Started on	Monday, 3 April 2017, 12:25 PM
State	Finished
Completed on	Tuesday, 4 April 2017, 8:58 PM
Time taken	1 day 8 hours
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?

$z_1 = \boxed{0}$ ✔

b) What are the two poles of this function?

$p_1 = \boxed{10}$ ✔ (lower frequency)

$p_2 = \boxed{100}$ ✔ (higher frequency)

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

$K = \boxed{0.11}$ ✔

Correct

Marks for this submission: 15.00/15.00.

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?

$\omega_c =$ [50] ✓ rad/sec

A_{dB} at 1 rad/sec = [-33.979] ✓ dB

What are the three phase inflection frequencies?

90° for $\omega \leq$ [5] ✓ rad/sec

45° for $\omega =$ [50] ✓ rad/sec

0° for $\omega \geq$ [500] ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

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?

$\omega_c = $ 3000 ✓ rad/sec

A_{dB} at 1 rad/sec = -0.000000965 ✓ dB

What are the three phase inflection frequencies?

0° for $\omega \leq$ 300 ✓ rad/sec

-45° for $\omega =$ 3000 ✓ rad/sec

-90° for $\omega \geq$ 30000 ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

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?

$\omega_c =$ [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 $\omega =$ [3000] ✓ rad/sec

0° for $\omega \geq$ [30000] ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

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?

$\omega_c =$ [50] ✓ rad/sec`

What are the three phase inflection frequencies?

0° for $\omega \leq$ [5] ✓ rad/sec

-45° for $\omega =$ [50] ✓ rad/sec

-90° for $\omega \geq$ [500] ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.

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?

$\omega_c = $ [125] ✓ rad/sec

A_{dB} at 1 rad/sec = [-1.94] ✓ dB

What are the three phase inflection frequencies?

0° for $\omega \leq$ [12.5] ✓ rad/sec

-45° for $\omega =$ [125] ✓ rad/sec

-90° for $\omega \geq$ [1250] ✓ rad/sec

Correct

Marks for this submission: 17.00/17.00.