**Basic Electrical and Electronics Engineering**

**Experiment No. : 01**

***DC Circuit Analysis***

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**Date of performance :** 6/3/2021

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| **Aim:** | To determine resistor, voltage and current value in a circuit. |
| **Apparatus:** | Online simulation tools (Tinkercad) |
| **Theortical Analysis:** | read  ***Fig. 1(a) Resistor equivalent across X and Y***  ***Theoretical Calculations:***  ***Resistor equivalent across X and Y*** |
| ***Fig. 1(b) Resistor equivalent across A and B***  ***Theoretical Calculations:***  ***Resistor equivalent across A and B*** |
| ***Fig. 1(c) Current in the circuit***  ***Theoretical Calculations:***  ***Current in the circuit*** |
| ***Theoretical Calculations:***  ***Voltage across 6ohm*** |

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| --- | --- | --- | --- |
|  |  | **Theoretical values** | **Practical values** |
| **Observation Table** | Equivalent resistor RXY (Fig 1.a) | 8.67 Ω | 8.67 Ω |
| Equivalent resistor RAB (Fig 1.b) | 10 Ω | 10 Ω |
| Current in the circuit I (Fig 1.c) | 0.233A | 0.233A |
| Voltage V6Ω (Fig 1.d) | 3.06V | 3.06V |

**Conclusion:**

1. We used Star-Delta transformation to simplify the circuit.
2. The practical values has been attained using an online simulator tool, Tinkercad
3. The theoretical values and practical values are equal to each other.