

Unit 8 - Laplace Transform and its Application

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

Laplace Transform and its Application

- Step Response of Second Order Circuits-First Order & Second Order Circuits Continued..

- Step Response of Parallel RLC Circuit-First Order & Second Order Circuits Continued..

- Definition of the Laplace Transform

- Properties of the Laplace Transform

- Inverse Laplace Transform

- Quiz : Assignment 6**

- Assignment 6 solution

- Feedback form for week 6

Circuit Analysis Using Laplace Transform

Two Port Network

Sinusoidal Steady State Analysis - 1

Sinusoidal Steady State Analysis - 2

State Variable Analysis

Analogous Systems

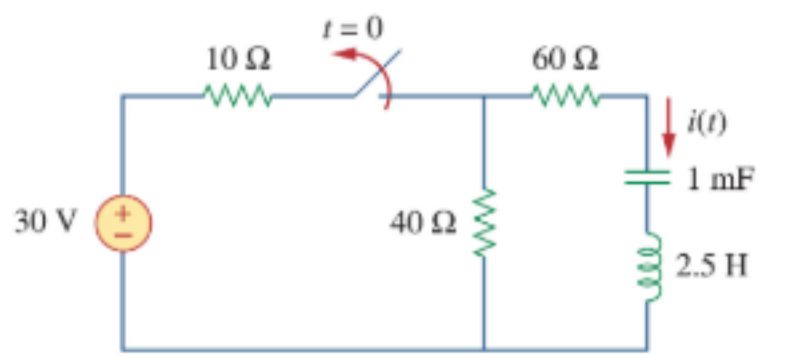
Assignment 6

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

Due on 2019-09-11, 23:59 IST.

- 1) Find $i(t)$ for $t > 0$ in the circuit of Fig. given below.

2 points



$-9.6te^{-20t} A$

$9.6te^{-20t} A$

$-9.6te^{-10t} A$

$-9te^{-20t} A$

No, the answer is incorrect. Score: 0

Accepted Answers: $-9.6te^{-20t} A$

- 2) Obtain the Laplace transform of the following function:

$$te^{-t} \sin 2tu(t)$$

2 points

$\frac{4(s+1)}{((s+1)^2+4)^2}$

$\frac{4(s)}{((s+1)^2+4)^2}$

$\frac{4(s+2)}{((s+1)^2+4)^2}$

$\frac{4(s+1)}{((s+2)^2+4)^2}$

No, the answer is incorrect. Score: 0

Accepted Answers: $\frac{4(s+1)}{((s+1)^2+4)^2}$

- 3) Find the Laplace transform of the following function:

$$\frac{d^n}{dt^n} \delta(t)$$

2 points

s^{n-1}

s^n

s^{n-2}

s

No, the answer is incorrect. Score: 0

Accepted Answers: s^n

- 4) Find the Laplace transform of the following signal:

$$g(t) = (4 + 3e^{-2t})u(t)$$

2 points

s

$\frac{4}{s} + \frac{3}{s+2}$

$\frac{9}{s} + \frac{3}{s+2}$

$\frac{4}{s} + \frac{9}{s+2}$

No, the answer is incorrect. Score: 0

Accepted Answers: $\frac{4}{s} + \frac{3}{s+2}$

- 5) Determine the initial and final values of $f(t)$, if they exist, given that:

2 points

$$F(s) = \frac{s^2 - 2s + 1}{(s-2)(s^2 + 2s + 4)}$$

1,0

0,1

1, does not exist

2,1

No, the answer is incorrect. Score: 0

Accepted Answers: 1, does not exist