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| **Worksheet for Lab on Resistors in Series**  | **Name** |  |
| **and Parallel** |  |  |
|  | **Date** |  |

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|  | **Partner #1** |  |
|  |  |  |
|  | **Partner #2** |  |

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| **Experiment #1 – i-V Curve:** |
|  |
| **Complete and fill in Data Table 01** |
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|  |  |  |
| --- | --- | --- |
| **Nominal** | **Actual** |  |
| **V applied (V)** | **V applied (V)** | **i measured (mA)** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |

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| **Complete and fill in Data Table 02 From the plot made** |
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| --- | --- |
| **Slope** $\left(^{mA}/\_{V}\right)$ |  |
| **y-intercept**$\left(mA\right)$ |  |
| **Resistance**$\left(kΩ\right)$ |  |

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| **Experiment #2 – Resistors in Series:** |
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| **Complete and fill in Data Table 03** |
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| **Nominal Vs(V)** | **5** | **R1 ()** | **1000** |  |
| **Actual Vs(V)** |  |  |  |  |
|  |  |  |  |  |
| **R2 ()** | **1000** | **2700** | **3300** | **6800** |
| **i (mA)** |  |  |  |  |
| **V1 (V)** |  |  |  |  |
| **V2 (V)** |  |  |  |  |
| **(V1 + V2) (V)** |  |  |  |  |
| **Rtotal = R1+ R2 (Ω)** |  |  |  |  |
| **Rtotal = (V1 + V2)/i (Ω)** |  |  |  |  |
| **% diff** |  |  |  |  |
|  |  |  |  |  |
| **Nominal Vs(V)** | **10** | **R1 ()** | **1000** |  |
| **Actual Vs(V)** |  |  |  |  |
|  |  |  |  |  |
| **R2 ()** | **1000** | **2700** | **3300** | **6800** |
| **i (mA)** |  |  |  |  |
| **V1 (V)** |  |  |  |  |
| **V2 (V)** |  |  |  |  |
| **(V1 + V2) (V)** |  |  |  |  |
| **Rtotal = R1+ R2 (Ω)** |  |  |  |  |
| **Rtotal = (V1 + V2)/i (Ω)** |  |  |  |  |
| **% diff** |  |  |  |  |

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| **Experiment #3 – Resistors in Parallel:** |
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| **Complete and fill in Data Table 04** |
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| **Nominal Vs(V)** | **5** | **R1 ()** | **1000** |  |
| **Actual Vs(V)** |  |  |  |  |
|  |  |  |  |  |
| **R2 ()** | **1000** | **2700** | **3300** | **6800** |
| **V (V)** |  |  |  |  |
| **i1 (mA)** |  |  |  |  |
| **i2 (mA)** |  |  |  |  |
| **(i1 + i2) (mA)** |  |  |  |  |
| **Rtotal =1/( 1/R1 +1/R2) (Ω)** |  |  |  |  |
| **Rtotal = V/(i1 + i2) (Ω)** |  |  |  |  |
| **% diff** |  |  |  |  |
|  |  |  |  |  |
| **Nominal Vs(V)** | **10** | **R1 ()** | **1000** |  |
| **Actual Vs(V)** |  |  |  |  |
|  |  |  |  |  |
| **R2 ()** | **1000** | **2700** | **3300** | **6800** |
| **V (V)** |  |  |  |  |
| **i1 (mA)** |  |  |  |  |
| **i2 (mA)** |  |  |  |  |
| **(i1 + i2) (mA)** |  |  |  |  |
| **Rtotal =1/( 1/R1 +1/R2) (Ω)** |  |  |  |  |
| **Rtotal = V/(i1 + i2) (Ω)** |  |  |  |  |
| **% diff** |  |  |  |  |

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