Experiment 3:
Voltage Dividers and Thévenin's Theorem

Post-Lab Report

I. Discussion on parts A and B

- Refer to the data of Table A.1. How does the load current vary with the load resistance R_L? Explain why.

- Refer to Table A.1. What is the effect on bleeder current I1 as the load current increases? Explain why.

- What is the effect on the voltages V_A and V_B at the divider taps as the load current increases (Table A.1)? Explain why.

- Compare the computed values in Table A.1 with the measured values. Explain any differences.

- Compare the design values and the measured values of the circuit in Fig. B.1. Explain any differences.

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II. Discussion on parts C

- Compare the measured and theoretical values obtained for VTH and RTH of Fig. C.3. Explain any differences in the values of VTH and RTH.

- With the 2.2 KΩ resistor in branch CD of Fig. C.3 opened; calculate V_{TH} and R_{TH} of the modified circuit. Explain any differences in the values of V_{TH} and R_{TH}.

- In the Procedure of Part C, RTH was derived by shorting the 15 V source in Fig. C.3 and measuring the resistance between A and B. In the statement of Thévenin's theorem,

  RTH is derived from the current that flows when RL is shorted. Verify the equivalence of these two methods.

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