COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications

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Course : Analog Signal Processing

Course Code: EC434

Problem Set 5

P1. If the clock frequency of switched capacitor equivalent resistor is 100kHz, find the value of the capacitor C that will emulate a 1MHz resistor.

P2. In the circuit in fig.1, for an applied DC voltage of 1V:

a. If C1 is 0.1pF, what charge is transferred for each cycle of a 1Mhz clock?
b. What is the average current drawn from the input source?
c. For a 2 pF feedback capacitance, what change in output would you expect for each cycle of input clock?
d. Sketch the output for t=0 to 10μsec?
e. Compare the results for part d. with the output wave form of the continuous time equivalent circuit?

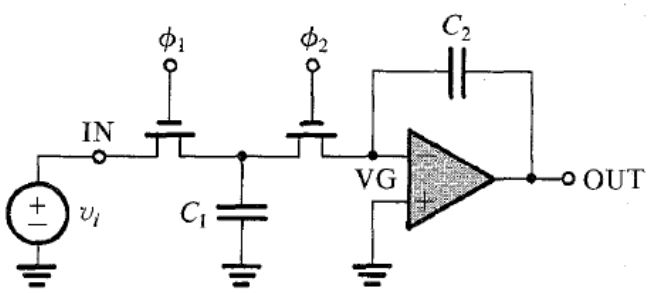

Figure 1

P3. Design the Antoniou- Inductance Simulation circuit to realize the inductance of:

a. 10H if resistors are equal to 10kΩ.
b. 0.1H if capacitorimpedance is 10kΩ at f=1KHz.