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

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

ECE 3355 -- Quiz #1

February 9, 2017

Keep this quiz closed and face up 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.

2. Show all work on these pages. 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.

3. It is assumed that your work will begin on the same page as the problem statement. If you choose to begin your work on another page, you must indicate this on the page with the problem statement, with a clear indication of where the work can be found. **If your work continues on to another page, indicate clearly where your work can be found. Failure to indicate this clearly will result in a loss of credit.**

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

5. Do not use red ink. Do not use red pencil.

6. You will have 40 minutes to work on this quiz.

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

Room for extra work

For the circuit shown in Figure 1, there are two identical amplifiers labeled Amplifier A, and two identical amplifiers labeled Amplifier B, which are inserted into the circuit. The equivalent circuit for Amplifier A is shown in Figure 2. The equivalent circuit for Amplifier B is shown in Figure 3. The terminal numbers for the amplifiers in Figures 2 and 3 are also shown in Figure 1 so that the amplifiers are each connected with the correct polarity.

1. Find the voltage gain *vo/vs*.
2. Find an equivalent circuit for the amplifier which is enclosed with the dashed line in Figure 1. Your equivalent circuit should be one of the four amplifiers we introduced in class.



Room for extra work

ECE 3355 Quiz #1, Spring 2017, Solution:

For the circuit shown in Figure 1, there are two identical amplifiers labeled Amplifier A, and two identical amplifiers labeled Amplifier B, which are inserted into the circuit. The equivalent circuit for Amplifier A is shown in Figure 2. The equivalent circuit for Amplifier B is shown in Figure 3. The terminal numbers for the amplifiers in Figures 2 and 3 are also shown in Figure 1 so that the amplifiers are each connected with the correct polarity.

1. Find the voltage gain *vo/vs*.
2. Find an equivalent circuit for the amplifier which is enclosed with the dashed line in Figure 1. Your equivalent circuit should be one of the four amplifiers we introduced in class.



