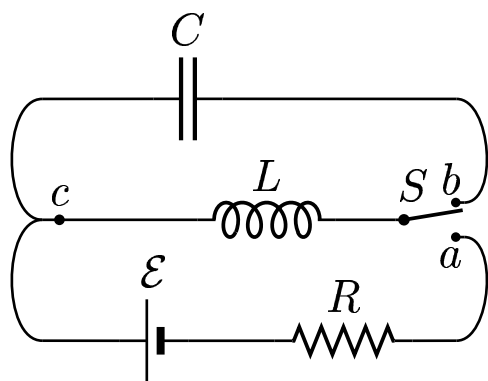


Given: A network containing a battery \mathcal{E} , and capacitor C , and resistor R and an inductor L .



Denote the angular frequency of the “LC” circuit by $\omega = \frac{1}{\sqrt{LC}}$.

The switch S is left at position a for a long period of time. The switch S is then moved from position a to b at $t = 0$.

Find the sign of Q_{right} , the charge on the right-hand plate of the capacitor C and the current direction in the “LC”-loop at the time $t = \frac{3}{8} T$.

- A) Sign of Q_{right} is $-$ and current is clockwise.
- B) Sign of Q_{right} is $-$ and current is counter-clockwise.
- C) Sign of Q_{right} is $+$ and current is clockwise.
- D) Sign of Q_{right} is $+$ and current is counter-clockwise.

At $t = \frac{1}{4} T$, $i = 0$ and $Q_{right} = +$. Immediately after that (i.e., $t = \frac{3}{8} T$)

the sign of I is reversed and Q_{right} remains positive.

Answer **C**.

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