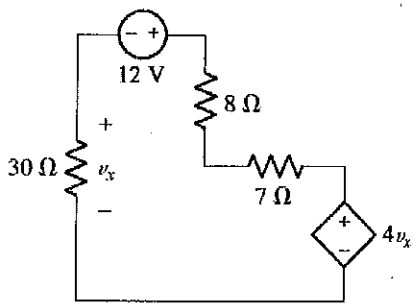
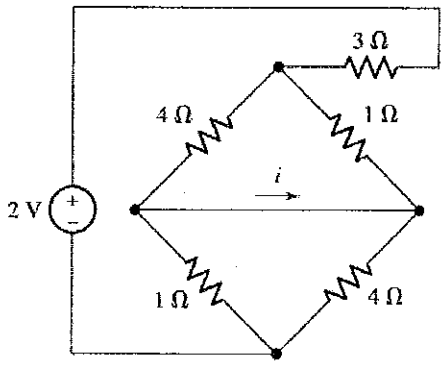
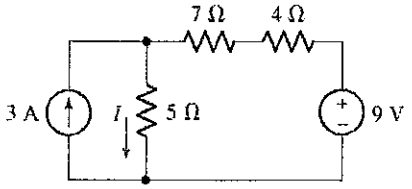
JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION- 2025
B.Tech-II Semester (CSE/IT, ECE, CE)

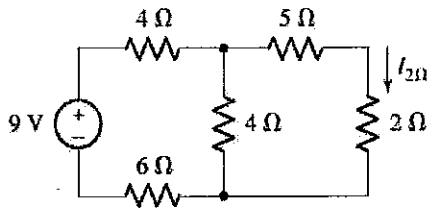
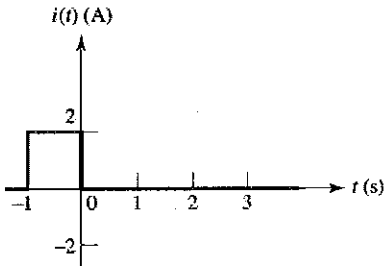
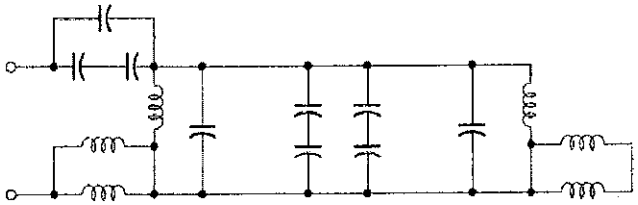
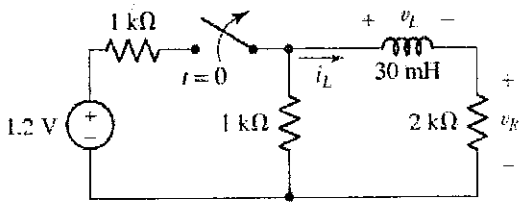
COURSE CODE(CREDITS): 24B11EC211(4) MAX. MARKS: 25

COURSE NAME: Basic Electrical Engineering

COURSE INSTRUCTORS: RKU, HSL, SWT, NTJ, PRG, SRU MAX. TIME: 1 hr 30 min

Note: (a)All questions are compulsory. (b) The candidate is allowed to make suitable numeric assumptions wherever required for solving problems.

Q.No	Question	CO	Marks
Q.1	(a) Find the power absorbed by the 7 Ω in the circuit.  (b) Employ any method/procedure of your choice to obtain a value for the current labeled i in the circuit below.  	CO-1	2+3
Q.2	(a) State the Superposition Theorem. What is the main condition for applying Superposition Theorem in an electrical circuit? (b) Using superposition, determine the current I in the circuit.  	CO-2	2+3

Q.No	Question	CO	Marks
Q.3	(a) Use Thevenin's theorem to find the current through the 2 Ω resistor in the circuit below.  (b) Assuming the 2 Ω resistor in the above circuit as the load resistor (R_L), determine the new value of R_L required for maximum power transfer. Also, calculate the maximum power delivered to this new load resistor.	CO-2	3+2
Q.4	(a) Assuming the passive sign convention, sketch the voltage which develops across the terminals of a 2.5 F capacitor in response to the current waveform given below.  (b) Reduce the network given below to the smallest possible number of components if each inductor is 1 nH and each capacitor is 1 mF. 	CO-3	2+3
Q.5	The switch shown in circuit below has been closed for 6 years prior to being flipped open at $t = 0$. Determine i_L, v_L, and v_R at t equal to (a)0^-; (b) 0^+; (c) 1μs; (d) 10 μs.  	CO-3	5