

EECS 312 – Electronic Circuits I – Homework 3
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1. Fill in the missing values in the table. Diodes A to F are Junction Diodes. Assume $V_T=25\text{mV}$.

Diode	I_S (A)	n	V_D (V)	I_D (mA)	P_D (mW)
A	3×10^{-15}	1	0.65		
B	2×10^{-9}	1.8		3	
C	3×10^{-12}		0.7	2	
D		1.9	0.55	.01	
E		1.2		1.3	1
F	1.2×10^{-13}		.68		12

2. A Junction Diode with $n=1.4$ conducts 0.3mA at 0.7V , $I_D(V_D=0.7\text{V})=0.3\text{mA}$.

a. How much does the device conduct (find I_D) at $V_D=0.8\text{V}$? 0.6V ? 0.5V ?

b. What voltage (find V_D) would produce a current of $I_D=50\mu\text{A}$? 5mA ? 50mA ?

3. Find the I_1 and V_1 in the following circuit. Use $I_S=4 \times 10^{-14}$ A and $n=1.4$ for the diodes.

