ECE 320 - Final (pt 1) - Name _____

Semiconductors & Diodes

1) Load Lines: Assume the VI characteristics for the diode is as shown in the graph. Draw the load line for the following circuit and determine Id and Vd. Assume

2) Nonlinear equations: Diode circuit

Assume the VI characteristics for the diodes shown below are

$$V_d = 0.038 \ln(10^{11} \cdot I_d + 1) \qquad I_d = 10^{-11} \times$$

10) CMOS Logic

a) Design a CMOS logic gate to implement Y=f(A,B,C,D)

AB \ CD	00	01	11	10
00	0	0	1	1
01	x	0	x	0
11	0	x	x	0
10	1	1	0	0