

Submitting Candidate

Name:

Student ID:

Lab Section:

Total for Report Sheet: _____ / 16 marks

Remarks:

1. This Report Sheet accompanies the Lab Sheet for Lab 1. It accounts for about 1/2 of the total mark of Lab 1.
2. This Report Sheet should be submitted after all compulsory sections of Lab 1 have been completed. It should be submitted on **Canvas** by **8 October, 2023.**
3. The marks earned in the Lab Sheet combined with the marks earned in this Report Sheet will form the total mark for Lab 1.

Section 1 (4 marks)**Section score:** _____**Observations and Analysis:**

1. What is the measured value of R_{eq} ?

Measured $R_{eq} =$ _____

2. What is the calculated value of R_{eq} ?

Calculated $R_{eq} =$ _____

3. Is the measured resistance and theoretical resistance the same? Explain your answer.

Section 2 (6 marks)

Section score: _____

Observations and Analysis:

1. What is the measured voltage across R2, using $R1 = 6.8k\Omega$ and $R2 = 8.2k\Omega$.

$V_{R2} =$ _____ (measured when resistors are in the $k\Omega$ range)

2. What is the measured voltage across R2, using $R1 = 6.8M\Omega$ and $R2 = 8.2M\Omega$.

$V_{R2} =$ _____ (measured when resistors are in the $M\Omega$ range)

3. Explain the difference in the above two values.

4. Measuring the voltage across R2 with a voltmeter has the effect of increasing/decreasing the actual voltage across R1. Circle the correct answer.

5. The difference between the measured and expected value for the voltage across R2 is more obvious when R2 is:
Circle the correct answer(s)

1. Much larger than the voltmeter internal resistance
2. Much smaller than the voltmeter internal resistance
3. Comparable to the voltmeter resistance

Explain your answer:

Section 3 (6 marks)

Section score: _____

Observations and Analysis:

1. What is the measured current I , using $R = 24\Omega$.

$I =$ _____ (measured)

2. What is the measured current I , using $R = 24k\Omega$.

$I =$ _____ (measured)

3. Explain the difference you observed in the above two values.

4. Measuring the loop current with the ammeter has the effect of increasing/decreasing the actual loop current.
Circle the correct answer.

5. The difference between the measured and expected value for the current is more obvious when R is:
Circle the correct answer.

1. Much larger than the ammeter internal resistance
2. Much smaller than the ammeter internal resistance
3. Comparable to the ammeter internal resistance

Explain your answer: