EE 210   **MINI-QUIZ #4A**   **17.2.21**
Total Marks: 10   **Total Time: 10 mins.**

Assume $V_A = 130$ V (for both Q_1 and Q_2), and $V_0 \ll V_A$.

a) Choose R such that a change in V_0 of 65 mV produces a change in I_0 of 100 nA. Assume Q_1 and Q_2 are perfectly matched, and both have very high β.

b) What is the *least* value of β (*same for Q_1 and Q_2*) that you would allow such that I_0 does not deviate by more than 5% of its nominal value?

c) Rework part a) if Q_1 and Q_2 are mismatched with $I_{S1} = 2I_{S2}$, but β remains very large.