



EXPERIMENT NO:	5
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PROGRAMME:	Electrical Circuit
SUBJECT:	Electrical Circuit lab
COURSEWORK TITLE:	superposition theorem

### 5.1. Object:

- To acquire the knowledge of implementing the superposition theorem as a tool in performing network analysis verify it practically.

### 5.2. Apparatus:

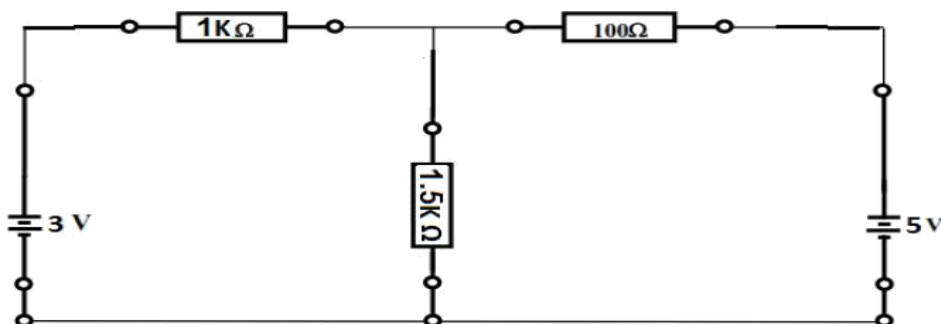
- Resistors of different ratings.
- D.C power supply.
- Measuring instruments (Voltmeter, Ammeter and Ohmmeter).
- Connecting wires and board.

### 5.3. Theory:

In a linear network containing more than one source (current or voltage) the resultant current and voltage in any branch is the algebraic sum of currents and voltages that would be produced by each source, acting alone, all the other sources, being replaced meanwhile by their respective internal resistances.

### 5.4. Procedure:

1. Connect the circuit shown below.



- Measure the Voltage across ( 1.5 k $\Omega$  ) resistor when the two sources are connected
- Measure the Voltage across ( 1.5 k $\Omega$  ) resistor , when :
- The source of ( 3 v ) is ON and The source of ( 5 v ) is OFF.
- The source of ( 5 v ) is ON and The source of ( 3 v ) is OFF.
- Apply the algebraic sum of the results in step ( 2 ) to calculate the amount of voltage across (1.5 k $\Omega$  ) resistor.

