

Quiz #3

Due Mar 22 at 9:50am	Points 100	Questions 5	Available Mar 22 at 9:40am - Mar 22 at 9:55am 15 minutes	Time Limit 10 Minutes
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This quiz was locked Mar 22 at 9:55am.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	8 minutes	50 out of 100

Score for this quiz: **50** out of 100
Submitted Mar 22 at 9:47am
This attempt took 8 minutes.

Question 1

0 / 30 pts

A low-pass filter is implemented using $R=1\text{K}\Omega$ and $C = 2\text{ }\mu\text{F}$ (series of resistor and capacitor, and capacitor is parallel to output).
What is the magnitude of the transfer function at frequency 1000 rad/s?

You Answered

0.316

Correct Answers

0.447 (with margin: 0.001)

Question 2

15 / 15 pts

Transfer function of the system is

$$H(s) = \frac{1}{s+1.1}$$

Is system stable?

Correct!

☒ yes

☐ no

☐ only for time $t < 1.1$

☐ only for time $t > 1.1$

Question 3

15 / 15 pts

Transfer function of the system is

$$H(s) = \frac{1}{s+1.1}$$

What is the value of the impulse response $h(t)$ at time $t=1.1$ s?

Correct!

0.298

Correct Answers

0.298 (with margin: 0.001)

Question 4

0 / 20 pts

For the function:

$$x(t) = 4 + 8 \cdot \sin(20 \cdot t) + 2 \cdot \cos(40 \cdot t)$$

How many frequency components do you have in the Fourier transform of $x(t)$?

You Answered

Correct Answers

5 (with margin: 0)

Question 5

20 / 20 pts

For the function:

$$x(t) = 4 + 8 \cdot \sin(20 \cdot t) + 2 \cdot \cos(40 \cdot t)$$

What is the value of phase of the Fourier transform of $x(t)$ at frequency $\Omega = -20$ [radians/second] in DEGREES?

Correct!

Correct Answers

90 (with margin: 0)

Quiz Score: **50** out of 100