Quiz 4

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IMPORTANT

- Each Question carries 1 mark and you will get 1 attempt each. Total 10 Marks
- **You Need the following figure 1 & 2 in the MCQ**

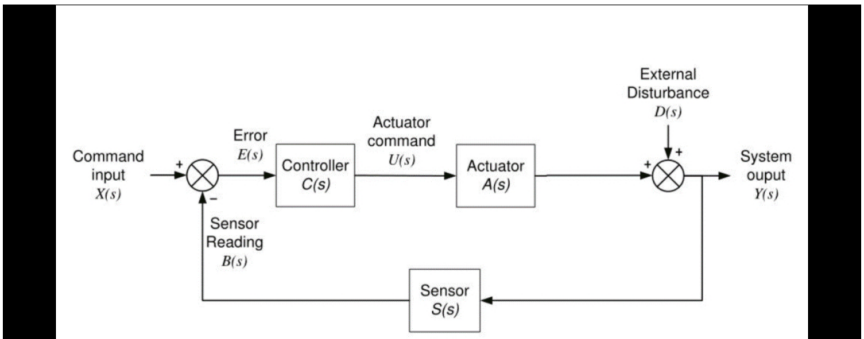

Figure 1

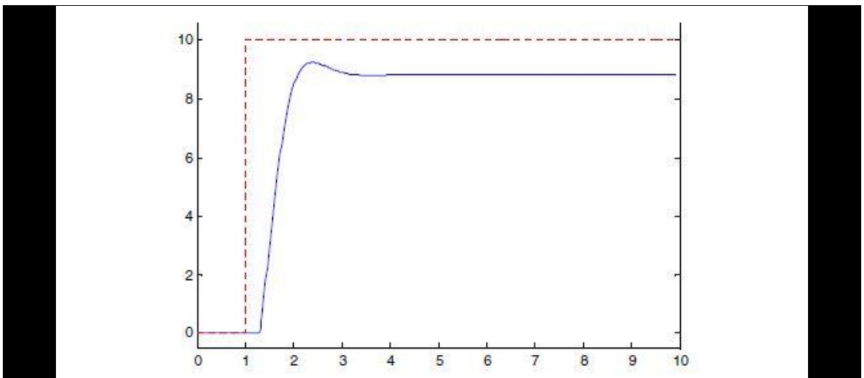

Figure 2

Multiple Choice

1/1 point (graded)

For most control applications, a simple proportional control algorithm after the system has stabilized will always have a...

- ○ dynamic error component
- ○ dynamic error component
- ○ error frequency
- ◉ Steady-State Error ✔

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Multiple Choice

1/1 point (graded)

Characteristics of Feedback System

- ☑ Power amplification
- ☑ Feedback measurement

- [ ] Graph
- [x] Error signal
- [x] Controller

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Multiple Choice

1/1 point (graded)

Which of the following applications would not benefit from a PID controller

- ○ motor control
- ○ control of temperature
- ○ speed
- ○ flow rate
- ◉ none of the above

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Multiple Choice

1/1 point (graded)

$$\frac{U(S)}{E(S)} = \frac{K_P + K_I}{S + K_D S} = \frac{K_P S + K_I + K_D S^2}{S}$$

What does K_P represent?

- ○ the time constant of the proportional term
- ○ the time constant of the integral term
- ○ the time constant of the derivative term
- ◉ the constant of proportionality
- ○ none of the above

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Multiple Choice

1/1 point (graded)

In a PID system if the gain K= 2, and oscillation period is 3 then what wil be the value of Kp,Ki and Kd?

- ○ kp=1.2 ,Ki= .67 kd= .472
- ○ kp=1.2 ,Ki= .45 kd= .943
- ◉ kp=1.2 ,Ki= .67 kd= .375
- ○ kp=1.2 ,Ki= .38 kd= .575

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Multiple Choice

1/1 point (graded)

In Figure 2 the red line represents a reference (setpoint) input to a closed system. The measured process value is shown in blue. What type of controller is used in this application?

- ○ P
- ○ PI
- ○ PID
- ◉ PD

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Multiple Choice

1/1 point (graded)

A PID controller generates the process value (u) by looking at...

- ○ The present
- ○ The past
- ○ The Future
- ◉ all of the above

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Multiple Choice

1/1 point (graded)

A simple proportional control algorithm differs from a PID controller by not looking at

- ○ The present
- ○ The past
- ○ The Future
- ◉ The Past and Future
- ○ All the above

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Multiple Choice

1/1 point (graded)

Percentage of final value exceeded at first oscillation is called

- ○ rise time
- ◉ overshoot
- ○ settling time

✔

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Multiple Choice

1/1 point (graded)

What does variable U(s) represent in Figure 1?

- ○ setpoint value
- ◉ process value
- ○ process input
- ○ none of the above

✔

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