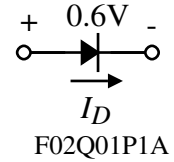


QUIZ NO. 1

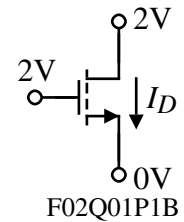
NAME _____ Score _____ /10

The following questions give the dc voltages at the terminals of an active device. You are to calculate the designated dc current.

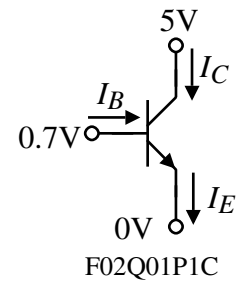
a.) Find the diode current, I_D , where $I_S = 100\text{fA}$ and $V_T = 0.025\text{V}$ (2 pts).



b.) Find the drain-source current, I_{DS} , where $K_n' = 25\mu\text{A}/\text{V}^2$, $V_{TN} = 1\text{V}$ and $W/L = 10$ (2 pts).



c.) Find the collector, emitter, and base currents, I_C , I_E , and I_B if $I_S = 100\text{fA}$, $V_T = 0.025\text{V}$ and $\beta_F = 100$ (4 pts).



d.) Repeat (b.) if $V_D = 1\text{V}$ and $V_G = 3\text{V}$ (2 pts).