Exp No. 07

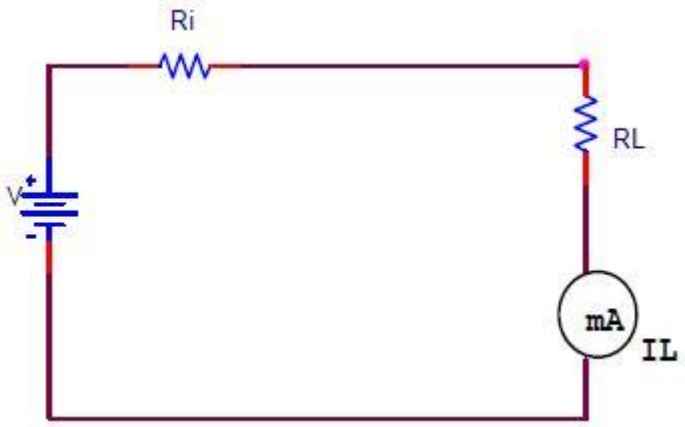
Name of Experiment: Verification of Maximum power transfer theorem.

Theory:

The maximum power transfer theorem states that a load resistance will abstract maximum power from the network when the load resistance is equal to the internal resistance. For maximum power transfer Load resistance $R_L=R_{in}$,Where R_{in} internal resistance of the circuit.

Maximum power, $P_{max} =V^2/4R_L$ Where V is the dc supply voltage.

Circuit diagram:



Procedure:

[1] Connect the circuit diagram as shown in fig.
[2] Take the readings of voltmeter and ammeter for different values of R_L.
[3] Verify that power is maximum when $R_L = R_I$

Data Table:

SR.NO.	APPLIED VOLTAGE (VOLTS)	R_I (Ω)	R_L (Ω)	I_L (mA)	POWER=I_L^2. R_L (mW)

Discussion: In the network maximum power is transferred when the load resistance is equal to the internal resistance of the network.

Precautions:

1. Switch off the supply when not in use.
2. Reading should be taken carefully.
3. All connections should be tight and correct.