حل التمرين الأول:

بالمطابقة نجد:
$$\begin{cases} i(t)=I_0(1- e^{-t/\tau}) & .1 \\ I(t)=1,2(1- e^{-2t}) \end{cases}$$

$1/\tau = 2$ ومنه $\tau=0,5\ s$

$$E_{(L)}= \frac{1}{2} Li^2_{(t)} = \frac{1}{2} LI_0^2 (1 - e^{-t/\tau})^2 \quad .2$$

$$t = 0 \rightarrow E_{(L)} = 0J \quad .3$$

$$t = \tau \rightarrow E_{(L)} = \frac{1}{2}(1.2)^2(1 - e^{-1})^2 = 0,286J$$

$$t \rightarrow \infty \rightarrow E(L) = \frac{1}{2} LI_0^2 = 0,72J$$