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**Started on** Monday, 30 August 2021, 12:20 PM

**State** Finished

**Completed on** Monday, 30 August 2021, 12:44 PM

**Time taken** 24 mins 48 secs

**Grade** 8.00 out of 10.00 (80%)

### Question 1

Correct

Mark 2.00 out of 2.00

If a feedback control system has its open loop transfer function  $G(s)H(s)=K/[(s-2)(s^2+3s+7)]$  has the root locus plot which intersects the imaginary axis at  $s=0$ , then the value of  $K$  at this point will be

Select one:

- a. 8
- b. 14
- c. -8
- d. -14



The correct answer is: 14

### Question 2

Correct

Mark 2.00 out of 2.00

Number of roots of characteristic equation is equal to the number of \_\_\_\_\_

Select one:

- a. Branches
- b. Poles
- c. Stem
- d. Root



The correct answer is: Branches

## Question 3

Correct

Mark 2.00 out of 2.00

The loop transfer function of an LTI system is  $G(s)H(s) = [K(s+4)(s+8)]/[s(s+5)(s+6)]$ . For  $K>0$ , the point on the real axis that does not belong to the root locus of the system is

Select one:

- a. -5.5
- b. -6.5
- c. -8.5
- d. -3.5

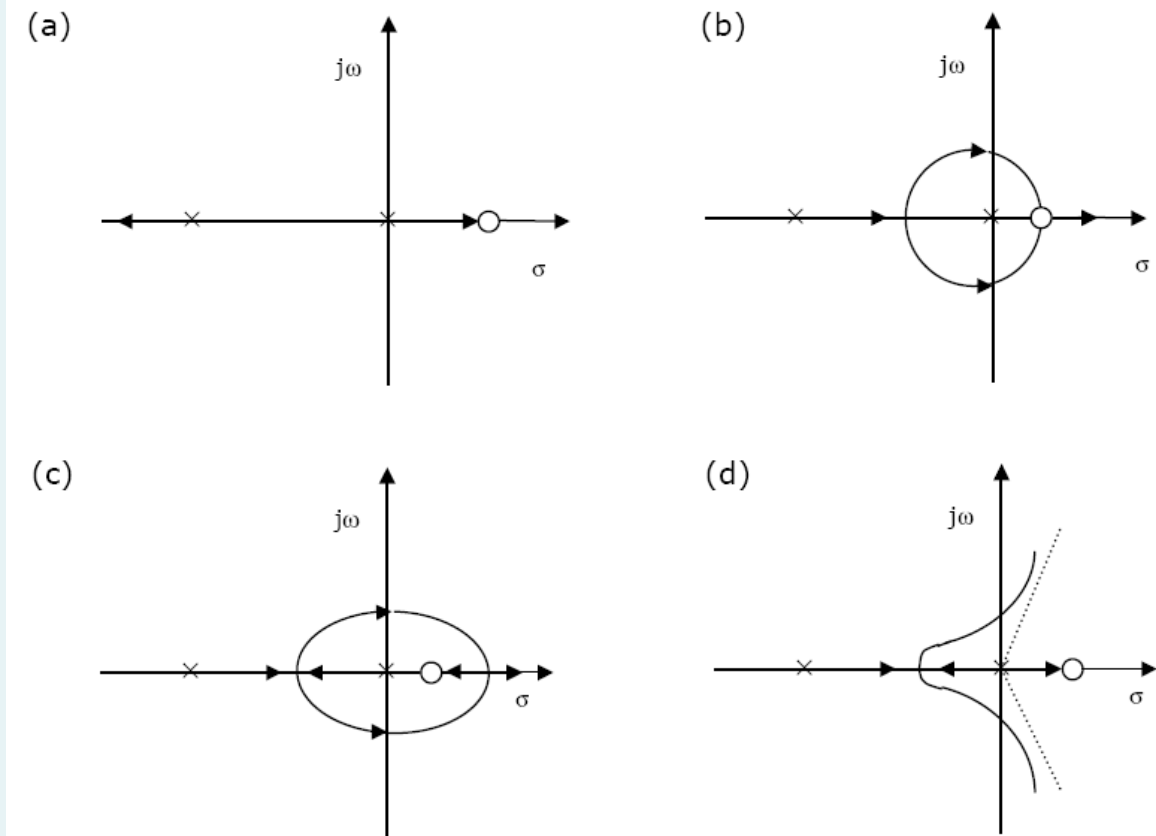


The correct answer is: -6.5

Question 4

Incorrect

Mark 0.00 out of 2.00



A unity feedback system is given as  $G(s) = k(1-s)/[s(s+3)]$ . Indicate the correct root locus diagram.

Answer:  ✘

The correct answer is: c

Question 5

Correct

Mark 2.00 out of 2.00

Dx

The open loop transfer function of a unity feedback configuration is given as  $G(s) = [K(s+4)] / [(s+8)(s^2-9)]$ . The value of a gain  $K (>0)$  for which  $-1+j2$  lies on the root locus is

Answer:  ✔

The correct answer is: 25.54

◀ Quiz #4 Redo

MIDTERM EXAM ▶