For the transistors in figure $\beta = 250$, $|V_{BE}|=0.6V$ and $V_T=25mV$. Output resistances of all the transistors are so big that their effect can be negligible.

a) At quiescence ($V_i=0V$) output voltage $V_o=0V$ ($V_{E3}=0V$) and input resistance ($r_i$) of the circuit is $20k\Omega$. Then determine the value of $R_1$ and $R_2$ resistors value.

b) Determine the voltage gain $v_o/v_i$.

c) Determine the output resistance ($r_o$) of the circuit.

d) Verify your results with SPICE.

(2k7=2700kΩ)

Deadline: Final exam hour.