

## **Homework Assignment #11**

### **Reading Assignment:**

Ch. 8 in Electric Circuits, 8<sup>th</sup> Edition by Nilsson

### **Problem Assignment:**

- 1) Chapter 8 problems: 3, 4, 6, 30, 35, 38, 40, 44, 51
- 2) Graph the following responses using MathCAD, MatLab, or Excel and turn in printouts of each graph. Include a title that identifies the problem number and indicates whether the graph is overdamped, underdamped, or critically damped. Graph each response from 0 to 5Tau and use good rules for graphing, including a sufficient number of points so that each graph is smooth.
  - A)  $i(t) = 20e^{-100t} + 30e^{-500t}$  A,  $t \geq 0$
  - B)  $i(t) = 20e^{-5,000t} - 30e^{-20,000t}$  A,  $t \geq 0$
  - C)  $i(t) = (20,000t+2)e^{-400t}$  A,  $t \geq 0$
  - D)  $i(t) = e^{-10,000t}[30\cos(4000\pi t)+40\cos(4000\pi t)]$  A,  $t \geq 0$
  - E)  $i(t) = e^{-2,500t}[30\cos(4000\pi t)+40\cos(4000\pi t)]$  A,  $t \geq 0$
  - F)  $i(t) = e^{-500t}[30\cos(4000\pi t)+40\cos(4000\pi t)]$  A,  $t \geq 0$