

TEST - 1 EXAMINATION 2026
B.Tech-I Semester (CSE/CE/ECE/ECS/EE/IT/MC)

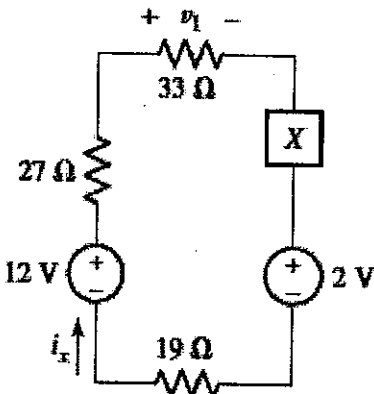
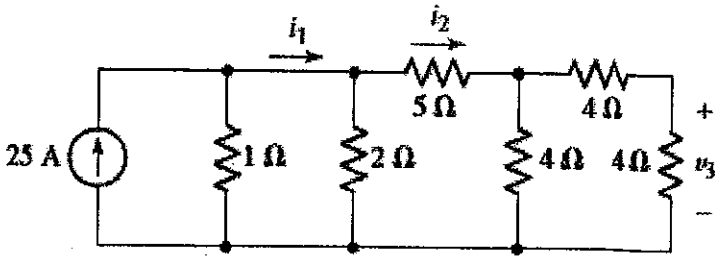
COURSE CODE(CREDITS): 25B11EC111(4)

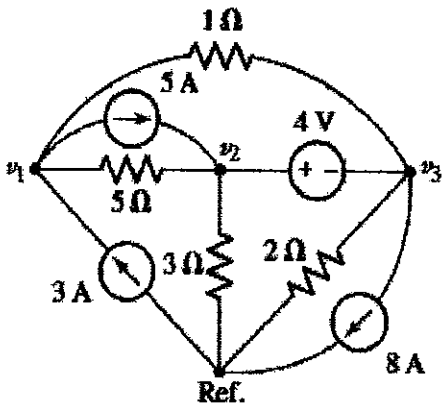
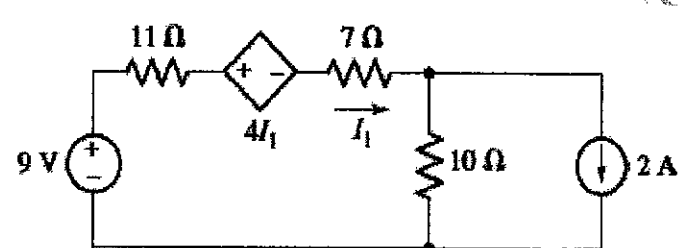
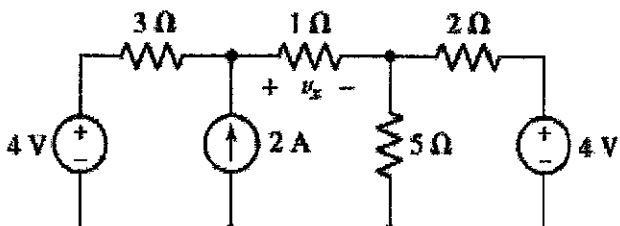
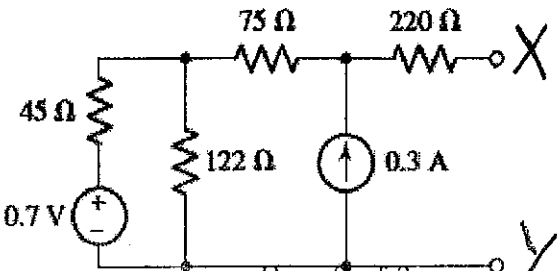
MAX. MARKS: 15

COURSE NAME: Basic Electronics

COURSE INSTRUCTORS: SWT, RKU, HSL, SRU, ALK, PDG, PRG MAX. TIME: 1 Hours

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

Q.No	Question	CO	Marks
Q.1	A. Compute the power absorbed by each element in the circuit, if the mysterious element X is a dependent voltage source labeled $4i_x$, "+" reference on top.  B. Employing resistance combination and current division as appropriate, determine the power delivered by 5 Ω resistor and the value of v_3. 	CO-1	2+3

Q. NO	QUESTION	CO	MARKS
Q.2	A. Determine the nodal voltages (v_1, v_2 and v_3) as labeled in circuit, making use of the supernode technique as appropriate.  B. Find I_1 using mesh analysis. 	CO-1	3+2
Q.3	A. Using superposition, determine the voltage labeled v_x in the given circuit. To what value should the 2 A source be changed to reduce v_x by 10%?  B. Employ Thevenin's theorem to obtain a simple two-component equivalent of the circuit shown below across X and Y. 	CO-1	3+2