Started on	Thursday, 4 April 2019, 6:04 PM
State	Finished
Completed on	Thursday, 4 April 2019, 6:04 PM
Time taken	32 secs
Grade	**100.00** out of 100.00

Question 1

Correct

Mark 15.00 out of 15.00

$$H(j\omega) = \frac{110(j\omega)}{(j\omega+10)(j\omega+100)}$$

E.1a_9ed

a) What is the zero of this function?

$z_1 =$ 0 ✓

b) What are the two poles of this function?

$p_1 =$ 10 ✓ (lower frequency)

$p_2 =$ 100 ✓ (higher frequency)

c) What is the gain K after putting this function in *Standard Form*?

K = .11 ✓

Correct

Marks for this submission: 15.00/15.00.

Question 2

Correct

Mark 17.00 out of 17.00

P14.33a_6ed

Given

$$H(s)=\frac{50}{s+50}$$

Create the straight-line amplitude and phase Bode plot.

What is the amplitude corner frequency?

ω_c = 50 ✓ rad/sec`

What are the three phase inflection frequencies?

0° for ω ≤ 5 ✓ rad/sec

-45° for ω = 50 ✓ rad/sec

-90° for ω ≥ 500 ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

Question 3

Correct

Mark 17.00 out of 17.00

P14.33d_6ed

Given

$$H(s)=\frac{3{,}000}{s+3{,}000}$$

Create the straight-line amplitude and phase Bode plot.

What is the amplitude corner frequency and the value of A_{dB} at 1 rad/sec?

ω_c = 3000 ✓ rad/sec

A_{dB} at 1 rad/sec = 0 ✓ dB

What are the three phase inflection frequencies?

0° for ω ≤ 300 ✓ rad/sec

-45° for ω = 3000 ✓ rad/sec

-90° for ω ≥ 30000 ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

Question 4

Correct

Mark 17.00 out of 17.00

P14.33b_6ed

Given

$$H(s) = \frac{s}{s+50}$$

Create the straight-line amplitude and phase Bode plot.

What is the amplitude corner frequency and the value of A_{dB} at 1 rad/sec?

ω_c = 50 ✓ rad/sec

A_{dB} at 1 rad/sec = -34 ✓ dB

What are the three phase inflection frequencies?

90° for $\omega \leq$ 5 ✓ rad/sec

45° for ω = 50 ✓ rad/sec

0° for $\omega \geq$ 500 ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

Question 5

Correct

Mark 17.00 out of 17.00

P14.33c_6ed

Given

$$H(s) = \frac{s}{s+3{,}000}$$

Create the straight-line amplitude and phase Bode plot.

What is the amplitude corner frequency and the value of A_{dB} at 1 rad/sec?

ω_c = 3000 ✓ rad/sec

A_{dB} at 1 rad/sec = -69.5 ✓ dB

What are the three phase inflection frequencies?

90° for $\omega \leq$ 300 ✓ rad/sec

45° for ω = 3000 ✓ rad/sec

0° for $\omega \geq$ 30000 ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

Question 6

Correct

Mark 17.00 out of 17.00

P14.33e_6ed

Given

$$H(s) = \frac{100}{s+125}$$

Create the straight-line amplitude and phase Bode plot.

What is the amplitude corner frequency and the value of A_{dB} at 1 rad/sec?

ω_c = 125 ✓ rad/sec

A_{dB} at 1 rad/sec = -1.9 ✓ dB

What are the three phase inflection frequencies?

0° for $\omega \leq$ 12.5 ✓ rad/sec

-45° for ω = 125 ✓ rad/sec

-90° for $\omega \geq$ 1250 ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

◄ Homework 9 - Chapter 13

Jump to... ▼

Homework 11 - Chapter 14 ►