1

a. For the common-emitter characteristics of Fig. 3.13, find the dc beta at an operating point of $V_{CE} = 8$ V and $I_C = 2$ mA.
b. Find the value of α corresponding to this operating point.
c. At $V_{CE} = 8$ V, find the corresponding value of I_{CEO}.
d. Calculate the approximate value of I_{CBO} using the dc beta value obtained in part (a).

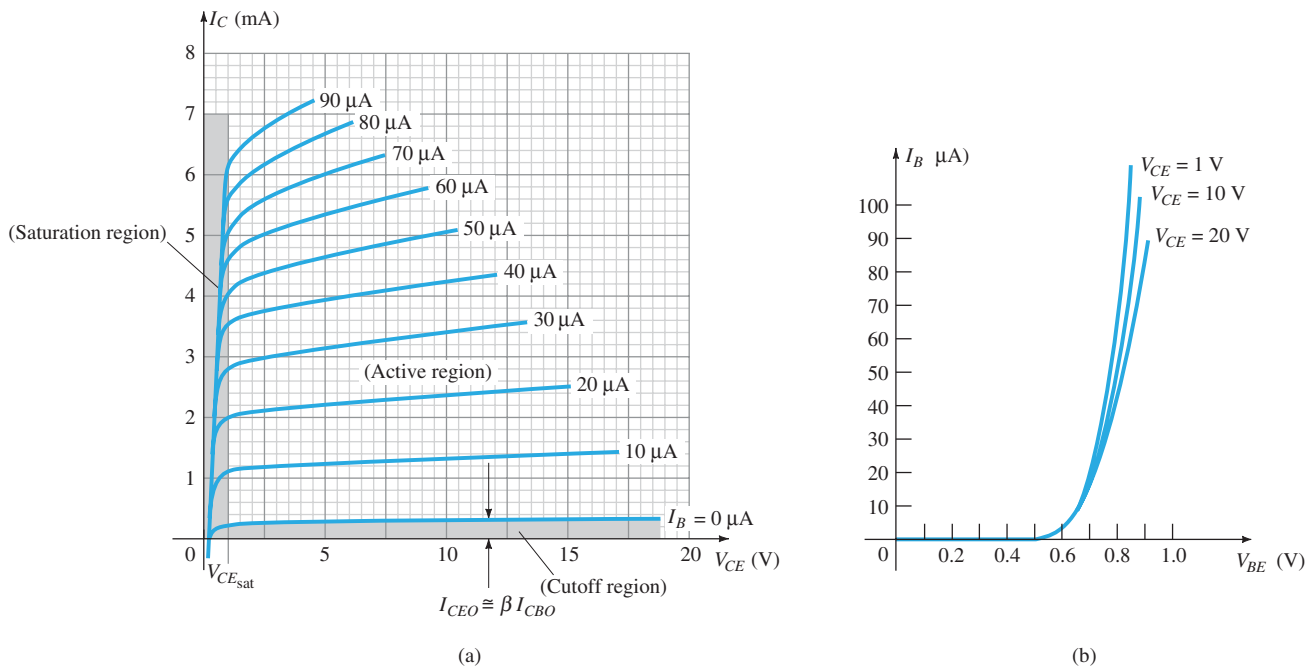

FIG. 3.13

2

Given the information provided in Fig. 4.123, determine:

a. R_C.

b. R_E.

c. R_B.

d. V_{CE}.

e. V_B.

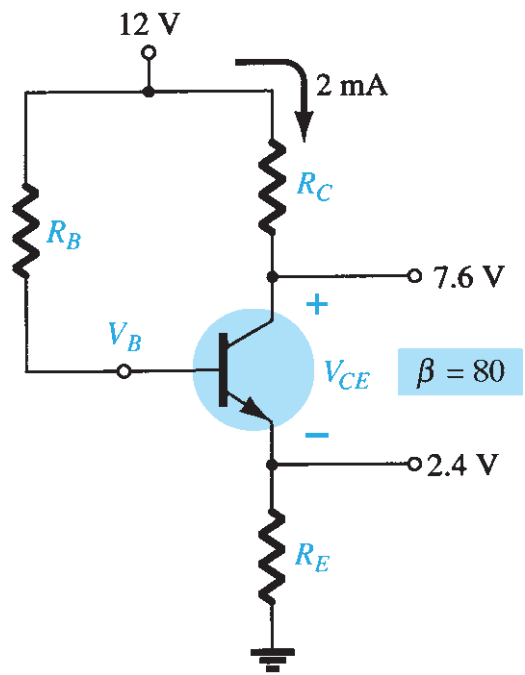

FIG. 4.123

3

For the networks of Fig. 5.164 and Fig. 5.165 :

a. Determine $r_e = \frac{26\ \text{mV}}{I_E}$.

b. Find Z_i and Z_o .

c. Calculate A_v .

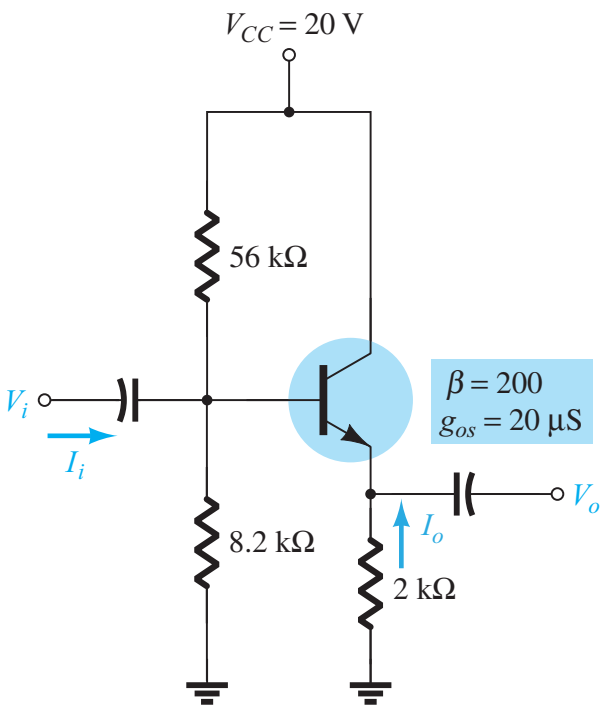

FIG. 5.164

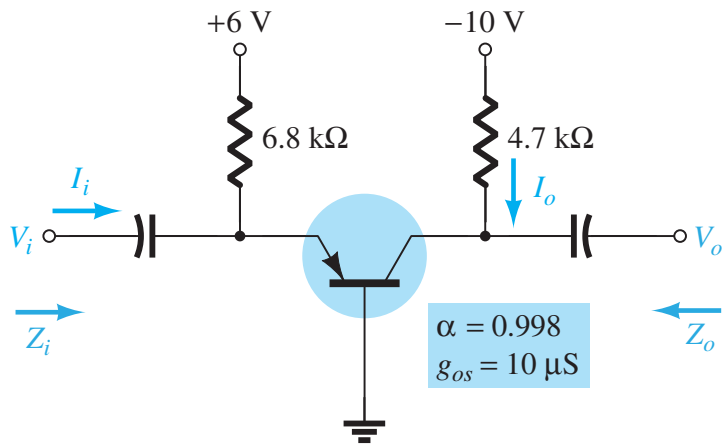

FIG. 5.165

4

For the networks of Fig. 9.80 and Fig. 9.81:

a. Determine $r_e = \frac{26 \text{ mV}}{I_E}$.

b. Find $A_{v_{mid}} = \frac{V_o}{V_i}$.

c. Calculate Z_i .

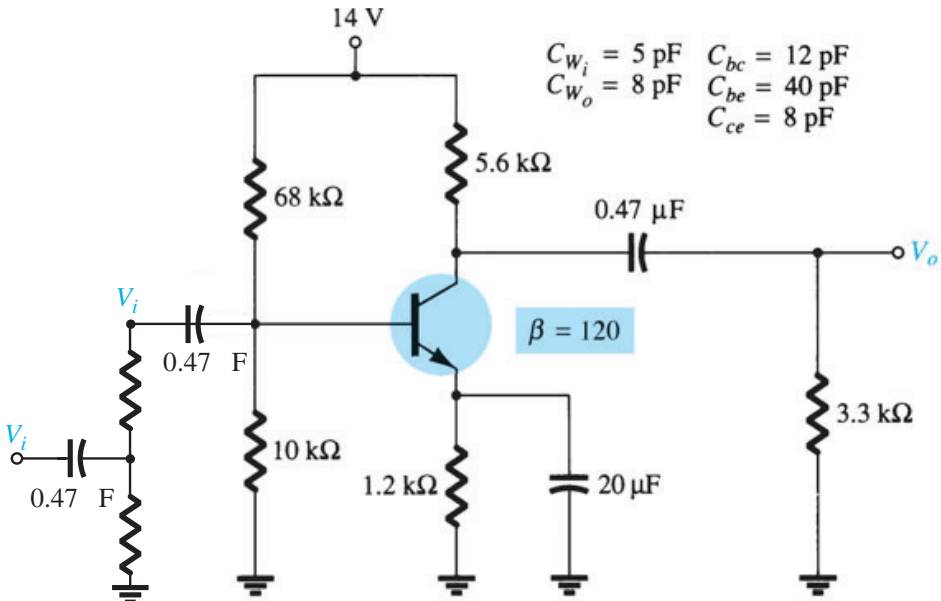

FIG. 9.80

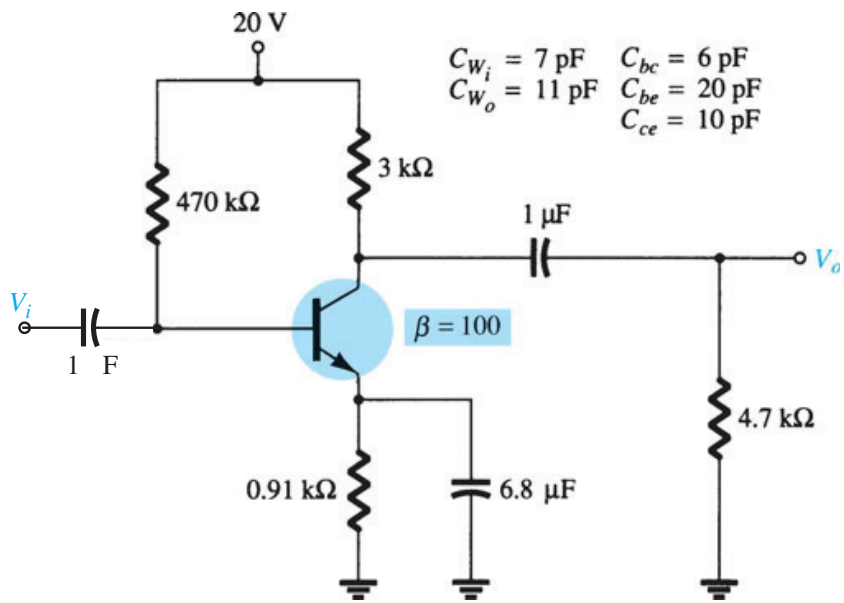

FIG. 9.81

5

If the input voltage to the power amplifier of Fig. 12.36 is 8-V rms, for the networks of Fig. 12.36 and Fig. 12.37,calculate:

a. $P_o(ac)$.

b. $P_i(dc)$.

c. $\%\eta$.

d. Power dissipated by both output transistors.

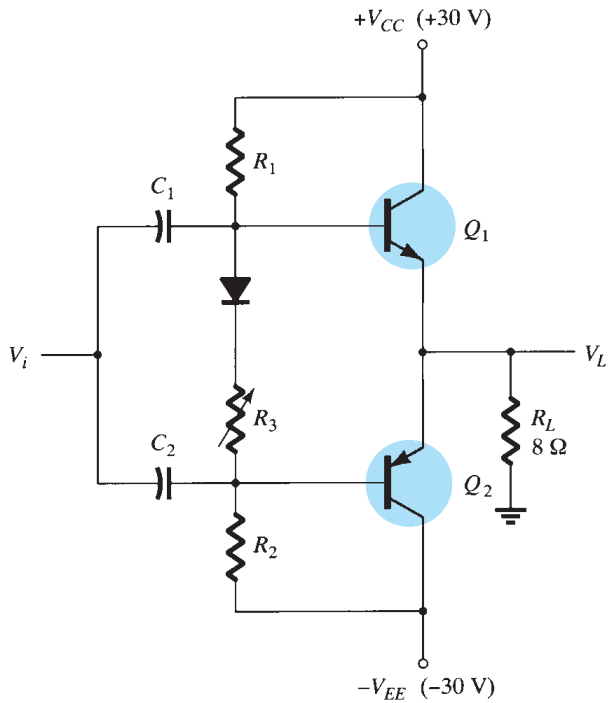

FIG. 12.36

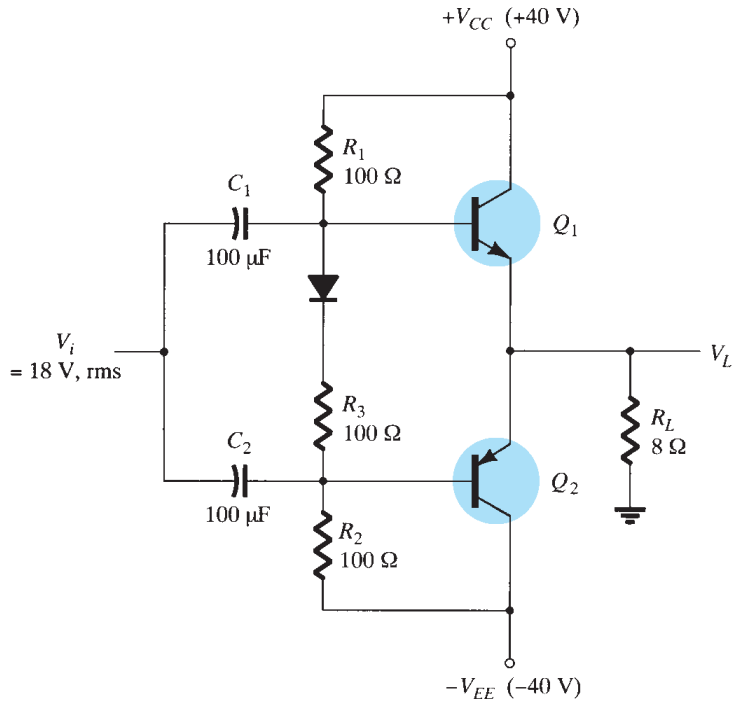

FIG. 12.37