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| |  |  |  | | --- | --- | --- | | **Worksheet for Lab on Resistors in Series** | **Name** |  | | **and Parallel** |  |  | |  | **Date** |  | |
|  |
| |  |  |  | | --- | --- | --- | |  | **Partner #1** |  | |  |  |  | |  | **Partner #2** |  | |
|  |
| **Experiment #1 – i-V Curve:** |
|  |
| **Complete and fill in Data Table 01** |
|  |
| |  |  |  | | --- | --- | --- | | **Nominal** | **Actual** |  | | **V applied (V)** | **V applied (V)** | **i measured (mA)** | | 1 |  |  | | 2 |  |  | | 3 |  |  | | 4 |  |  | | 5 |  |  | | 6 |  |  | | 7 |  |  | | 8 |  |  | | 9 |  |  | | 10 |  |  | |
|  |
| **Complete and fill in Data Table 02 From the plot made** |
|  |
| |  |  | | --- | --- | | **Slope** |  | | **y-intercept** |  | | **Resistance** |  | |
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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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