

TC05C1 - Pre-Instructional Survey

Name: _____

Date: _____

1. A closed loop feedback control system must have the minimum number of components or elements:
 - a. 3
 - b. 2
 - c. 4
 - d. No minimum number
 - e. Any number

2. Feedback control is based on the measurement of which variable?
 - a. Disturbance
 - b. Controlled
 - c. Manipulated
 - d. Uncertain
 - e. None

3. Select the one sensor characteristic that is most likely to affect the total system gain:
 - a. Offset
 - b. Response time
 - c. Accuracy
 - d. Range
 - e. All of the above

4. Which of the following will normally be selected to provide "fail safe" conditions on a process?
 - a. Controller action
 - b. Transmitter range
 - c. Valve operation
 - d. Controller type
 - e. Any of the above

Match the following output response for the given input response.

<u>Control mode</u>	<u>Input</u>	<u>Answer</u>	<u>Output</u>
5. proportional		_____	a.
6. proportional		_____	b.
7. integral		_____	c.
8. integral		_____	d.
9. derivative		_____	e.
10. derivative		_____	f.

11. Proportional control operates on:

- a. Amount of error
- b. Time of error
- c. Rate of change of error
- d. Presence of error
- e. Disturbance

12. Integral control operates on

- a. Amount of error
- b. Time of error
- c. Rate of change of error
- d. Presence of error
- e. Disturbance

13. Derivative control operates on:

- a. Amount of error
- b. Time of error
- c. Rate of change of error
- d. Presence of error
- e. Disturbance

14. On-off control operates on:
- a. Amount of error
 - b. Time of error
 - c. Rate of change of error
 - d. Presence of error
 - e. Disturbance
15. The following should not respond to a setpoint change:
- a. Proportional
 - b. On-off
 - c. Reset
 - d. Cascade
 - e. Derivative
16. Control system tuning:
- a. Can help analyze problems in a control system.
 - b. Can best be accomplished in a steady state condition.
 - c. Is a means to match the dynamic characteristics of components in a control system.
 - d. Requires analysis of a transfer function.
 - e. Is usually done by a computer function of the controller.

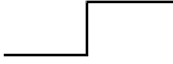
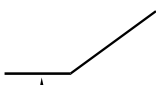
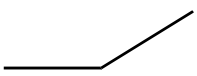



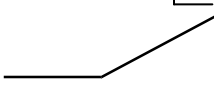

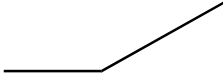
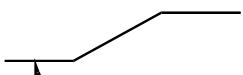

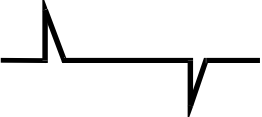
TC05C1 - Pre-Instructional Survey Answers

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1. c. 4
2. b. Controlled
3. d. Range
4. c. Valve operation

Match the following output response for the given input response.

<u>Control mode</u>	<u>Input</u>	<u>Answer</u>	<u>Output</u>
5. proportional		<u>d</u>	a. 
6. proportional		<u>a</u>	b. 
7. integral		<u>e</u>	c. 
8. integral		<u>c</u>	d. 
9. derivative		<u>d</u>	e. 
10. derivative		<u>b</u>	f. 

11. a. Amount of error
12. b. Time of error
13. c. Rate of change of error
14. d. Presence of error
15. e. Derivative
16. c. Is a means to match the dynamic characteristics of components in a control system.