University of California
College of Engineering
Department of Electrical Engineering and Computer Sciences

	Problem Set 3	**EE40**
Octavian Florescu	**Due Monday June 17th at 6pm**	**Summer 2006**

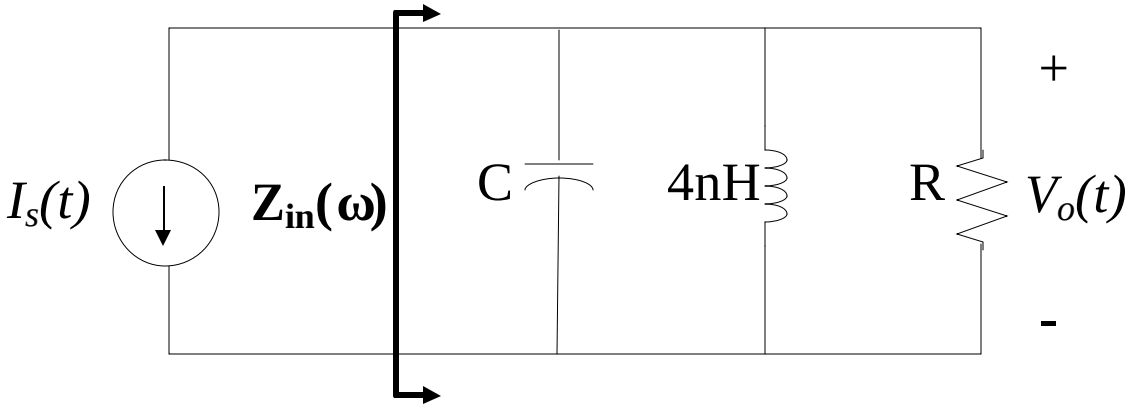
Reading:
Chap 4, 5 (skip 5.7), 6-6.8 of Hambley 3rd Edition

Problems:

Chap 4: 4.15, 4.36, 4.38, 4.45, 4.51
Chap 5: 5.32, 5.43, 5.44, 5.46, 5.47
Chap 6: 6.14, 6.27, 6.46, 6.56, 6.57

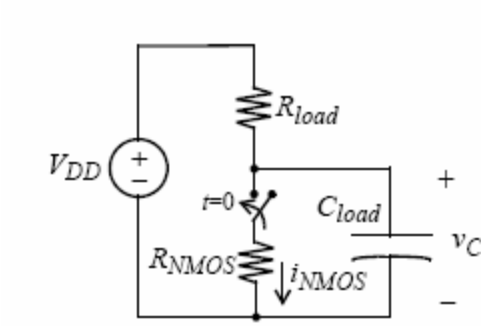
Additional Problems:

Problem 1:



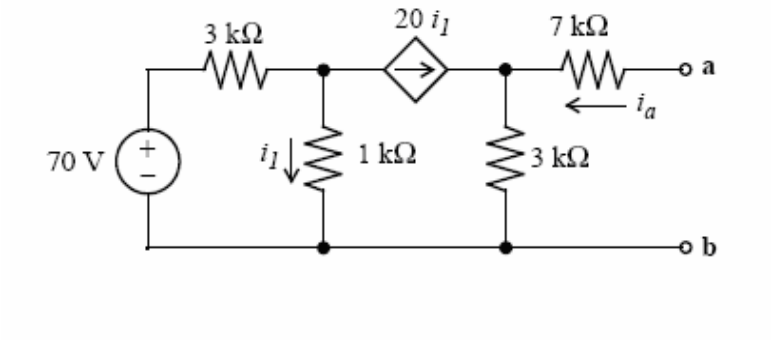
a. For the circuit above, find the values of C and R such that ω_b = 1 Mrad/s and ζ = ½.
b. Is the system over-damped, critically damped or under-damped?
c. Find complex impedance $Z_{in}(\omega)$. What is the value of $Z_{in}(\omega_o)$?
d. $I_S(t)$ = A cos (ω_bt) + A cos (2ω_bt) + A cos (ω_bt/2). Find $V_o(t)$. [Hint: no need to solve differential equation. Use phasors]

Problem 2:



Plot $v_C(t)$ for R_{load}=10kΩ, R_{NMOS}=1kΩ, C_{load}=10uF and V_{DD}=5V

Problem 3:



Find the Norton Equivalent between nodes **a** and **b**.