Due: March 10, 2003   Name_____
wlg   **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.**   Problems with plots count 15 points. Problems without plots count 10 points.

Following are to be worked by standard differential equation methods:

6.3 $v_c(t) = 6e^{-2.5t}$ V $t > 0$

6.5 $i_o(t) = (2/3)e^{-5t}$ A $t > 0$

6.7   Use MATLAB (with simulink) to plot your answer: $v_o(t) = 4.36(1 - e^{-1.83t})$ V $t > 0$

6.10   Use MATLAB to plot your answer: $i_L(0^-) = (4/3)$, $i_L(t) = (4/3)e^{-9t}$ A, $t > 0$

6.12   Use MATLAB (with simulink) to plot your answer: $v_c(t) = 6e^{-3.75t}$ V $t > 0$; $v_c(0^-) = 6$ V

6.18   Use MATLAB to make your plot: $v_o(t) = -9.6e^{-9.6t}$ V $t > 0$; $v_o(0^-) = 0$

6.21 $i_o(t) = 0.5e^{-3.33t}$ mA $t > 0$; $i_o(0^-) = 1$ mA

Following are to be worked by the step-by-step method:

6.28 $i_o(t) = 2e^{-t/2.4}$ mA $t > 0$; $i_o(0^-) = 2$ mA

6.34 $i_L(0^-) = 1$ mA; $v_o(t) = 1.85e^{-5.54t}$ V $t > 0$

6.37 $v_c(0^-) = 4$ V; $i_o(t) = [3 - (1/3)e^{-t/0.6}]$ mA $t > 0$

6.47 $v_o(t) = -6e^{-4t}$ V $t > 0$

6.51   Use MATLAB (with simulink) to plot your answer:

$$i_0(t) = \left[\frac{2}{3} - \frac{8}{3}e^{-\frac{15}{8}t} \right] mA \qquad t > 0$$