Assignment 10

The due date for submitting this assignment has passed.

Due on 2021-03-31, 23:59 IST.

As per our records you have not submitted this assignment.

1) In a trajectory tracking controller, a servo error is generated that is   *1 point*

○ Difference between the present position and desired position
○ Square root of the absolute difference between the squares of the present position and desired position
○ Mean of the cummulative errors
○ Difference between the mean position and present position

No, the answer is incorrect.
Score: 0
Accepted Answers:
Difference between the present position and desired position

2) In the partitioned controller approach, the system is reduced to   *1 point*

○ Linear model
○ Single input model
○ Time invariant model
○ Unit mass system

No, the answer is incorrect.
Score: 0
Accepted Answers:
Unit mass system

3) In a PD controller the steady state error is   *1 point*

○
Inversely proportional to the disturbance and directly proportional to K_d
○
Directly proportional to disturbance and inversely proportional to the K_d
○
Directly proportional to disturbance and inversely proportional to the K_p
○
Inversely proportional to the disturbance and directly proportional to K_p

No, the answer is incorrect.
Score: 0
Accepted Answers:
Directly proportional to disturbance and inversely proportional to the K_p

4) If for a small disturbance, a system returns to its origin, it is   *1 point*

○ Marginally stable
○ Asymptotically stable
○ Absolutely stable
○ Conditionally stable

No, the answer is incorrect.
Score: 0
Accepted Answers:
Asymptotically stable

5) A spring, mass, damper system is stable because the Lyapunov function $\dot{V}(x)$ is   *1 point*

○ Positive definite
○ positive semi definite
○ Negative definite
○ Negative semi definite

No, the answer is incorrect.
Score: 0
Accepted Answers:
Negative semi definite

6) Simultaneous force and position control is possible only if force and position are   *1 point*

○ orthogonal to one another
○ parallel to one another
○ linearly independent quantities
○ mutually exclusive

No, the answer is incorrect.
Score: 0
Accepted Answers:
orthogonal to one another

7) Force control in a constrained environment is associated with a total of how many natural and artificial contraints   *1 point*

○ 14
○ 12
○ 10
○ 8

No, the answer is incorrect.
Score: 0
Accepted Answers:
12

8) Hybrid control is the control of   *1 point*

○ Force only
○ Position only
○ Force and position
○ Force or postion

No, the answer is incorrect.
Score: 0
Accepted Answers:
Force or postion

9) A robot and a human can be made to perform a task together using   *1 point*

○ Impedance control
○ Hybrid control
○ Position control
○ Force control

No, the answer is incorrect.
Score: 0
Accepted Answers:
Impedance control

10) Although a spring, mass, damper system has negative semi definite Lyapunov function $\dot{V}(x)$, it also can be proved to be stable using   *1 point*

○ Routh–Hurwitz theorem
○ Nonlinear control theory
○ Final Value theorem
○ La Salles theorem

No, the answer is incorrect.
Score: 0
Accepted Answers:
La Salles theorem