ECE 202
Spring Semester, 2002
HW Set #10
Revised

Due: April 15, 2002 **Name** _____
wlg (wlg@utk.edu) **print(last, first)**
course home page: http://web.utk.edu/~green/home.htm

Work the following problems from the text. 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.** Each problem counts 10 points. **Be sure to show how you got your answers.**

15.2 $y_{11}=\frac{1}{6}S$, $y_{12}=y_{21}=\frac{-1}{12}S$, $y_{22}=y_{11}$

15.5 $y_{11}=\frac{1}{Z_1}$ S, $y_{12}=0$, $y_{21}=\frac{\gamma}{Z_2}$, , $y_{22}=\frac{1}{Z_2}$ S

15.7 $y_{11}=jw(C_1+C_2)$ S, $y_{12}=-jwC_2$ S, $y_{21}=g-jwC_2$ S, $y_{22}=\frac{1}{R}+jw(C_2+C_3)$ S

15EF-1 $V_1 = 36$ V

15.12 In addition to the Z parameters, also find the H parameters.

$z_{11} = 400$ ohms, $z_{12} = 15$ ohms, $z_{21} = -2e^{-6}$ ohms, $z_{22} = 50$ kohms

$h_{11} = 1$ k Ω, $h_{12} = 3e^{-4}$, $h_{21} = 40$, $h_{22} = 20$ μ S: $\Delta H = 8e^{-3}$

15.18 $$\frac{V_2}{V_S}=\frac{h_{21}R_L}{h_{12}h_{21}R_L-(1+h_{22}R_L)(R_L+h_{11})}$$

15.24 $A=\frac{-1}{\gamma}$, $B=\frac{-Z_2}{\gamma}$, $C=\frac{-1}{\gamma Z_1}$, $D=\frac{-Z_2}{\gamma Z_1}$

15.39 A = 3, B = j8, C = 3 – j1, D = 3 + j8