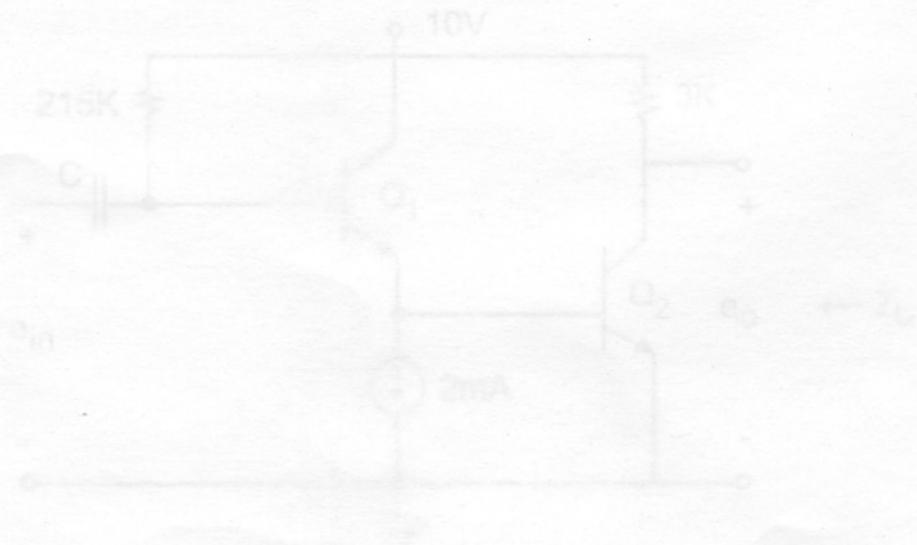


(3) The two transistors in the circuit shown are identical. Compute the values of  $I_{C1}$

$$I_{C2}, V_{CE1Q}, V_{CE2Q}, Z_{in}, Z_{out}, Z_{in}, Z_{out}$$

Assume  $\beta = 50$ ,  $V_{BEQ} = 0.7V$  and all capacitors are ac shorts.



The 2mA constant current source is to be used in Problem 4. It is

shown below. Find  $R_E$  so that  $I = 2mA$ . Assume all capacitors are

$$\alpha = 0.98, V_{BEQ} = 0.7V$$

