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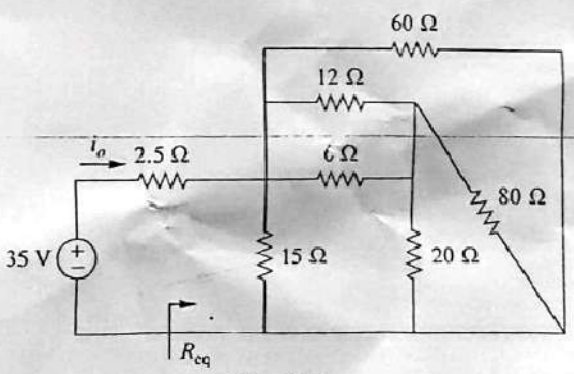
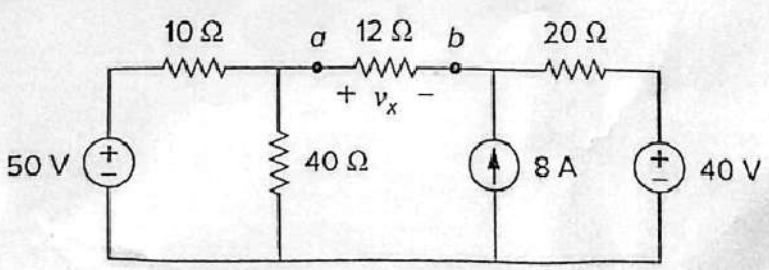
Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Spring 2026
Course Code: CSE121 Course Title: Electrical Circuits
Level:1 Term:3 Batch: 69

Time: 01:30 Hrs. **Marks: 25**

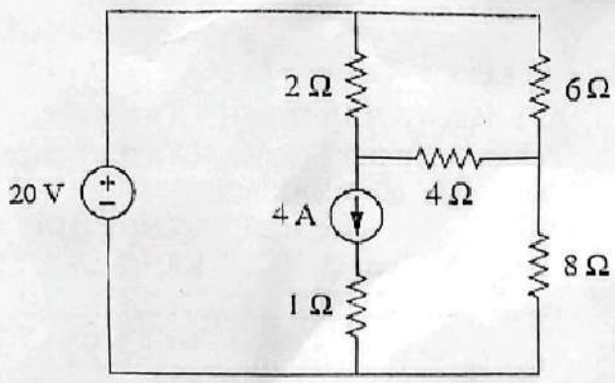
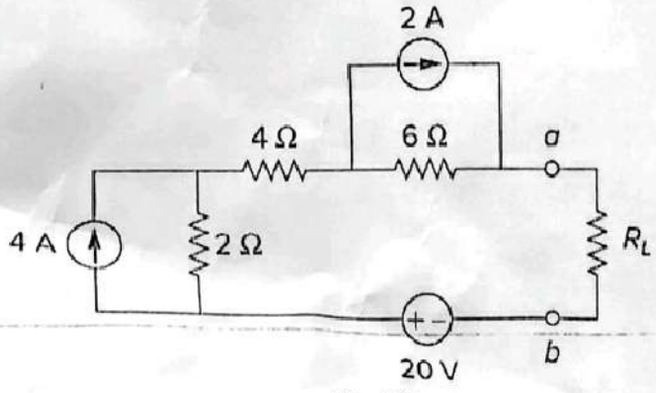
Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	*a)*	**Define** the Maximum Power Transfer Theorem.	[1]	CO1
	b)	**Explain** the concept of a super node in circuit analysis.	[1]	
	c)	**State** the Power Conservation Theorem in DC circuits.	[1]	
	d)	**Interpret** the physical meaning of a short circuit and open circuit in an electrical network.	[1]	
	e)	**Illustrate** the Norton equivalent circuit.	[1]	
2.	*a)*	**Solve** for the value of equivalent resistance, Req and current, i_o in the circuit in Fig. 2(a).  Fig. 2(a)	[5]	CO2
	b)	**Apply** source transformation to find V_x in the circuit of Fig. 2(b).  Fig. 2(b)	[5]	

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3.	*a)*	Using Mesh analysis, **Examine** voltage across 4 Ω resistor in the circuit of Fig. 3(b)  Fig.3(b)	[5]	
	b)	**Analyze** the following circuits to- i) Determine the Thevenin equivalent at terminals a-b. ii) Find R_L for maximum power deliverable to R_L. iii) Determine that maximum power.  Fig. 3(c)	[5]	CO3

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