Name: KEY **Id#**

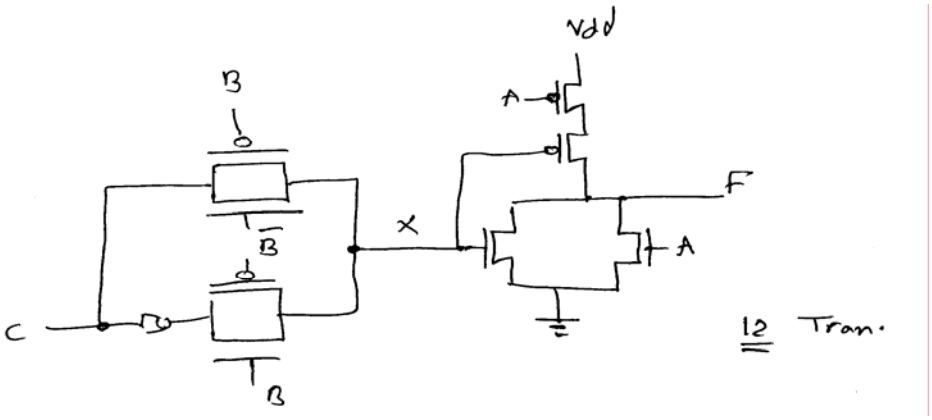
COE 360, Term 071

Principles of VLSI Design
Quiz# 2

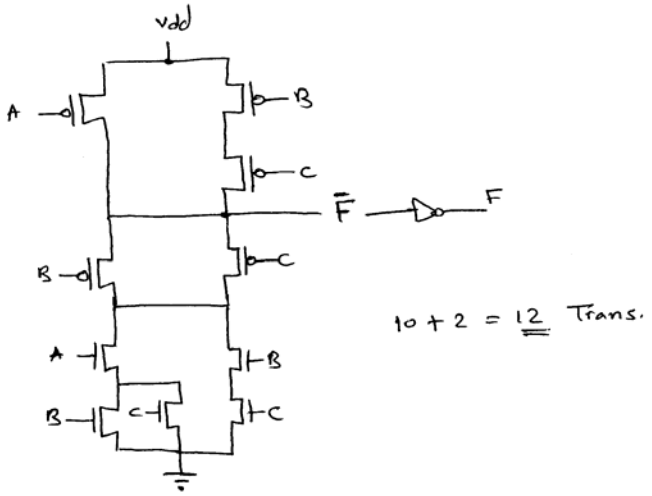
Date: Wednesday, Oct. 24, 2007

Q1. Implement the following functions using **CMOS** with the smallest number of transistors possible. Note that transmission gates are to be used whenever this leads to a better implementation. Indicate the number of transistors needed for your implementation including the ones needed for inverting the inputs:

(1) F= A' B C + A' B' C' = A' (B C + B' C') = [A + (B C' + B' C)]'



(2) F =A B + A C + B C = [A (B + C) + B C]"



(3) A falling-edge triggered D-flip flop.