Problem Set 10
Due Tuesday April 14

READING: Sections 11.1–11.4, 11.8

1. Problem 11.5

2. Problem 11.6 (a) - (f) [OMIT (g) and (h)]

3. Matching Network Calculation
   An argon rf capacitive discharge with plate area $A = 0.1 \text{m}^2$ is operated in an intermediate pressure regime (30 mTorr, as in Problem 2) at 13.56 MHz. The sheath width is measured to be $s_m = 0.009 \text{ m}$, the discharge current is measured to be $I_{rf} = 5 \text{ A}$, and the total power absorbed by the discharge is measured to be $P_{abs} = 60 \text{ W}$.

   (a) Find the effective resistance $R_D$ (ohms) and capacitance $C_D$ (farads) for a series RC model of the discharge.

   (b) Design a matching network to match the discharge to a 50 ohm rf generator.