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

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

ECE 3455 -- Quiz #2

June 25, 2009

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 25 minutes to work on this quiz.

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

Room for extra work

Use the circuit given below to solve the problems given.

1. Find the transfer function ***Vo/Vi*** for this circuit, as a function of  and of the load *RL*.
2. Find the poles and zeroes as a function of *RL*.
3. Find the value(s) of *RL* that will make the magnitude Bode plot for this transfer function flat over the range from 15[Hz] to 20[kHz].
4. For *RL* = 1[k], find the change in the magnitude Bode plot over the range from 15[Hz] to 20[kHz], and indicate whether this magnitude is increasing or decreasing with frequency.



Room for extra work

ECE 3455 -- Quiz #2 – June 25, 2009 – Solution

Use the circuit given below to solve the problems given.

1. Find the transfer function ***Vo/Vi*** for this circuit, as a function of  and of the load *RL*.
2. Find the poles and zeroes as a function of *RL*.
3. Find the value(s) of *RL* that will make the magnitude Bode plot for this transfer function flat over the range from 15[Hz] to 20[kHz].
4. For *RL* = 1[k], find the change in the magnitude Bode plot over the range from 15[Hz] to 20[kHz], and indicate whether this magnitude is increasing or decreasing with frequency.



