ECSE-200 Electric Circuit 1

Quiz #1 (Jan. 18, 2019)

**LAST NAME** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **MCGILL ID#** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**FIRST NAME­­­­­­­­­**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**SIGNATURE**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* ***Carefully read the questions***
* ***Show all your work***
* ***Clearly indicate your final answer***
* ***Plagiarism will have important consequences***
* ***Answers must provide the appropriate symbol for the multiplier and SI unit where applicable***
* ***Only Faculty standard calculators are accepted***
* ***You have 45 minutes to complete this quiz***

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**Question 1**. Consider the four circuit elements below. For each circuit element, indicate the power that is being delivered or absorbed by the element. [2 points / element × **4** elements = **8** points].

**A close up of a clock

Description automatically generated**

**Question 2**. Consider the circuit element below which represents a battery. Answer the questions.

A close up of a logo

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1. What is the instantaneous power delivered by the battery at time ? [2 points]
2. What is the energy delivered by the battery over the time interval ? [3 points]
3. How much charges will exit the battery from the + terminal at the end of the time interval over the time interval ? [2 points]

**Question 3**. Consider the I-V diagram for the circuit element shown. Write if the statement is true or false.

A close up of a logo

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1. The circuit element is not a linear circuit element [1 point].
2. The circuit element is a passive element. [1 point]
3. The element delivers energy at the star (the star indicates a measurement data point). [1 point]