**Basic Electrical and Electronics Engineering**

**Experiment No. : 03**

***Superposition Theorem***

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| **Aim:** | To determine current and voltage value in a circuit using superposition theorem. |
| **Apparatus:** | Online simulation tools (Suggested Tinker cad) |
| **Theortical Analysis:** | ***Fig. 1(a) Current across 40ohm resistor***  ***Theoretical Calculations:***  ***Current through 40ohm resistor*** |
| ***Fig. 1(b) Voltage across 15 ohm resistor***  ***Theoretical Calculations:***  ***Voltage across 15ohm resistor*** |

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|  | **Active Voltage source** | **Theoretical values, I40Ω** | **Practical values, I40Ω** |
| **Observation Table** | **When 5V active** | **59 mA** | **58.8mA =59mA** |
| **When 10V active** | **118mA** | **118mA** |

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|  | **Active Voltage source** | **Theoretical values, V15Ω** | **Practical values, V15Ω** |
| **Observation Table** | **When V1 active** | **25.7 V** | **25.7 V** |
| **When V2 active** | **8.57 V** | **8.57 V** |

**Conclusion:**

* The Practical values have been attained by using online simulation tool Tinkercad.
* We used Superposition theorem to find the theoretical value of voltage and current.
* The theoretical and practical values are equal to each other.