

# ENEE3304 ch7 Homework (schilling)

7.1-4 Find  $i_L$  in terms of the common- and differential-mode signals in Fig. P7.1-4.

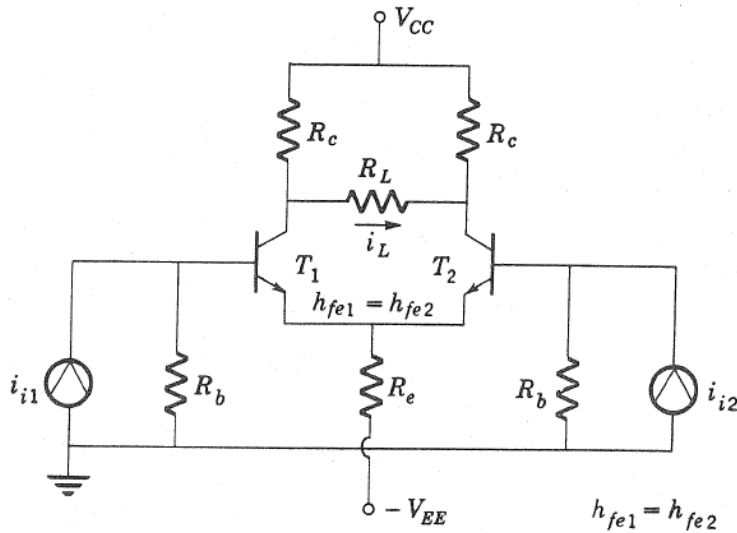


FIGURE P7.1-4

7.4-1 In Fig. P7.4-1  $h_{fe1} = 100$ , and  $h_{fe2} = 200$ . If  $R_c = 1.5 \text{ k}\Omega$ ,  $r_i = 4 \text{ k}\Omega$ ,  $R_e = 6 \text{ k}\Omega$ ,  $V_{CC} = 10 \text{ V}$ ,  $V_{BB} = 5 \text{ V}$ , and  $R_x$  is a  $100\text{-}\Omega$  potentiometer, find (a)  $R_1$  and  $R_2$  and (b) the CMRR.

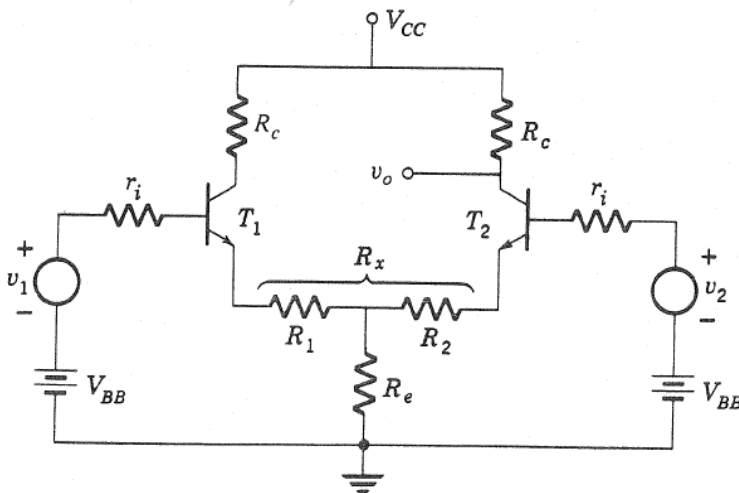


FIGURE P7.4-1

7.6-6 Find (a) quiescent conditions throughout the circuit of Fig. P7.6-6, (b)  $v_1/i_i$  and  $v_2/i_i$ , and (c)  $Z_i$ ,  $Z_{o1}$ , and  $Z_{o2}$ .

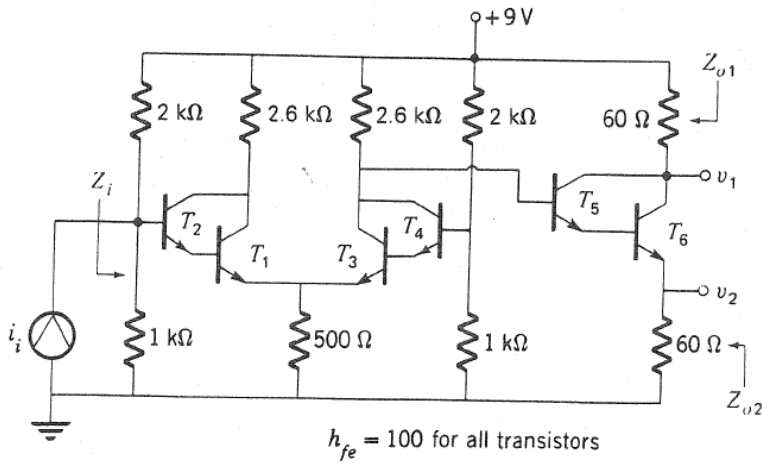


FIGURE P7.6-6

7.7-2 In Fig. P7.7-2 the transistors are identical with  $h_{FE} = h_{fe} = 200$  and  $h_{ob} = 10 \mu\text{S}$  at 5 mA.

- Find  $R_c$  to set the dc component of the output equal to 0.
- Find the small-signal gain  $v_L/v_i$ .

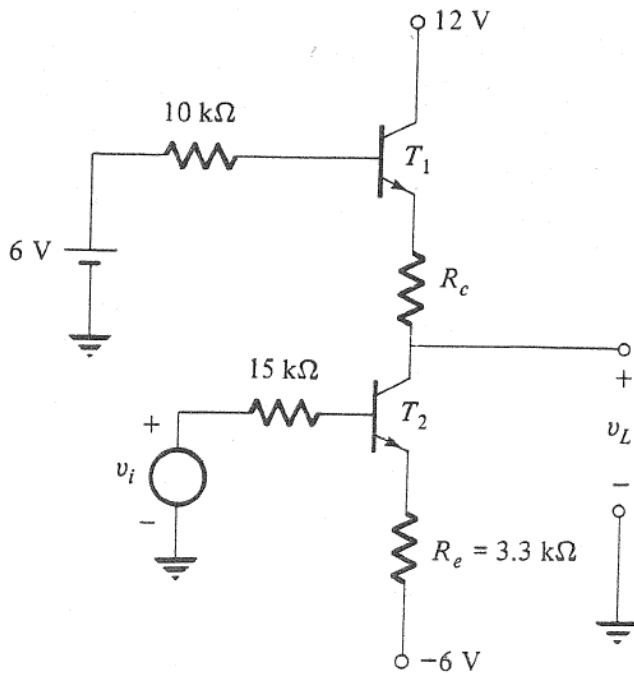


FIGURE P7.7-2