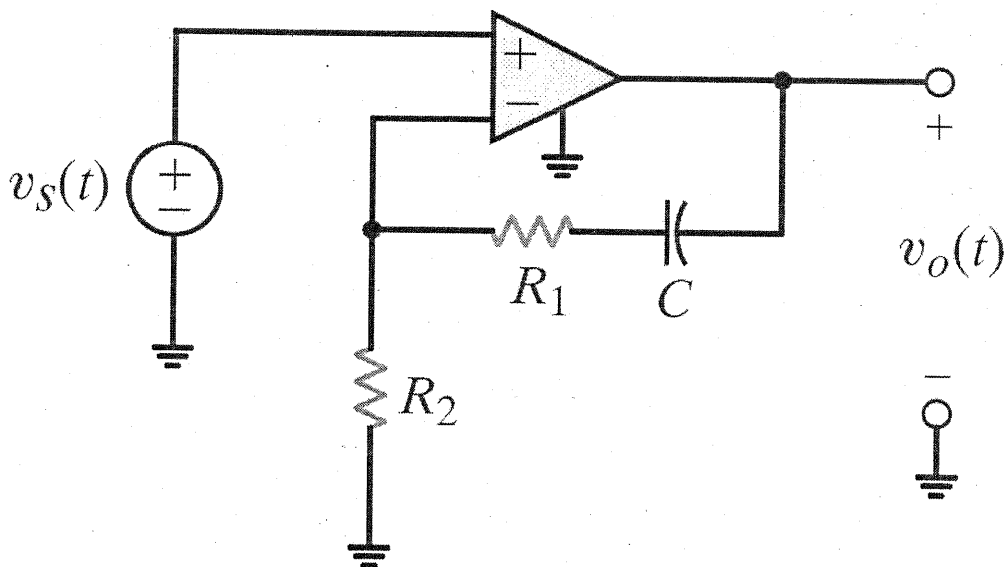


**14.46** Find the transfer function for the network shown in Fig. P14.46.



**Figure P14.46**

**SOLUTION:**

$$\text{Let } Z_2 = R_1 + \frac{1}{sC} \quad \& \quad Z_1 = R_2 \quad \frac{V_o}{V_s} = 1 + \frac{Z_2}{Z_1}$$

$$\frac{V_o}{V_s} = 1 + \frac{R_1 + 1/sC}{R_2} = 1 + \frac{R_1Cs + 1}{R_2Cs} = \frac{(R_1 + R_2)Cs + 1}{R_2Cs}$$

$$\boxed{\frac{V_o}{V_s} = \left(1 + \frac{R_1}{R_2}\right) \left[ \frac{s + \frac{1}{C(R_1 + R_2)}}{s} \right]}$$