

Unit 13 - State Variable Analysis

Course outline

How to access the portal

Unit 0

Basic Circuit Elements and Waveforms

Mesh and Node Analysis

Network Theorems -1

Network Theorems -2

First Order and Second Order Circuits

Laplace Transform and its Application

Circuit Analysis Using Laplace Transform

Two Port Network

Sinusoidal Steady State Analysis - 1

Sinusoidal Steady State Analysis - 2

State Variable Analysis

Introduction to Graphical Models

State Equations

State Diagram

State Transition Matrix

State Variable Method to Circuit Analysis

Quiz : Assignment 11

Assignment 11 solution

Analogous Systems

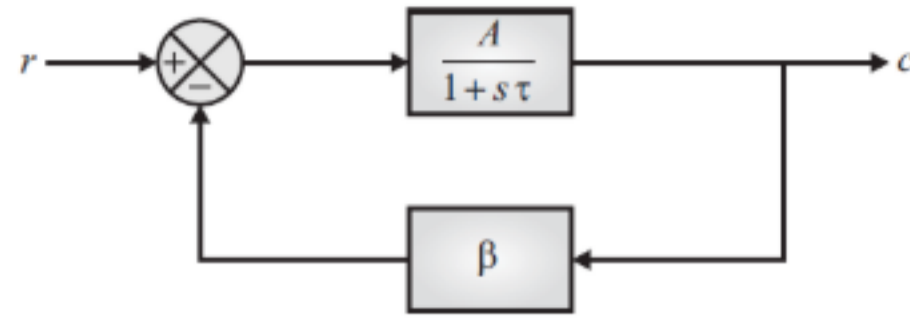
Assignment 11

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-10-16, 23:59 IST.

1) In the feedback scheme shown in the figure, the transfer function of the closed loop system will be :

2 points



- $\frac{A}{1+A\beta+s\tau}$
 $\frac{A}{1-A\beta+s\tau}$
 $\frac{A}{1+A\beta-s\tau}$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$\frac{A}{1+A\beta+s\tau}$

2) Which among the following plays a crucial role in determining the state of dynamic system?

2 points

- State variable
 State vector
 State scalar
 State space

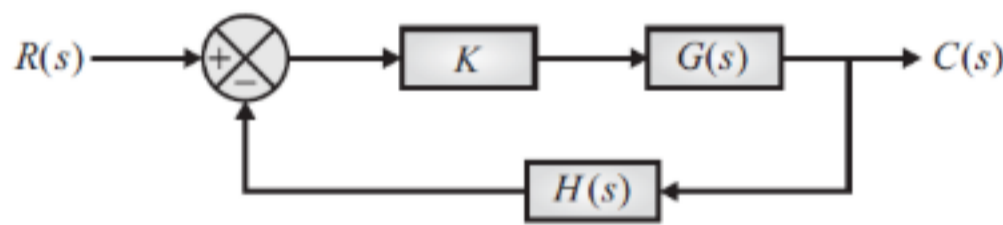
No, the answer is incorrect.
Score: 0

Accepted Answers:

State variable

3) A feedback control system with high gain K is shown in the figure below. The closed loop transfer function is inversely proportional to :

2 points



- K
 G
 H
 KG

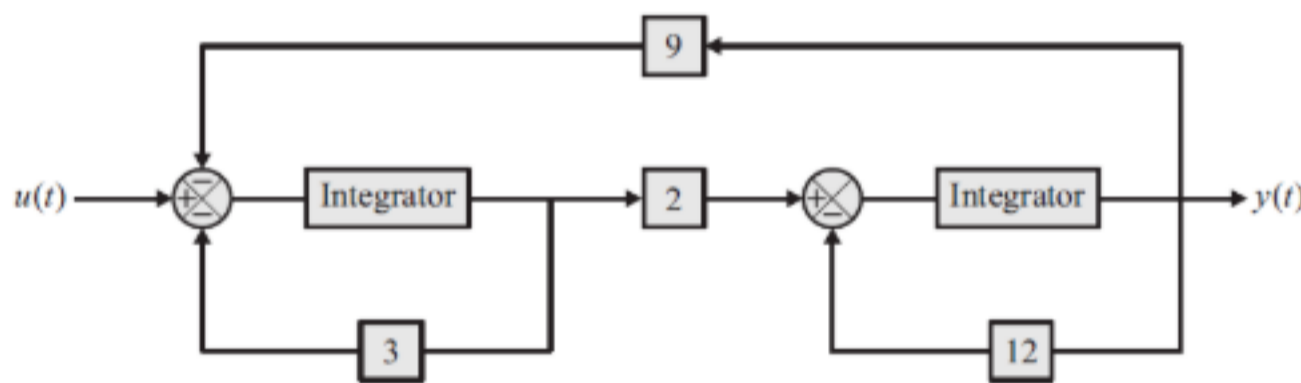
No, the answer is incorrect.
Score: 0

Accepted Answers:

H

4) The block diagram of a control system is shown in the figure. The transfer function $G(s) = \frac{Y(s)}{U(s)}$ of the system is :

2 points



- $\frac{1}{27(1+\frac{s}{6})(1+\frac{s}{9})}$
 $\frac{1}{7(1+\frac{s}{6})(1+\frac{s}{9})}$
 $\frac{1}{2(1+\frac{s}{6})(1+\frac{s}{9})}$
 $\frac{1}{27(1+\frac{3s}{6})(1+\frac{s}{9})}$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$\frac{1}{27(1+\frac{s}{6})(1+\frac{s}{9})}$

5) Signal flow graph is used to find the :

2 points

- Stability of the system
 Controllability of the system
 Transfer function of the system
 Poles of the system

No, the answer is incorrect.
Score: 0

Accepted Answers:

Transfer function of the system