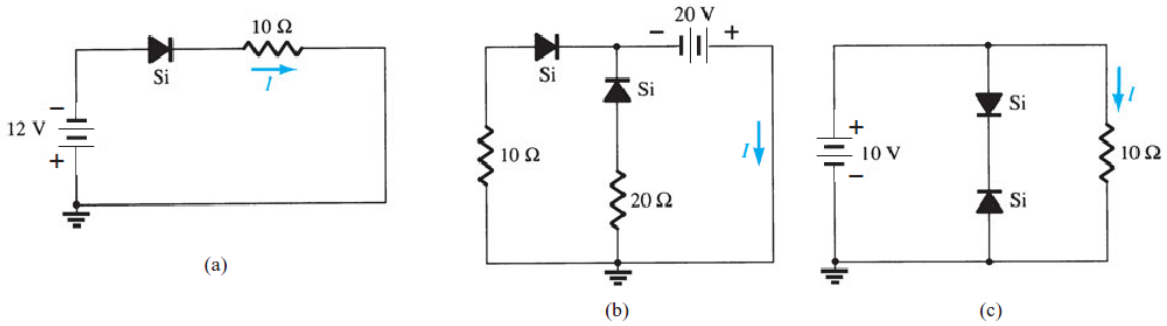
ENEE236 CH2 Homework Problems

5. Determine the current I for each of the configurations of Fig. 2.155 using the approximate equivalent model for the diode.



***26.** For the network of Fig. 2.171, sketch v_o and i_R.

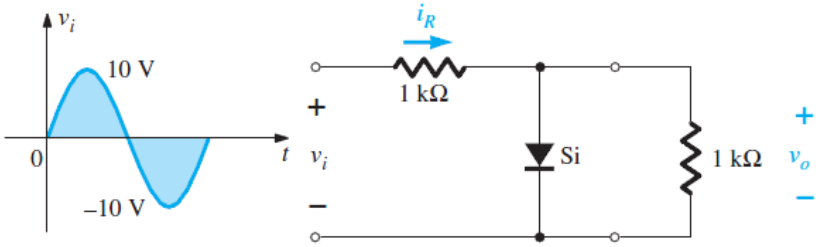


FIG. 2.171

***27.** **a.** Given $P_{max} = 14$ mW for each diode at Fig. 2.172, determine the maximum current rating of each diode (using the approximate equivalent model).

b. Determine I_{max} for the parallel diodes.

c. Determine the current through each diode at $V_{i_{max}}$ using the results of part (b).

d. If only one diode were present, which would be the expected result?

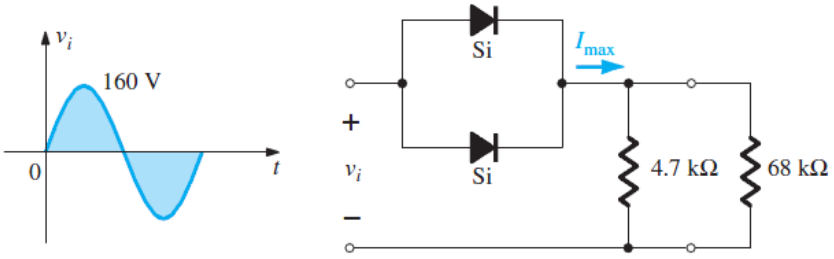


FIG. 2.172

*31. Sketch v_o for the network of Fig. 2.175 and determine the dc voltage available.

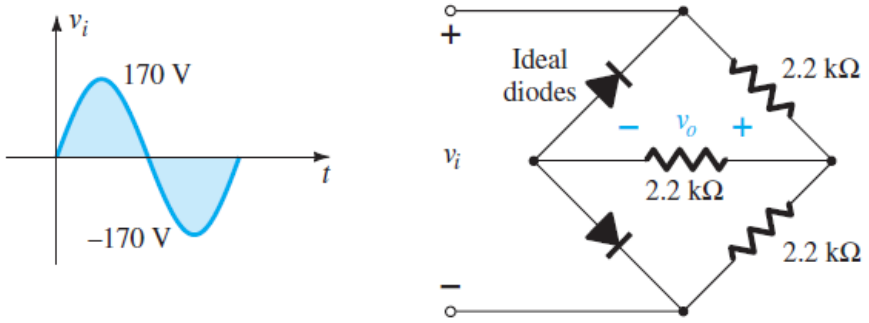


FIG. 2.175

*35. Determine v_o for each network of Fig. 2.179 for the input shown.

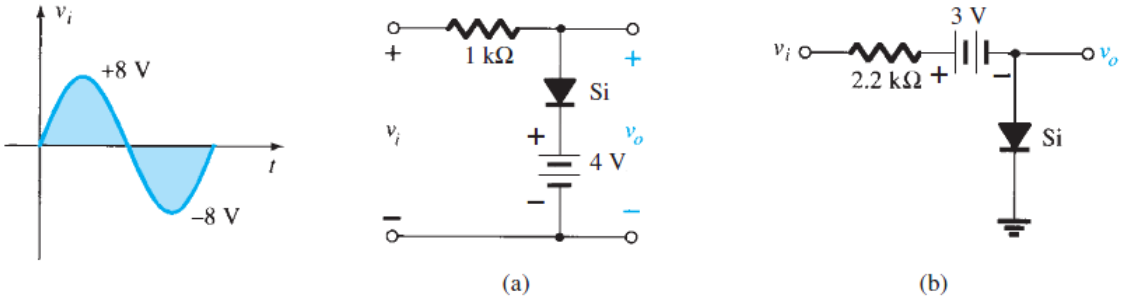


FIG. 2.179

*40. Design a clamper to perform the function indicated in Fig. 2.184.

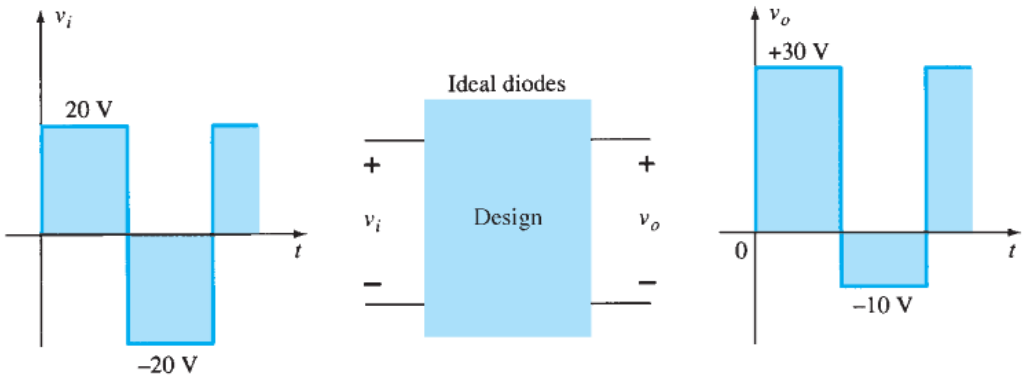


FIG. 2.184

*42. **a.** Determine V_L, I_L, I_Z, and I_R for the network of Fig. 2.186 if $R_L = 180\ \Omega$.
b. Repeat part (a) if $R_L = 470\ \Omega$.
c. Determine the value of R_L that will establish maximum power conditions for the Zener diode.
d. Determine the minimum value of R_L to ensure that the Zener diode is in the "on" state.

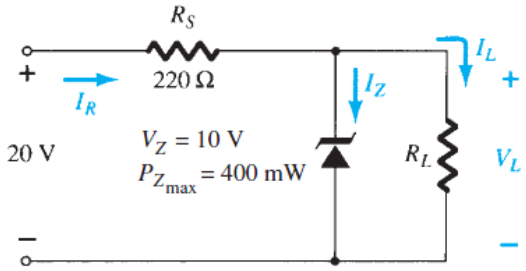


FIG. 2.186