Lab Session 08
Analyze and implement Norton's Theorem

Norton's Theorem:

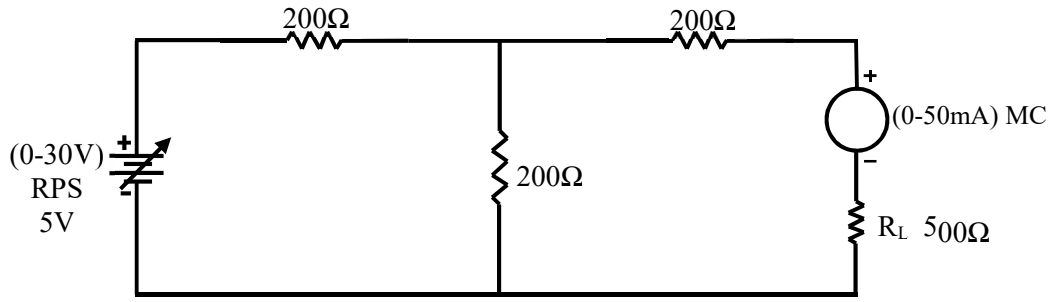
Objective:

- Verify the Norton's theorem theoretically and practically for a given circuit

Statement:

Norton's theorem states that any linear two-terminal circuit can be replaced by an equivalent circuit consisting of a current source I_N in parallel with a resistor R_N.

Circuit Diagram



Circuit (i)

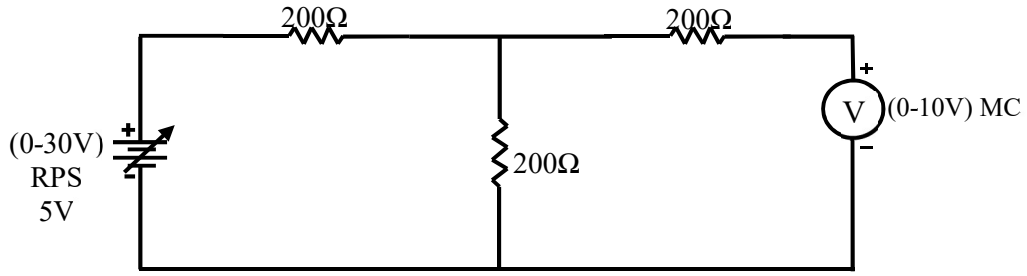


Fig 5.2

Circuit (ii)

Procedure:

Find I_l

1) Connections are given as per the circuit (i)

2) The Load current I_L is noted for various values of supply voltage and tabulated.

Find V_{oc}

1. Connections are modified as shown in the circuit (ii)

2. The Open circuit voltage (V_{OC}) is noted for various values of the supply voltage and tabulated. Find I_{sc}

1. Connections are modified as shown in the circuit (iii)

2. The short circuit current (I_{SC}) is noted for various values of the supply voltage and tabulated.

3) Norton's resistance is practically calculated by using the Open circuit voltage and short circuit current.

S. No.	Supply voltage (volts)	Practical Values			Theoretical Values		
		I_L (mA)	I_{SC} (mA)	V_{OC} (Volts)	I_N(mA)	R_N (Ω)	I_L (mA)

Table 8.1

Conclusions & Comments: