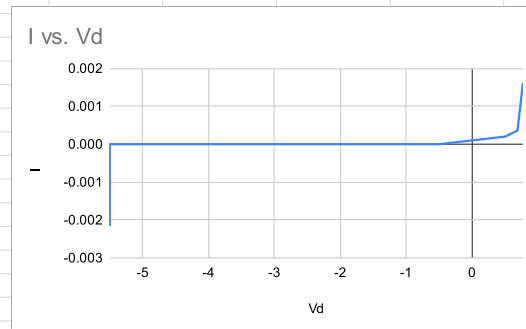


EE 238 Lab work for lab 8

Mayur ware Yeshwanth Sunnapu

Part 1

V DC	Vd	Id
-7	-5.5	-0.00216
-6	-5.5	-0.0007058
-5.8	-5.5	-0.0004411
-5.5	-5.5	0
-5	-5	0
-4	-4	0
-3	-3	0
-2	-2	0
-1	-1	0
-0.5	-0.5	0
0.5	0.5	0.0002
1	0.69	0.00036
2	0.772	0.001617



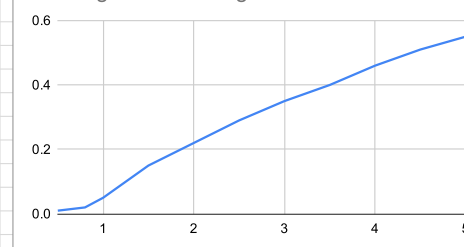
Breakdown V -5.8V

Part 2 i

Vgs	Id
0.5	0.01
0.8	0.02
1	0.05
1.5	0.15
2	0.22
2.5	0.29
3	0.35
3.5	0.4
4	0.46
4.5	0.51
5	0.55

$V_t = 0.78$
 $g_m = 1.02e-4$
 $SS = 997.88$

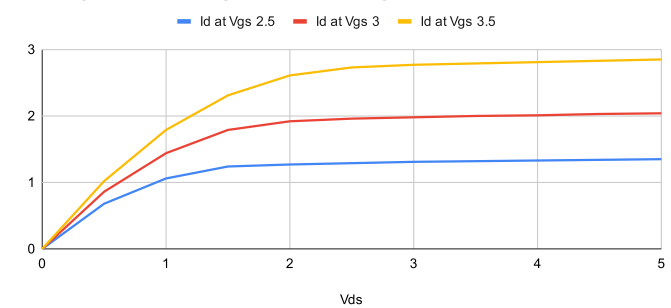
Id vs Vgs in linear region



Part 2 ii

Vds	Id at Vgs 2.5	Id at Vgs 3	Id at Vgs 3.5
0	0	0	0
0.5	0.68	0.86	1.02
1	1.06	1.44	1.79
1.5	1.24	1.79	2.31
2	1.27	1.92	2.61
2.5	1.29	1.96	2.73
3	1.31	1.98	2.77
3.5	1.32	2	2.79
4	1.33	2.01	2.81
4.5	1.34	2.03	2.83
5	1.35	2.04	2.85

Id at Vgs 2.5, Id at Vgs 3 and Id at Vgs 3.5

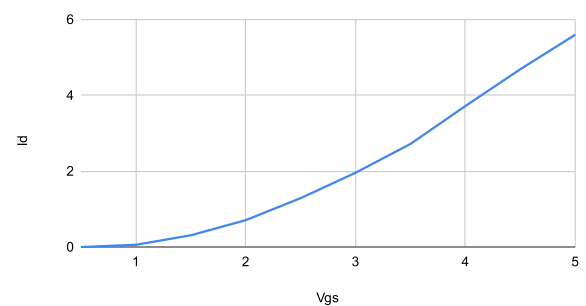


ro (ohm) 50k 35k 25k

Part 3

Vgs	Id
0.5	0
1	0.06
1.5	0.31
2	0.71
2.5	1.29
3	1.96
3.5	2.72
4	3.72
4.5	4.69
5	5.6

Id vs. Vgs



Part 4

$A_v = 2.42$
 $V_{out} = 242mV$
 $g_m = 2.42m \text{ mho}$