Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (please print)

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ECE 2201 – Quiz #3

October 18, 2022

Do not open this quiz until you are told to begin.

1. This quiz is closed book, closed notes. You may use one 8.5” x 11” crib sheet, or its equivalent. You may use a calculator. You should **not** use a cell phone, tablet computer, or laptop computer, as you work on this quiz.

2. Show all work on these pages, and you may use both sides of each page. Show all work necessary to complete the problem. A solution without the appropriate work shown will receive no credit. A solution which is not given in a reasonable order will lose credit. You may separate the pages as you work.

3. Show all units in solutions, intermediate results, and figures. Units in the quiz will be included between square brackets.

4. Do not use red ink. Do not use red pencil.

5. You will have 30 minutes to work on this quiz.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/20

Room for extra work

A Device can be modeled with a voltage source in series with a resistance. The Device is shown in Figure 1, with the plot of the relationship between the voltage and current for the Device shown in Figure 2. This plot should be considered to be valid for all values of current and voltage.

Two identical versions of the Device are connected in the circuit shown in   
Figure 3. Note that the polarities of the Devices shown in Figure 3 are shown with the terminal labels, A and B, as given in Figure 1.

1. Find the model for the Device, and draw it, labeling terminals A and B, and showing numerical values for the components.
2. Find the power delivered by the 8.7[A] current source in the circuit in Figure 3.

 



Room for extra work

Solution:

A Device can be modeled with a voltage source in series with a resistance. The Device is shown in Figure 1, with the plot of the relationship between the voltage and current for the Device shown in Figure 2. This plot should be considered to be valid for all values of current and voltage.

Two identical versions of the Device are connected in the circuit shown in   
Figure 3. Note that the polarities of the Devices shown in Figure 3 are shown with the terminal labels, A and B, as given in Figure 1.

1. Find the model for the Device, and draw it, labeling terminals A and B, and showing numerical values for the components.
2. Find the power delivered by the 8.7[A] current source in the circuit in Figure 3.

 



