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Daffodil International University

Department of Electrical and Electronic Engineering
Faculty of Engineering
Mid-Term Examination, Fall – 2025

Course Code: 0713-111 | Course Title: Electrical Circuit I
Section: A, B, C, D, E, F, G, H | Level-Term: L1-T1 | Teacher's Initial: MRK, FHT
Full Marks: 25 | Exam Date: October 15, 2025 | Time: 1.5 Hours

[Answer all questions. Figures in the right margin indicates full marks.]

Q1 (a) **State and explain** KCL and KVL. **CO1 C(1)** 2

(b) **Calculate** the I and V_{ab} for the circuit shown in Fig.1. **CO1 C(2)** 3

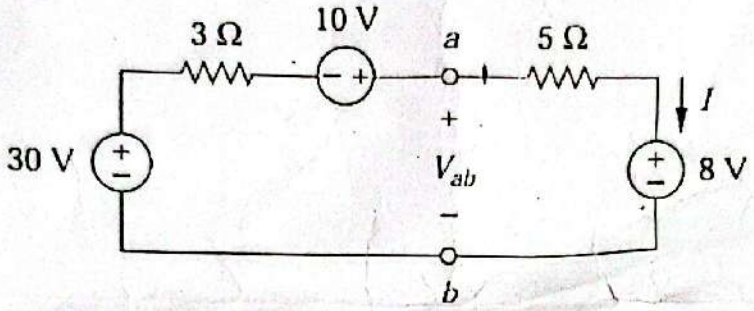


Fig. 1

Q2. **Find** v_1 and v_2 in the circuit shown in Fig. 2. Also, **calculate** i_1 and i_2 and the power dissipated in the 12- Ω and 40-Ω resistors. **CO1 C(2)** 5

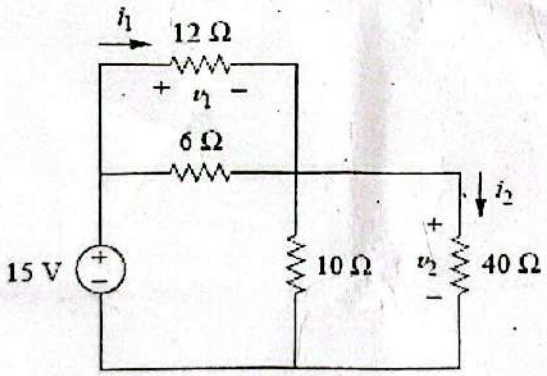
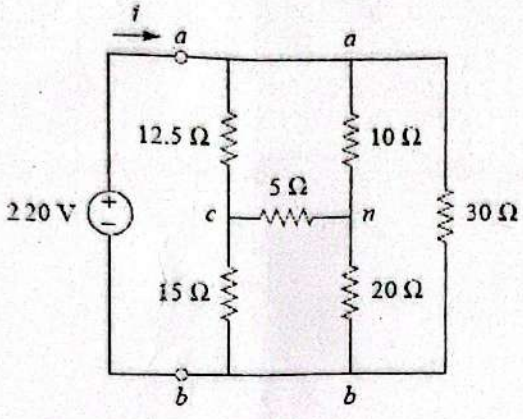


Fig. 2

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Q3. Obtain the equivalent resistance for the circuit in Fig. 3 and use it to find current i. CO1 C(2) 5



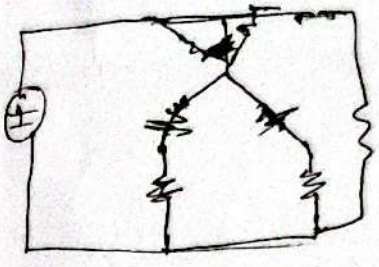


Fig. 3

Q4. Using nodal analysis, find v and i in the circuit shown of following Fig.4. CO2 C(3) 5

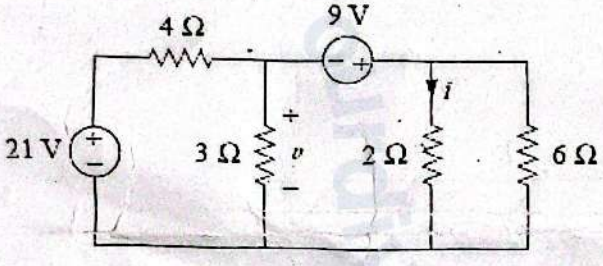


Fig. 4

Q5. Apply mesh analysis to find the current i_o in the circuit shown in Fig.5. CO2 C(3) 5

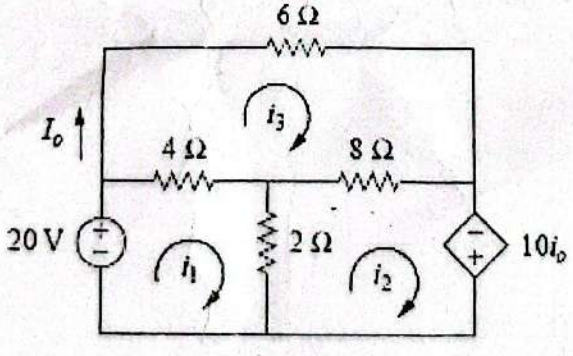


Fig. 5