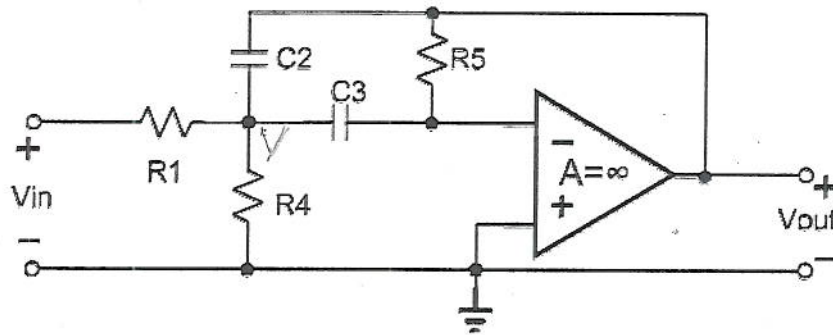


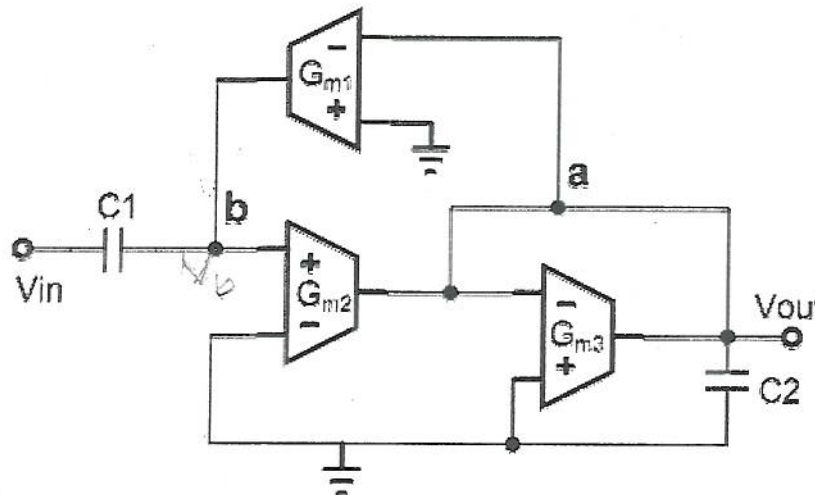
FINAL EXAMINATION
ECE 580

Dec.3, 2012
Open Book

1. a. Find the pole frequency and the pole Q (Q_p) for the circuit shown.
- b. For what capacitance ratio is Q_p maximum?
- c. What is the value of $Q_{p,max}$?



2. For the G_m -C filter shown, find
 - a. the transfer function;
 - b. the pole frequency and the pole Q ;
 - c. an estimate of the peak gain for high Q_p .



3. a. Find the input impedance of the circuit shown.
b. What is a useful application of the circuit?
c. What happens if the G_{m2} values of the OTAs are mismatched? How can the circuit be made less sensitive to such mismatch?

