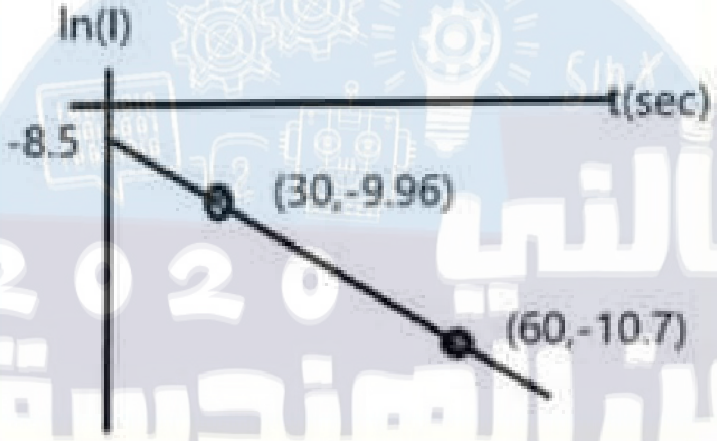
The figure below represents the charging process for a capacitor of value C connected to a power supply (V = 5Volt) across resistance R.

The approximate values of R and C respectively are



Select one:

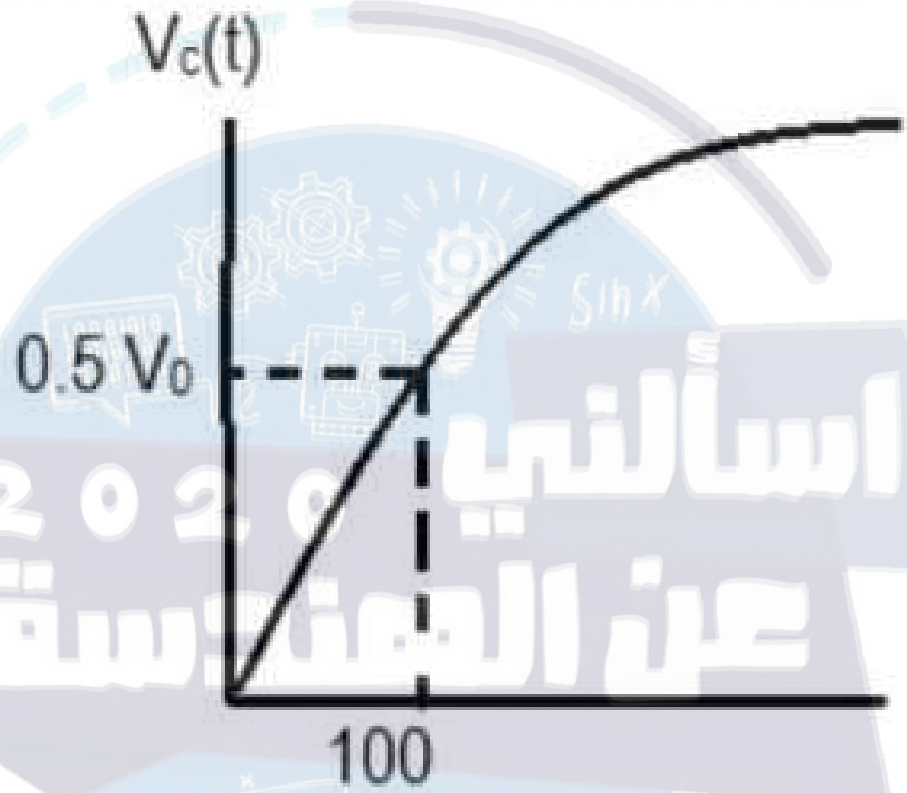
a.
50KΩ , 800μF

b.
20KΩ , 16μF

c.
25KΩ , 1600μF

d.
10KΩ , 80μF

Depending on the graph of V_C versus t for the charging process in *RC* circuit, the time constant τ (in second) is:



Select one:

- a. 145
- b. 187.55
- c. 158.7
- d. 173.12

In the **RC-Time Constant Experiment,** if the capacitance is 80 μF and the resistance is 2.0 kΩ, then the time constant (in ms) of the circuit is:

- 160
- 40
- 52
- 18
- 14

The time constant τ of *RC* circuit depends on:

Select one:

- a. resistance
- b. current
- c. inductance
- d. both a and c

Time left 0:16:56

In a RC circuit with power supply with an emf of 20 V, capacitance 3 μF, and resistance 1000 Ω, the slope (in units of C/s) of the curve of Q (the charge on the capacitor) vs t (the time elapsed after starting the charging) at t = 0 s is:

- a. 0.2
- b. -0.2
- c. 0
- d. 0.02
- e. -0.02

Next page

Time left 0:10:46

In a RC circuit starting from zero capacitor charge, during charging:

a. The potential across the capacitor is decreasing and its charge is increasing.

b. The magnitude of the potential difference across the capacitor is increasing but is decreasing across the resistor.

c. The current in the circuit is decreasing but the potential difference across the capacitor is constant.

d. The time it takes to charge the capacitor to half its maximum charge is half the time needed to fully charge the capacitor.

e. The current decreases with time linearly.

Next page

Time left 0:07:25

Question 10

Not yet answered

Marked out of 4.00

Flag question

In a RC circuit with power supply with an emf of 10 V, capacitance 5 μF, and resistance 1000 Ω, the slope (in units of C/s) of the curve of Q (the charge on the capacitor) vs t (the time elapsed after starting the charging) at t = 0 s is:

- a. 0
- b. -0.1
- c. -0.01
- d. 0.1
- e. 0.01

Clear my choice

Next page

Time left 0:01:16

Question 13

Not yet answered

Marked out of 4.00

Flag question

In a RC circuit starting from zero capacitor charge, during charging:

- a. The time it takes to charge the capacitor to half its maximum charge is half the time needed to fully charge the capacitor.
- b. The potential difference across the capacitor is decreasing and its charge is increasing with time.
- c. The current in the resistor decreases with time linearly.
- d. The current in the resistor is decreasing but the potential difference across the capacitor is constant.
- e. The the current in the resistor is decreasing and the magnitude of the potential difference across the capacitor is increasing.

Clear my choice

Finish attempt ...