Started on	Monday, 10 April 2017, 4:58 AM
State	Finished
Completed on	Monday, 10 April 2017, 5:00 AM
Time taken	1 min 57 secs
Grade	**49.00** 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 ✓

a) $z_1 = 0$

b) $p_1 = 10$ $p_2 = 100$

c) K = 0.110

Correct

Marks for this submission: 15.00/15.00.

Question 2

Partially correct

Mark 3.40 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 = 3 ✗ dB

What are the three phase inflection frequencies?

90° for $\omega \leq$ 3 ✗ rad/sec

45° for $\omega =$ 40 ✗ rad/sec

0° for $\omega \geq$ 10000 ✗ rad/sec

ω_c = 50 rad/sec A_{dB} at 1 rad/sec = -33.979 dB

90° for $\omega \leq$ 5 rad/sec

45° for ω = 50 rad/sec

0° for $\omega \geq$ 500 rad/sec

Partially correct

Marks for this submission: 3.40/17.00.

Question 3

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 = -69.55 ✓ dB

What are the three phase inflection frequencies?

90° for ω ≤ 300 ✓ rad/sec

45° for ω = 3000 ✓ rad/sec

0° for ω ≥ 30000 ✓ rad/sec

ω_c = 3,000 rad/sec A_{dB} at 1 rad/sec = -69.5454 dB

90° for ω ≤ 300 rad/sec

45° for ω = 3,000 rad/sec

0° for ω ≥ 30,000 rad/sec

Correct

Marks for this submission: 17.00/17.00.

Question 4

Not answered

Mark 0.00 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 = [ ] ✗ rad/sec

A_{dB} at 1 rad/sec = [ ] ✗ dB

What are the three phase inflection frequencies?

0° for $\omega \leq$ [ ] ✗ rad/sec

-45° for ω = [ ] ✗ rad/sec

-90° for $\omega \geq$ [ ] ✗ rad/sec

ω_c = 3,000 rad/sec A_{dB} at 1 rad/sec = -69.5454 dB

90° for $\omega \leq$ 300 rad/sec

45° for ω = 3,000 rad/sec

0° for $\omega \geq$ 30,000 rad/sec

Question 5

Partially correct

Mark 13.60 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 = -3 ✗ 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

ω_c = 125 rad/sec A_{dB} at 1 rad/sec = -1.9382 dB

0° for $\omega \leq$ 12.5 rad/sec

-45° for ω = 125 rad/sec

-90° for $\omega \geq$ 1,250 rad/sec

Partially correct

Marks for this submission: 13.60/17.00.

Question 6

Incorrect

Mark 0.00 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 = 35.35 ✗ rad/sec`

What are the three phase inflection frequencies?

0° for ω ≤ 50 ✗ rad/sec

-45° for ω = 0 ✗ rad/sec

-90° for ω ≥ 90 ✗ rad/sec

ω_c = 50 rad/sec

0° for ω ≤ 5 rad/sec

-45° for ω = 50 rad/sec

-90° for ω ≥ 500 rad/sec

Incorrect

Marks for this submission: 0.00/17.00.