EECS312-Quiz #3

1. Give the junction diode i-v equation that describes forward and reverse bias.

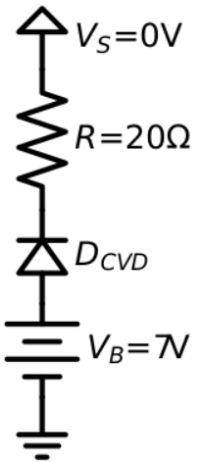
$i_D(v_D)$ = _____

2. A junction diode with n=2 is biased at a large signal current of I_D = 2.5mA. What is the small signal resistance?

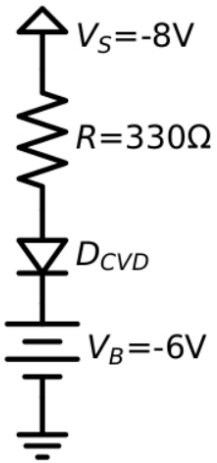
r_d = _____

3. For the circuits below, find the diode voltage (v_D) and diode current (i_D). Assume the diode in (a) is Forward Biased and the diode in (b) is Reverse Biased.

v_{Da} = _____ i_{Da} = _____ v_{Db} = _____ i_{Db} = _____



(a)



(b)

EECS312-Quiz #3

1. Give the junction diode i-v equation that describes forward and reverse bias.

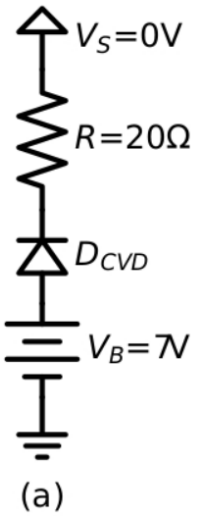
$i_D(v_D) = I_S(\exp(v_D/nV_T)-1)$

2. A junction diode with n=2 is biased at a large signal current of I_D = 2.5mA. What is the small signal resistance?

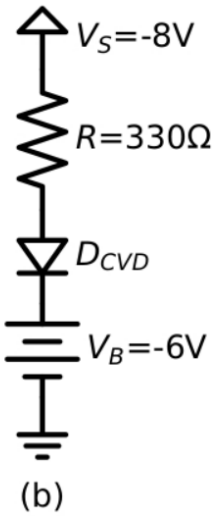
r_d = nVT/ID = 2*0.025/0.0025 = 20Ω

3. For the circuits below, find the diode voltage (v_D) and diode current (i_D). Assume the diode in (a) is Forward Biased and the diode in (b) is Reverse Biased.

v_{Da} = 0.7V i_{Da} = 6.3/20 [A] v_{Db} = -8--6=-2V i_{Db} = 0A



(a)



(b)