Peoplesoft ID Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ECE 2202 – Final Exam Problem 2

May 5, 2021

1. You may use one 8.5” x 11” crib sheet, or its equivalent. Do not communicate with anyone except Dr. Dave Shattuck or Dr. Xiaonan Shan while you are taking this exam.

2. Show all work necessary to complete the problem. Use additional sheets of paper as needed. A solution without the appropriate work shown will receive no credit. A solution which is not given in a reasonable order will lose credit. Include this page with your Peoplesoft ID Number, or include a different, separate page with your Peoplesoft ID Number. Do not write your name on this quiz. Failure to follow these rules will result in points being deducted.

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 45 minutes to work on this quiz, plus additional time to print, scan and email your work. Use a filename which is your Peoplesoft ID Number, followed by Problem2. Post your solution on Blackboard, in the same way you submit homework assignments. It must be submitted by 12:25pm, or points will be deducted.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/50

The circuit shown had switch SW1 closed, and switches SW2 and SW3 open, for a long time before *t* = 0. Then, at *t* = 0, switch SW1 opened, and switches SW2 and SW3 closed.

1. Find numerical expressions for the voltage *vB(t)* for the time periods before and after the switches changed position.
2. Find the energy stored in inductor *LE* at *t* = 10[microseconds].

All resistances in the diagram have units of [kOhms].



Diagram

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated

Text, letter

Description automatically generated

Text, letter

Description automatically generated