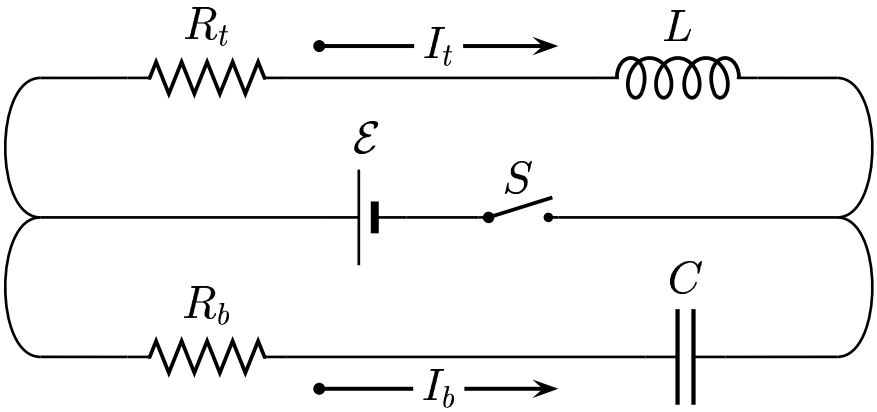

Find I_t , I_b , V_L , and V_C at $t = 0$, just after switch S is closed.

A) $I_t = \dfrac{\mathcal{E}}{R_t}$, $V_L = \mathcal{E}$, $I_b = 0$, and $V_C = \mathcal{E}$.

B) $I_t = 0$, $V_L = \mathcal{E}$, $I_b = \dfrac{\mathcal{E}}{R_b}$, and $V_C = 0$.

C) $I_t = \dfrac{\mathcal{E}}{R_t}$, $V_L = 0$, $I_b = 0$, and $V_C = \mathcal{E}$.

D) $I_t = 0$, $V_L = 0$, $I_b = \dfrac{\mathcal{E}}{R_b}$, and $V_C = 0$.

For the top loop, $\mathcal{E} - V_L - I_t\, R_t = 0$. At $t = 0_+$, the current starts to increase from $I_t = 0$. The loop equation implies that $V_L = \mathcal{E}$.

For the bottom loop, $\mathcal{E} - V_C - I_b\, R_b = 0$. At $t = 0_+$, I_b is maximum and the initial charge on the capacitor $C = 0$ implies that $I_b = \dfrac{\mathcal{E}}{R_b}$. The loop equation implies that $V_C = 0$.

Answer **B**.

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