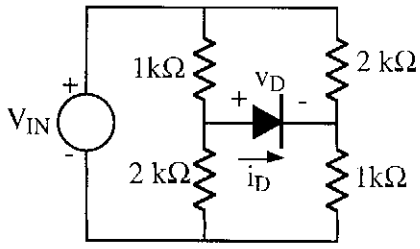
Homework Assignment No. 1 (Modified)

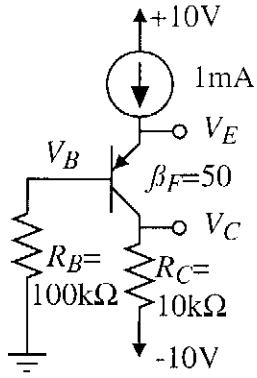
Due on Monday, August 26, 2002

1.) (a.) Find the dc current, I_{DQ}, and the dc voltage, V_{DQ}, of the diode in the circuit shown if V_{IN} is +10V. Assume the large signal model for the diode is a short circuit when $v_D \geq 0V$ and an open circuit when $v_D \leq 0V$. (b.) Repeat part (a.) if $V_{IN} = -10V$.



2.) Problem 4.52 of text.

3.) A pnp BJT circuit is shown. (a.) Find the dc values of I_E, I_C, I_B, V_E, V_C and V_B if $\beta = 50$ and $V_{EB}(on) = 0.65V$. (b.) For what value of R_C does the BJT become saturated? (Recall that saturation of a BJT corresponds to the *BE* and *BC* junctions forward biased.)



4.) Problem 5.47 of the text.