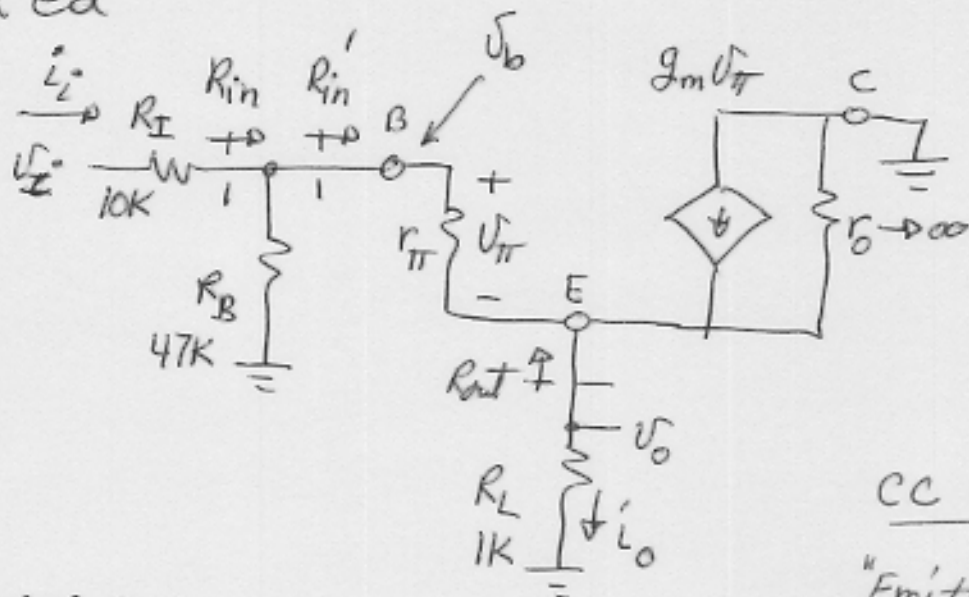


Jaeger 3rd ed

14.20



$$\beta_0 = 80$$

$$g_m = 0.4 \text{ S}$$

$$r_{\pi} = \frac{\beta_0}{g_m} = 200 \Omega$$

CC amp
"Emitter Follower"

$$R_{in}' = r_{\pi} + (1 + \beta_0) R_L = 81.2 \text{ K}\Omega$$

$$R_{in} = R_{in}' \parallel R_B = 29.8 \text{ K}\Omega$$

$$R_{out} = \frac{(R_I \parallel R_B) + r_{\pi}}{1 + \beta_0} = 104 \Omega$$

$$v_b = v_i \frac{R_{in}}{R_{in} + R_I} \quad v_o = v_b \frac{R_L}{R_L + \frac{r_{\pi}}{1 + \beta_0}}$$

$$r_e = \frac{r_{\pi}}{1 + \beta_0} = 2.47 \Omega$$

$$A_v \equiv \frac{v_o}{v_i} = + \frac{R_{in}}{R_{in} + R_I} \frac{R_L}{R_L + r_e} = +0.75$$

$$A_i \equiv \frac{i_o}{i_i} = A_v \frac{R_{in} + R_I}{R_L} = +29.7$$