

Experiment –

Aim : To Verify Thevenin's Theorem.

Apparatus :
1. Voltmeter (0-50V)
2. Ammeter (0-150 mA)
3. Resistance Network($R_1=50\Omega$, $R_2 = 150\Omega$, $R_3 = 100\Omega$)

Theory: Thevenin's theorem provides a mathematical technique for replacing a given network into equivalent network as viewed from two output terminals A & B. It replace the given network by a signal voltage source with a series resistance connected across two terminals A & B of a linear ,bilateral network, is given by the V_{oc} (open circuit voltage) and R_i the internal resistance of the network as viewed back into the open circuit. Where voltage source replaced their internal resistance and current source by infinite resistance.

Procedure :

1. The circuit is connected as shown in fig.A and reading of ammeter is noted.
2. The resistance R_3 is removed from the terminals and the ckt. redrawn as in fig.B. The terminals have become open circuited.
3. The Open circuited voltage V_{oc} appearing across the terminals A &B when they are open is noted down from the voltmeter.
4. Next the battery is removed and the ckt. redrawn as in fig.C. When viewed from terminals A,B. & equivalent resistance of the circuit is found.
5. Using thevenin's equivalent circuit find the current through R_3 and verify it.

Observations:

Result:

Circuit Diagrams for Thevenin's Theorem Verification:

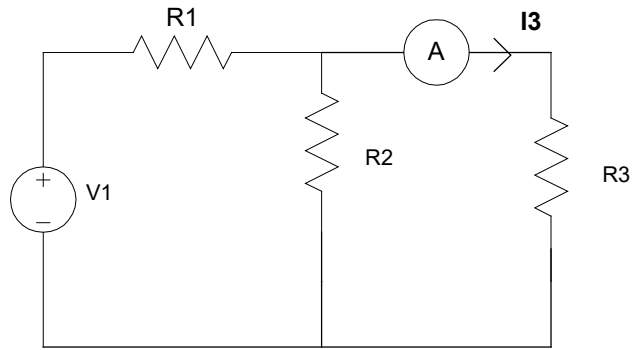


Fig.A

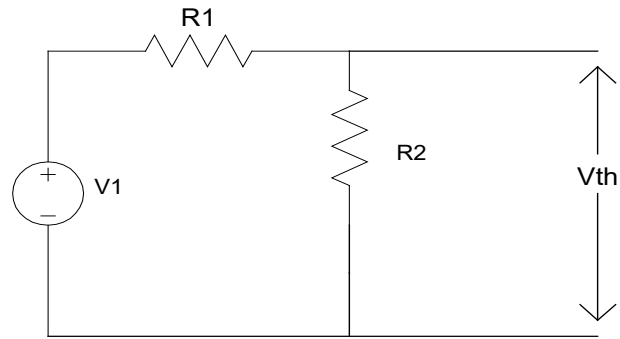


Fig.B

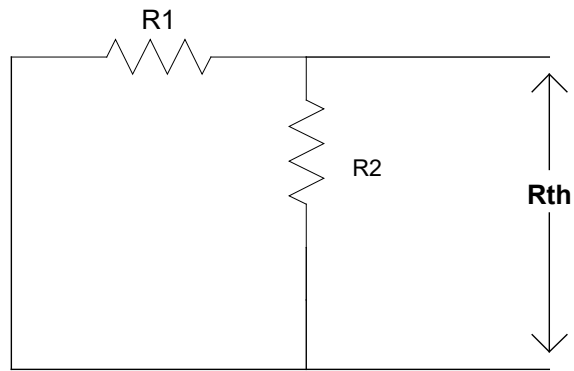


Fig.C

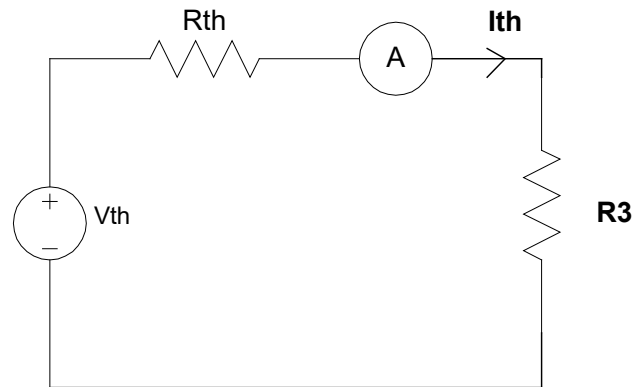


Fig.D