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

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

ECE 2300 -- Quiz #6

Shattuck Section

December 2, 2010

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 30 minutes to work on this quiz.

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

Room for extra work

A circuit is made up of three parallel loads in parallel with a voltage source, *vS(t)*. The circuit is operating in steady state. It is given that the first load absorbs 4.5834.7[kVA]. The second load absorbs 3.51[kW] at unity power factor. The third load absorbs an apparent power of 5.68[kVA], with a leading power factor of 0.23. It is given that the voltage source value is



1. Find the current through the voltage source as a function of time.
2. Taking the three loads as a group, is the combined load capacitive or inductive? Explain your answer.

Room for extra work

ECE 2300 -- Quiz #6 – December 2, 2010 – Solution

A circuit is made up of three parallel loads in parallel with a voltage source, *vS(t)*. The circuit is operating in steady state. It is given that the first load absorbs 4.5834.7[kVA]. The second load absorbs 3.51[kW] at unity power factor. The third load absorbs an apparent power of 5.68[kVA], with a leading power factor of 0.23. It is given that the voltage source value is



1. Find the current through the voltage source as a function of time.
2. Taking the three loads as a group, is the combined load capacitive or inductive? Explain your answer.

