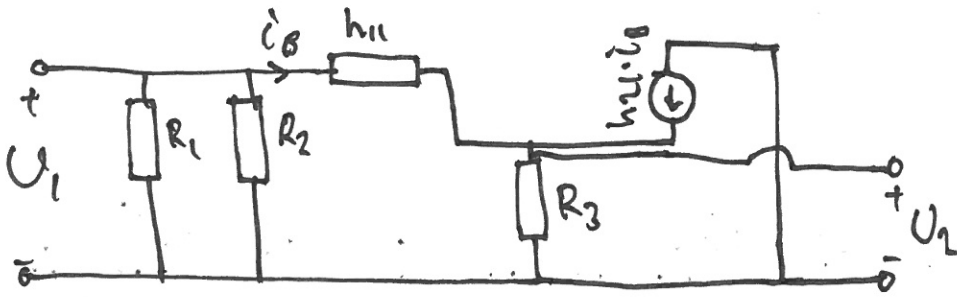


E-16)

Small signal schema:



$$R_1 = 18 \text{ k}\Omega$$

$$R_2 = 270 \text{ k}\Omega$$

$$R_3 = 200 \Omega$$

$$E = 10 \text{ V}$$

$$h_{11} = 400 \Omega$$

$$h_{12} \approx 0$$

$$h_{21} = 100$$

$$h_{22} \approx 0$$

$$F = \frac{U_2}{U_1} = \frac{R_3 \cdot (i_B + h_{21} \cdot i_B)}{h_{11} \cdot i_B + R_3 \cdot (i_B + h_{21} \cdot i_B)} =$$

$$= \frac{R_3 \cdot (1 + h_{21})}{h_{11} + R_3 \cdot (1 + h_{21})} = \frac{200 \cdot 101}{400 + 200 \cdot 101} \approx 0.98$$

$$F = 0.98$$

$$Z_{in} = R_1 \parallel R_2 \parallel \frac{U_1}{i_B}$$

$$= R_1 \parallel R_2 \parallel (h_{11} + R_3 \cdot (1 + h_{21}))$$

$$= 9.28 \text{ k}\Omega$$

$$Z_{in} = 9.28 \text{ k}\Omega$$