Chapter 7, Solution 48.

For t < 0, $u(-t) = 1$,

For t > 0, $u(-t) = 0$, $v(\infty) = 0$
$R_{th} = 20 + 10 = 30$, $\tau = R_{th}C = (30)(0.1) = 3$
$v(t) = v(\infty) + \left[v(0) - v(\infty) \right] e^{-t/\tau}$

$$v(t) = \mathbf{10\,e^{-t/3}\ V}$$

$$i(t) = C\frac{dv}{dt} = (0.1)\left(\frac{-1}{3}\right)10\,e^{-t/3}$$

$$i(t) = \frac{-1}{3}e^{-t/3}\ \mathbf{A}$$