Chapter 6, Solution 61.

(a) $L_{eq} = 20 // (4 + 6) = 20x10 / 30 = \underline{6.667 \text{ mH}}$

Using current division,

$$i_1(t) = \frac{10}{10 + 20} i_s = \underline{e^{-t} \text{ mA}}$$

$$i_2(t) = \underline{2e^{-t} \text{ mA}}$$

(b) $v_o = L_{eq} \dfrac{di_s}{dt} = \dfrac{20}{3} x10^{-3}(-3e^{-t}x10^{-3}) = \underline{-20e^{-t} \ \mu V}$

(c) $w = \dfrac{1}{2} Li_1^2 = \dfrac{1}{2} x20x10^{-3} xe^{-2}x10^{-6} = \underline{1.3534 \text{ nJ}}$