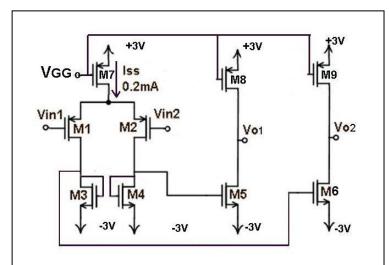
ELECTRONICS II SUMMER-2020 MT-3 NAME:

Number:

For the MOSFETs in the figure, $k_p'=\mu_p c_{ox}=40\mu A/V^2$, $k_n'=\mu_n c_{ox}=80\mu A/V^2$, $V_{An}=V_{Ap}=40V$, $V_{Th,p}=-0.8V$, $V_{Th,n}=0.6V$ are given. Aspect ratio values of the transistors can be obtained from the table given below. (*Vin1=Vin2=0 for DC case*)

- 1) Find the differential-differential gain of the circuit {(vo2-vo1)/(vin1-vin2)}.(40P)
- 2) Find CMRR of the circuit for the differential-differential case. (40P)
- 3) Find VGG. And design a structure in order to obtain VGG. (Do not use any extra power supply)(20P)



	L(um)	W(um)
M1	0.7	28
M2	0.7	28
М3	0.7	7
M4	0.7	7
M5	0.7	14
M6	0.7	14
M7	0.7	14
M8	0.7	14
M9	0.7	14