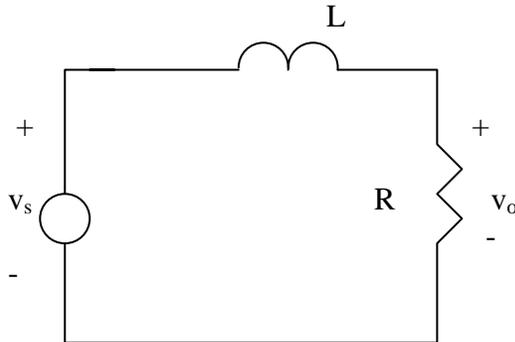


**PS #20 Solutions****Chapter 14, Solution 51.**

The lowpass RL filter is shown below.



$$H = \frac{V_o}{V_s} = \frac{R}{R + j\omega L} = \frac{1}{1 + j\omega L/R}$$

$$\omega_c = \frac{R}{L} = 2\pi f_c \quad \longrightarrow \quad R = 2\pi f_c L = 2\pi \times 5 \times 10^3 \times 40 \times 10^{-3} = \underline{1.256 \text{ k}\Omega}$$

**Chapter 14, Solution 52.**

$$\omega_c = \frac{R}{L} = 2\pi f_c$$

$$R = 2\pi f_c L = (2\pi)(10^5)(40 \times 10^{-3}) = \underline{25.13 \text{ k}\Omega}$$