EE210A: Microelectronics I - Mini-Quiz 5

NAME (in capital)	Roll No

Time: 15 minutes

1) : Consider $\mu_n C_{ox} = 200\mu A/V^2$, $I_0 = 2mA$, $V_{tn} = 1V$, $V_B = 2.5V$.

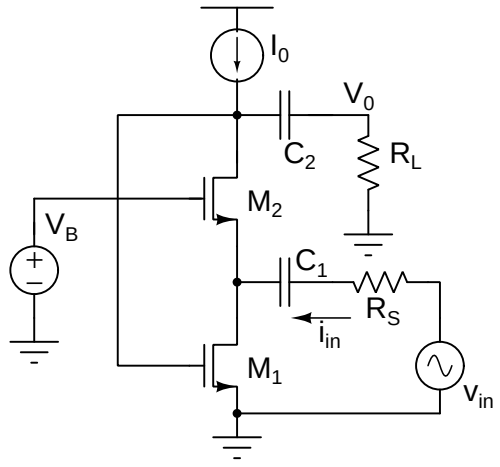

Fig. 1. Problem 1

a) : Size $M1$ and $M2$ such that under quiescent conditions $M1$ is in saturation with a margin of 200 mV, and $M2$ is in saturation with a margin of 500 mV. **[4]**

Same as Sct - A.

$(W/L)_1 = 20$

$(W/L)_2 = 20/0.09$

b) : Find i_{in} if $v_{in} = V_p \sin(\omega_0 t)$, $R_L = 10k\Omega$ and $R_s = 1k\Omega$. Assume C_1 and C_2 are large enough to be treated as a short circuit at ω_0. **[6]**

Expressions are same as set - A