

Key

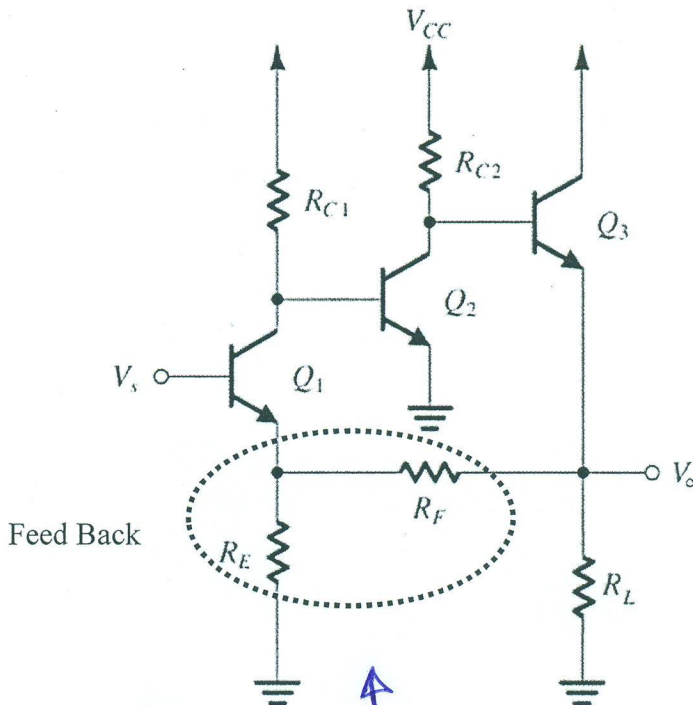
Quiz # 3

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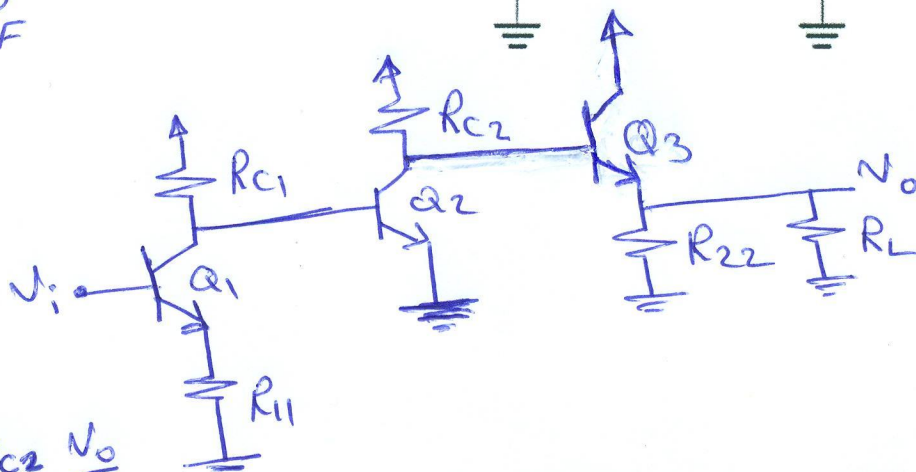
The following figure shows a feedback amplifier, (ignore r_o for all transistors)

- a) Sketch A circuit. 4
- b) Find R_{11} and R_{22} 3
- c) Find A 3



b) $R_{11} = R_E \parallel R_F$
 $R_{22} = R_E + R_F$

a) A



c) $A = \frac{V_o}{V_i} = \frac{V_{c1}}{V_i} \frac{V_{c2}}{V_{c1}} \frac{V_o}{V_{c2}}$

$$A = \frac{V_o}{V_i} = \left(-\alpha_1 \frac{R_{C1} \parallel R_{C2}}{r_{e1} + R_{11}} \right) \left(-\alpha_2 \frac{R_{C2} \parallel (B+1)(r_{e3} + R_{22} \parallel R_L)}{r_{e2}} \right) \frac{R_{22} \parallel R_L}{R_{22} \parallel R_L + r_{e3}}$$