ECE 580

MIDTERM EXAMINATION

Open Book

October 26, 2015

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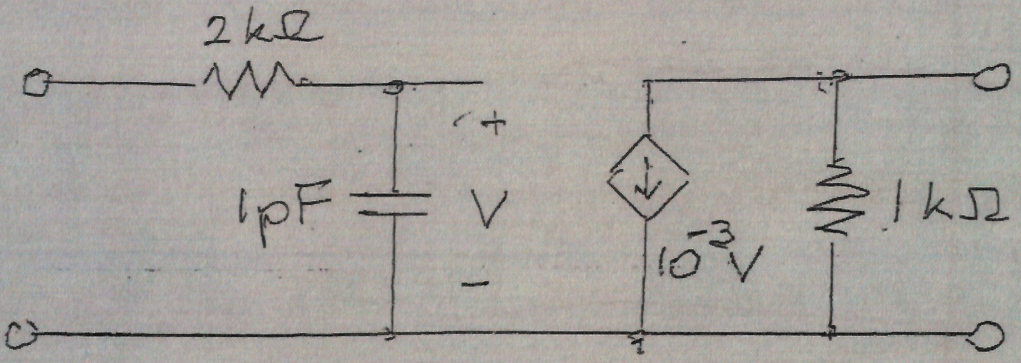
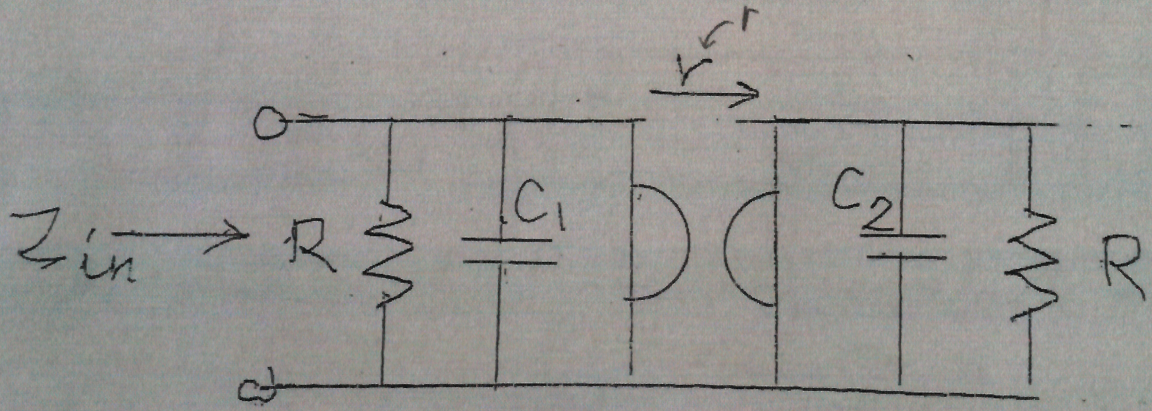
1.Find the short-circuit admittance matrix of the circuit shown below at $f = 100$ MHz.



2.a. Find the input impedance Z_{in} of the circuit shown.

b. Find a passive circuit realization of Z_{in}.



3. a. Show how a lattice can be split into two parallel two-ports N_a and N_b.

b. Prove that $Y = Y_a + Y_b$ holds for the lattice.