

**Concept Question 5-22:** Compare Eq. (5.96) with Eq. (5.107) to draw an analogy between RC and RL circuits.  $v_C$ ,  $R$ , and  $C$  of the RC circuit correspond to which parameters of the RL circuit?

$$v_C(t) = \{v_C(\infty) + [v_C(0) - v_C(\infty)]e^{-t/\tau}\} u(t).$$

(series RC circuit with switch action at  $t = 0$ )  
(5.96)

$$i_L(t) = [i_L(\infty) + [i_L(0) - i_L(\infty)]e^{-t/\tau}] u(t),$$

(5.107)

(switch action at  $t = 0$ )

- $v_C$  in RC circuit becomes  $i_L$  in RL circuit
- $R$  in RC circuit becomes  $1/R$  in RL circuit
- $C$  in RC circuit becomes  $1/L$  in RL circuit