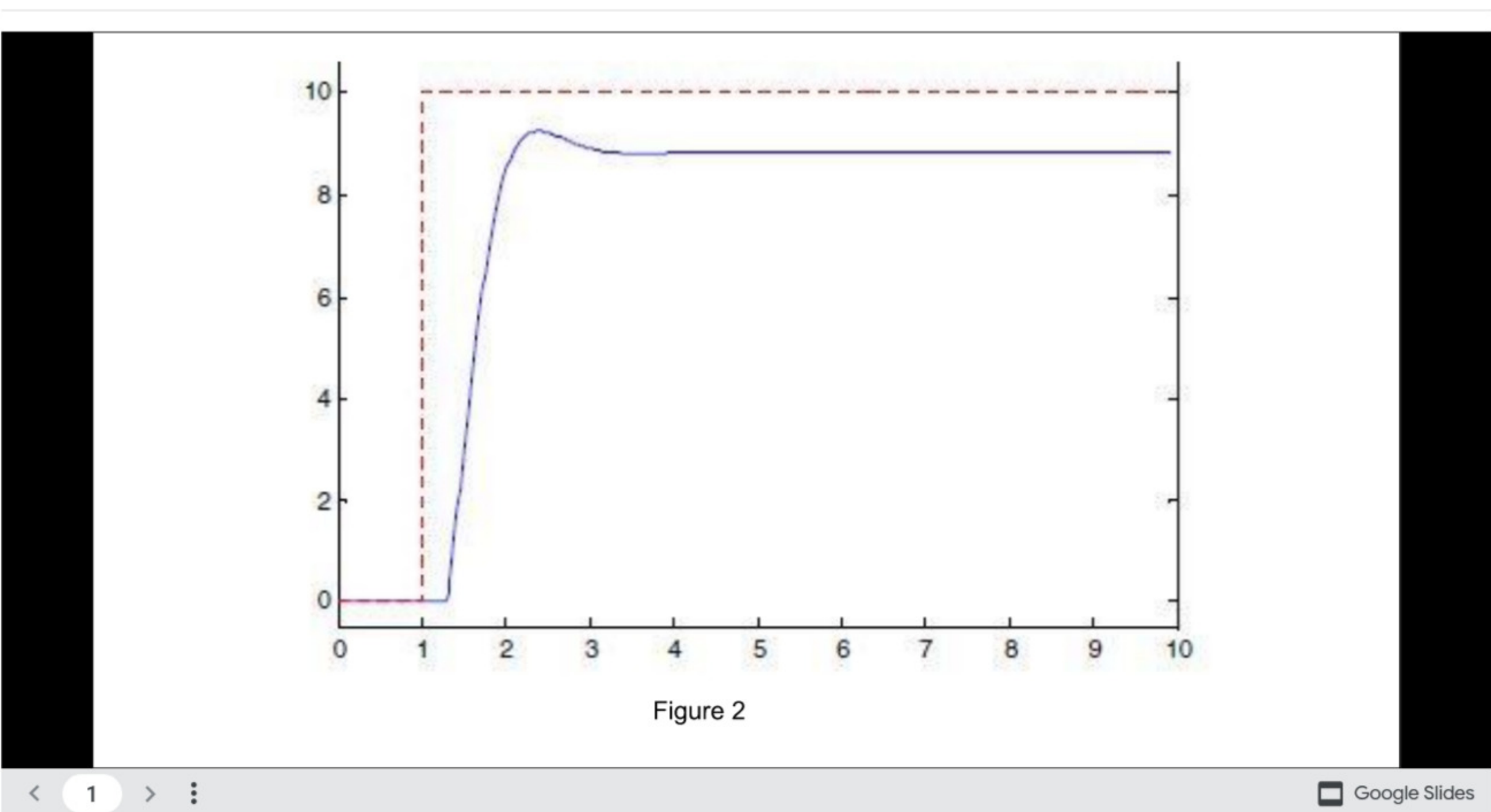
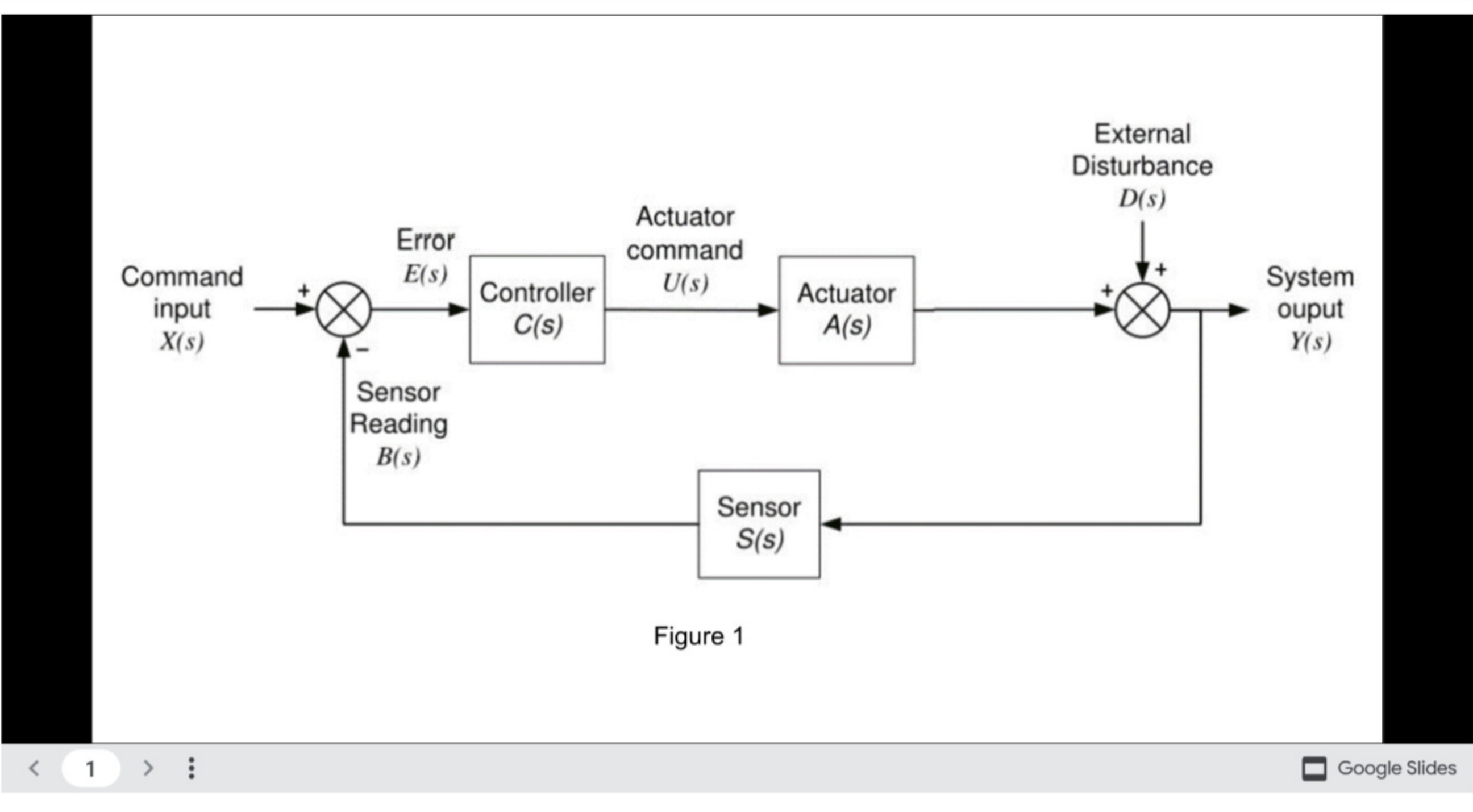


IMPORTANT

- 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



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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Show Answer

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 will be the value of K_p, K_i and K_d ?

- ☐ $k_p=1.2, K_i=.67, k_d=.472$
- ☐ $k_p=1.2, K_i=.45, k_d=.943$
- ☒ $k_p=1.2, K_i=.67, k_d=.375$
- ☐ $k_p=1.2, K_i=.38, k_d=.575$



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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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Show Answer

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)

Characteristics of Feedback System

- ☒ Power amplification
- ☒ Feedback measurement
- ☐ Graph
- ☒ Error signal
- ☒ Controller



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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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Show Answer

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)

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)

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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Show Answer