

QUIZ NO. 6

NAME _____ Score _____ /10

A PNP common-collector amplifier is shown. Assume the parameters of the transistor are $\beta_F = 100$, $V_T = 25\text{mV}$, and $V_A = \infty$. (a.) If $I_C = 1\text{ mA}$, find the small signal model parameter values for g_m and r_{π} . (b.) Find an algebraic expression for the small signal input resistance, R_{in} , the output resistance, R_{out} , the voltage gain, v_{out}/v_{in} , and the current gain, i_{out}/i_{in} . (c.) Numerically evaluate the small signal input resistance, R_{in} , the output resistance, R_{out} , the voltage gain, v_{out}/v_{in} , and the current gain, i_{out}/i_{in} .

