An uncharged capacitor is connected to a dc voltage source via a switch. A resistor is placed in series with the capacitor. The switch is initially open. At $t = 0$, the switch is closed. A very long time after the switch is closed, the current in the circuit is

1. nearly zero
2. at a maximum and decreasing
3. nearly constant but non-zero
An uncharged capacitor is connected to a dc voltage source via a switch. A resistor is placed in series with the capacitor. The switch is initially open. At $t = 0$, the switch is closed. Just after the switch is closed, the current in the circuit is

1. zero and increasing
2. at a maximum and decreasing
3. constant but non-zero
MULTILOOP CIRCUIT WITH CAPACITOR

An uncharged capacitor is connected to a dc voltage source in the circuit shown. The switch is initially open. At \( t = 0 \), the switch is closed. A long time after the switch \( S \) is closed, the current \( i_3 \) is

1) \( \varepsilon / 3R \)
2) \( \varepsilon / 2R \)
3) \( 3\varepsilon / 2R \)
4) \( 2\varepsilon / 3R \)
5) Don’t Know