

**LAB NO: 10****TO ANALYZE A DC CIRCUIT USING THEVENIN'S THEOREM****OBJECTIVE:**

---

---

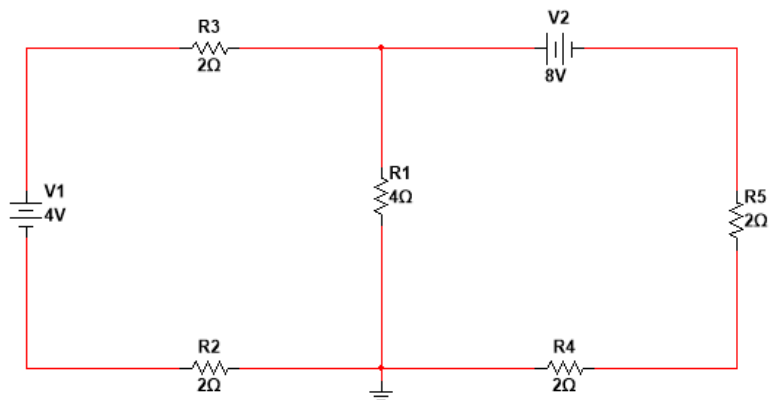
**THEORY:****THEVENIN'S THEOREM:**

Thevenin's Theorem for DC circuits states that any two port linear network may be replaced by a single voltage source with an appropriate internal resistance. The Thevenin's equivalent will produce the same load current and voltage as the original circuit to any load. This equivalent voltage  $V_{TH}$  is the voltage obtained at terminals A-B of the network with terminals A-B open circuited.

This equivalent resistance  $R_{TH}$  is the resistance obtained at terminals A-B of the network with all its independent current sources open circuited and all its independent voltage sources short circuited.

**APPARATUS:**

- Digital multi-meter
- DC power supply
- Resistors

**SCHEMATIC DIAGRAM:****Figure 10.1: Circuit Diagram**

**PROCEDURE:**

---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---



---

**CALCULATIONS:**

<b>Parameters</b>	<b>Theoretical</b>	<b>Practical</b>
$V_{TH}$		
$R_{TH}$		
Current through $4\Omega$ resistor		

**Table 10.1**

**CONCLUSION:**

---

---

---

---

**POST LAB QUESTIONS:**

1. In Thevenin's theorem, how  $R_{TH}$  is calculated?

---

---

---

2. In Thevenin's theorem, how  $V_{TH}$  is calculated?

---

---

---

**Teacher Remarks:**

**Obtained Marks:** \_\_\_\_\_ / 10