

Unit 7 - First Order and Second Order Circuits

Course outline

How to access the portal

Unit 0

Basic Circuit Elements and Waveforms

Mesh and Node Analysis

Network Theorems -1

Network Theorems -2

First Order and Second Order Circuits

First Order RC Circuits

First Order RL Circuits

Singularity Functions

Step Response of RC and RL Circuits

Second Order Response

Quiz : Assignment 5

Assignment 5 solution

Feedback form for week 5

Laplace Transform and its Application

Circuit Analysis Using Laplace Transform

Two Port Network

Sinusoidal Steady State Analysis - 1

Sinusoidal Steady State Analysis - 2

State Variable Analysis

Analogous Systems

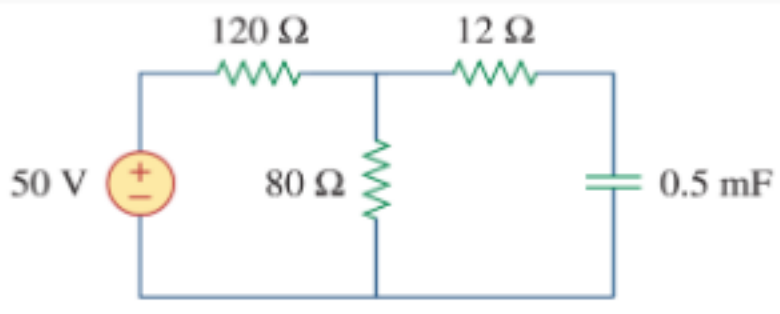
Assignment 5

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-09-04, 23:59 IST.

1) Find the time constant for the RC circuit in Fig. below.

2 points



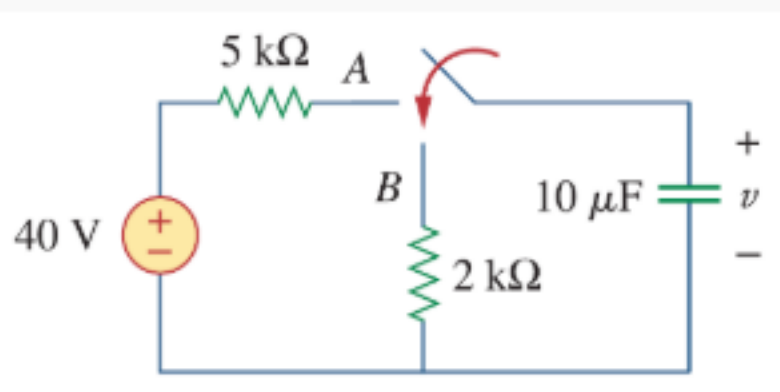
- 30ms
- 15ms
- 20ms
- 10ms

No, the answer is incorrect. Score: 0

Accepted Answers: 30ms

2) The switch in Fig. moves instantaneously from A to B at $t = 0$. Find 'v' for $t > 0$.

2 points



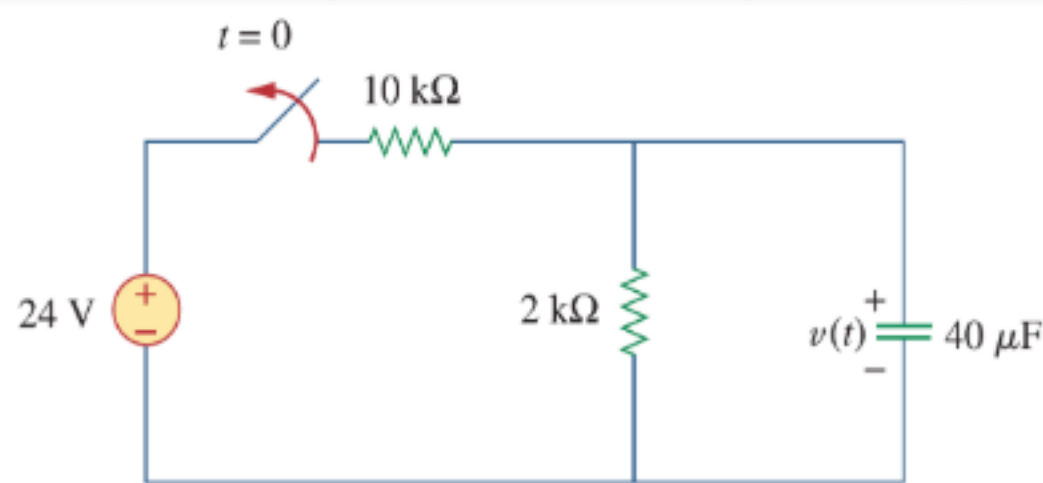
- $40e^{-50t} V$
- $50e^{-50t} V$
- $10e^{-50t} V$
- $70e^{-50t} V$

No, the answer is incorrect. Score: 0

Accepted Answers: $40e^{-50t} V$

3) The switch in Fig. has been closed for a long time, and it opens at $t = 0$. Find $v(t)$ for $t > 0$.

2 points



- $5e^{-12.5t} V$
- $4e^{-12.5t} V$
- $-4e^{-12.5t} V$
- $3e^{-12.5t} V$

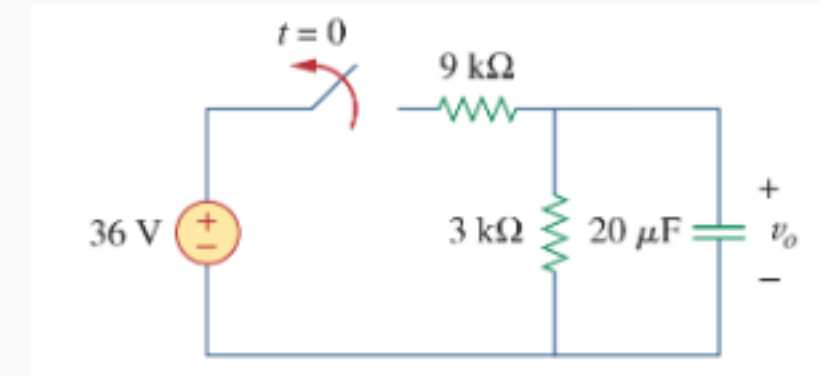
No, the answer is incorrect. Score: 0

Accepted Answers: $4e^{-12.5t} V$

4) For the circuit in Fig., find $v_0(t)$ for $t > 0$.

2 points

Determine the time necessary for the capacitor voltage to decay to one-third of its value at $t = 0$.



- $9e^{-16.667t} V, 65.92ms$
- $9e^{16.667t} V, 65.92ms$
- $9e^{-16.667t} V, 60.92ms$
- $19e^{-16.667t} V, 65.92ms$

No, the answer is incorrect. Score: 0

Accepted Answers: $9e^{-16.667t} V, 65.92ms$

5) A series RLC circuit has $R=10k$ ohm, $L=0.1$ mH, and $C=10$ micro F. What type of damping is exhibited by the circuit?

2 points

- Underdamped
- Overdamped
- Critically damped

No, the answer is incorrect. Score: 0

Accepted Answers: Overdamped