Congratulations! You passed!

TO PASS 70% or higher

Keep Learning

GRADE 90%

Module 6 Quiz

LATEST SUBMISSION GRADE

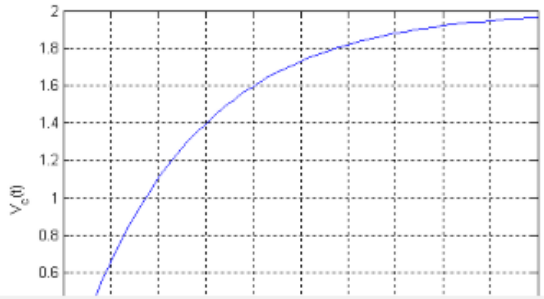
90%

1. By rotating the dial of an antenna tuner, what are we manipulating within the circuit element? 1 / 1 point

- Resistance
- Capacitance
- Inductance

Correct

2. An RC circuit has the following response. The units on the time axis are in seconds, but note the scaling of 10^{-3} on the axis (so the first tick mark is 0.5 milliseconds). Determine the time constant, in milliseconds, and enter that value in the box below without the units. 1 / 1 point

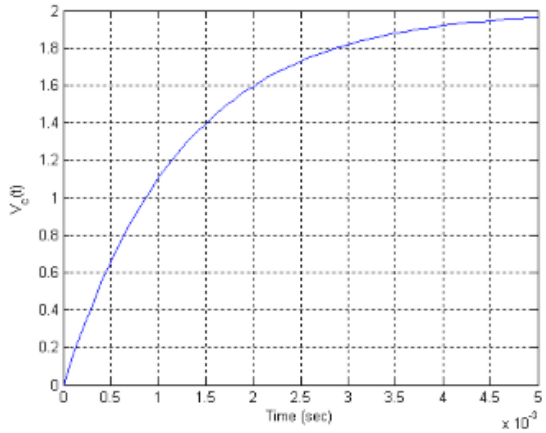


Module 6 Quiz
Graded Quiz • 20 min

Due Apr 27, 12:29 PM IST

2. An RC circuit has the following response. The units on the time axis are in seconds, but note the scaling of 10^{-3} on the axis (so the first tick mark is 0.5 milliseconds). Determine the time constant, in milliseconds, and enter that value in the box below without the units.

1 / 1 point

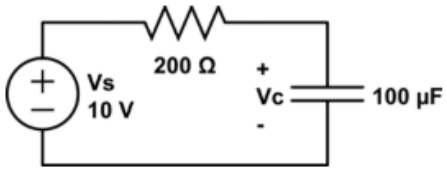


1.264

Correct

3. Suppose that the initial voltage on the capacitor in the following circuit is 1V, that is, $V_c(0) = 1v$. Select the most appropriate expression for $V_{c(t)}$ for t > 0 sec.

1 / 1 point



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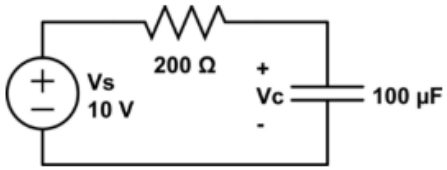
3. Suppose that the initial voltage on the capacitor in the following circuit is 1V, that is, $V_c(0)$ = 1v. Select the most appropriate expression for $V_{c(t)}$ for t > 0 sec.

1 / 1 point



- (●) $Vc(t) = 10 - 9e^{-50t}$
- ( ) $Vc(t) = 10(1 - e^{-50t})$
- ( ) $Vc(t) = 10(1 - e^{-0.02t})$
- ( ) $Vc(t) = 10(1 - e^{-5t}) + e^{-5t}$
- ( ) $Vc(t) = 500(1 - e^{-50t})$

✓ Correct

4. An RC circuit has the following response. Determine the time constant, in milliseconds, and enter that value in the box below without the units.

1 / 1 point

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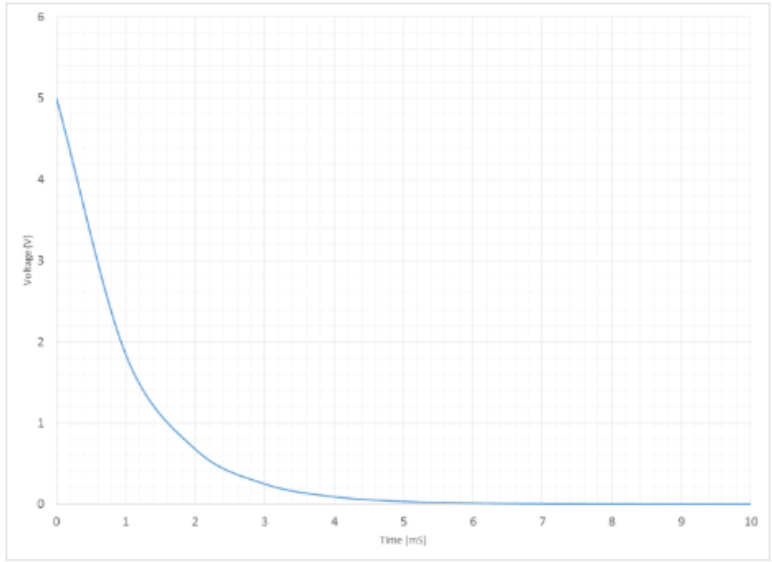
4. An RC circuit has the following response. Determine the time constant, in milliseconds, and enter that value in the box below without the units. 1 / 1 point



1

Correct

5. For the following circuit. $V_s = 40V$, $R_1 = 18\Omega$ $R_2 = 18\Omega$ $R_3 = 18\Omega$ $R_4 = 9\Omega$ $R_5 = 9\Omega$ $R_6 = 3\Omega$ $L = 5mH$ and $C = 10\mu F$. 1 / 1 point

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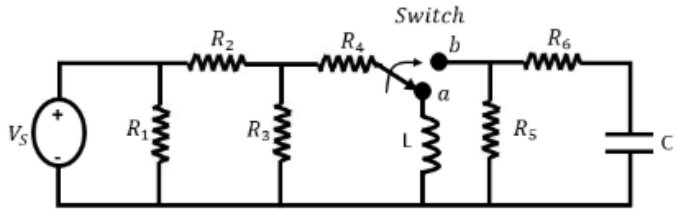
5. For the following circuit. $V_s = 40V$, $R_1 = 18\Omega$. $R_2 = 18\Omega$. $R_3 = 18\Omega$. $R_4 = 9\Omega$. $R_5 = 9\Omega$. $R_6 = 3\Omega$. $L = 5mH$ and $C = 10\mu F$. **1 / 1 point**



If the switch is at position a for a long time, calculate the R-L time constant for the inductor.

Please enter your values in MILLISECOND in the box below without units. Also, please wound of the decimal to three places if necessary.

0.277

Correct

6. For the circuit in Problem 5, calculate the current flowing through the inductor L for DC steady state. **0 / 1 point**

Put your values in Amps in the box below without units. Also, round off the decimal to three decimal places if needed.

1

Incorrect

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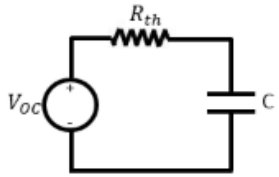
7. For the circuit in Problem 5, calculate the equivalent Thevenin voltage, V_{OC}, in Volts as for the following circuit. 1 / 1 point

Put your values in Ω in box below. Round off the decimals to three places if needed.



6.66

Correct

8. For the circuit in problem 5, calculate the time constant when the switch is connected to point b. 1 / 1 point

Put your values in μsec in box below. Round off the values to three decimal places if needed.

90

Correct

9. For the circuit in Problem 5, when the switch is moved from point a to point b, select a correct voltage equation for voltage across capacitor, $V_C(t)$, assuming that the initial voltage $v_C(0) = 0Volts$. 1 / 1 point

- $V_C(t) = 6.67(1 - exp^{-11.11t \times 10^3})$

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8. For the circuit in problem 5, calculate the time constant when the switch is connected to point b. 1 / 1 point

Put your values in μsec in box below. Round off the values to three decimal places if needed.

90

Correct

9. For the circuit in Problem 5, when the switch is moved from point a to point b, select a correct voltage equation for voltage across capacitor, $V_C(t)$, assuming that the initial voltage $v_C(0) = 0Volts$. 1 / 1 point

- $V_C(t) = 6.67(1 - exp^{-11.11t \times 10^3})$
- $V_C(t) = 13.33(1 - exp^{-t \times 10^3})$
- $V_C(t) = 13.33(1 - exp^{-11.11t \times 10^3})$
- $V_C(t) = 6.67(1 - exp^{-t \times 10^3})$

Correct

10. You are given the following First Order Differential Equation. The current i is in Amps and the time t in seconds. 1 / 1 point

Calculate the time constant τ .

$20\frac{di(t)}{dt} + 60i(t) = 200$

Put your answer in milli-seconds in box below with no units.

333.33

Correct