

ECE 300
Spring Semester, 2003
HW Set #6

Due: March 3, 2003

wlg

Name _____

Print (last, first)

Use engineering paper. Work only on one side of the paper. Use this sheet as your cover sheet, placed on top of your work and stapled in the top left-hand corner. Number the problems at the top of the page, in the center of the sheet. **Do neat work. Underline your answers. Show how you got your equations. Be sure to show how you got your answers.** Text book problems counts 10 points each. Extra problems count 20 points each.

$$5.11 \quad i(t) = 6 \quad 0 \leq t \leq 2; \quad i(t) = -6 \quad 2 < t \leq 4$$

$$5.15 \quad \text{Assume } v(0) = 0 \text{ V: } v(t) = 3125t^2 \quad 0 < t < 4 \text{ ms; } v(t) = 50 \text{ mV } t > 4 \text{ ms}$$

$$5.24 \quad v(t) = 0 \quad t < 0; \quad v(t) = 250e^{-t} \mu\text{V} \quad t > 0$$

$$w(t) = 1.25[1 - 2e^{-t} + e^{-2t}] \mu\text{J}$$

$$5.32 \quad i(t) = 500t^2 \text{ A } 0 < t < 1 \text{ ms; } i(t) = 2t - 500t^2 - 10^{-3} \text{ A } 1 \text{ ms} \leq t \leq 2 \text{ ms; } i(t) = 1 \text{ mA } t > 2 \text{ ms}$$

$$5.44 \quad v_0 = 12 \text{ V}$$

$$5.48 \quad C_{AB} = 1.32 \mu\text{F}$$

$$5.53 \quad C_{eq} = 3.18 \mu\text{F}$$

$$5.58 \quad L = 4 \text{ mH}$$

Extra 1: Assigned later (op amps)

Extra 2: Assigned later (op amps)