

Code No: 56045

Set No. 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

III B.Tech. II Sem., II Mid-Term Examinations, April – 2014

PROCESS CONTROL INSTRUMENTATION

Objective Exam

Name: \_\_\_\_\_ Hall Ticket No. 

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

**I Choose the correct alternative:**

1. In a process with several time constants, the maximum gain and optimum gain may be doubled by the use of ----- action [      ]  
a) Derivative                      b) Integral                      c) Proportional                      d) None of the above
2. In a process reaction curve method, the controller settings are based on the ----- slope of the curve [      ]  
a) Minimum                      b) Maximum                      c) Constant                      d) None of the above
3. In damped oscillation method, the reset time and derivation time are based on the period of oscillation which is always ----- the ultimate period [      ]  
a) Less than                      b) Greater than                      c) Equal to                      d) None of the above
4. Pneumatic actuators can be classified into ----- actuators [      ]  
a) Linear                      b) Rotary                      c) Both a & b                      d) None of the above
5. Pneumatic to electrical conversion is performed by an ----- converter [      ]  
a) I-P                      b) P-I                      c) Both a & b                      d) None of the above
6. Valve positioner is used to improve ----- behavior of a pneumatic valve [      ]  
a) Static                      b) Dynamic                      c) Both a & b                      d) None of the above
7. A ----- valve is a type used for regulating flow in pipeline, consisting of a movable disk type element and a stationary ring seat in general spherical body [      ]  
a) Butterfly                      b) Globe                      c) Spool                      d) Ball
8. The controlling edge of ball valve can be notched or contoured to produce the ----- characteristics [      ]  
a) U-Notched                      b) V-Notched                      c) Both a & b                      d) None of the above
9. Ratio control is a special type of feedforward control where ----- disturbances are measured and held in a constant ratio to each other [      ]  
a) 2                      b) 3                      c) 4                      d) None of the above
10. ----- control is particularly useful for distillation column because its response time can be measured in hours [      ]  
a) Feedforward                      b) Ratio                      c) Feedback                      d) None of the above

**Cont.....2**

**II Fill in the blanks**

11. IAE stands for -----
12. In continuous cycling method, the period of cycling at the maximum gain is called the ----- period.
13. ----- actuator is the most useful for translating the control signal into a large force or torque as required to manipulate some control element.
14. ----- is used to improve the performance of a pneumatically operated actuator.
15. The I-P converter is based on force balance principle called ----- mechanism.
16. The controlling edge of the ----- valve can be notched or contoured to produce the desired flow characteristics.
17. Diaphragm valves are lined to measure pressure approximately of -----psi.
18. Feedforward control is sensitive to ----- parameter variations.
19. In a Ratio control the term FT stands for-----.
20. Current from----- in I-P converter.

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**Set No. 2**

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**III B.Tech. II Sem., II Mid-Term Examinations, April – 2014**

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**Objective Exam**

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**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I Choose the correct alternative:**

1. Pneumatic actuators can be classified into ----- actuators [      ]  
a) Linear                      b) Rotary                      c) Both a & b                      d) None of the above
2. Pneumatic to electrical conversion is performed by an ----- converter [      ]  
a) I-P                      b) P-I                      c) Both a & b                      d) None of the above
3. Valve positioner is used to improve ----- behavior of a pneumatic valve [      ]  
a) Static                      b) Dynamic                      c) Both a & b                      d) None of the above
4. A ----- valve is a type used for regulating flow in pipeline, consisting of a movable disk type element and a stationary ring seat in general spherical body [      ]  
a) Butterfly                      b) Globe                      c) Spool                      d) Ball
5. The controlling edge of ball valve can be notched or contoured to produce the ----- characteristics [      ]  
a) U-Notched                      b) V-Notched                      c) Both a & b                      d) None of the above
6. Ratio control is a special type of feedforward control where ----- disturbances are measured and held in a constant ratio to each other [      ]  
a) 2                      b) 3                      c) 4                      d) None of the above
7. ----- control is particularly useful for distillation column because its response time can be measured in hours [      ]  
a) Feedforward                      b) Ratio                      c) Feedback                      d) None of the above
8. In a process with several time constants, the maximum gain and optimum gain may be doubled by the use of ----- action [      ]  
a) Derivative                      b) Integral                      c) Proportional                      d) None of the above
9. In a process reaction curve method, the controller settings are based on the ----- slope of the curve [      ]  
a) Minimum                      b) Maximum                      c) Constant                      d) None of the above
10. In damped oscillation method, the reset time and derivation time are based on the period of oscillation which is always ----- the ultimate period [      ]  
a) Less than                      b) Greater than                      c) Equal to                      d) None of the above

**Cont.....2**

**II Fill in the blanks**

11. ----- is used to improve the performance of a pneumatically operated actuator.
12. The I-P converter is based on force balance principle called ----- mechanism.
13. The controlling edge of the ----- valve can be notched or contoured to produce the desired flow characteristics.
14. Diaphragm valves are lined to measure pressure approximately of -----psi.
15. Feedforward control is sensitive to ----- parameter variations.
16. In a Ratio control the term FT stands for-----.
17. Current from----- in I-P converter.
18. IAE stands for -----
19. In continuous cycling method, the period of cycling at the maximum gain is called the ----- period.
20. ----- actuator is the most useful for translating the control signal into a large force or torque as required to manipulate some control element.

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**Set No. 3**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

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**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I Choose the correct alternative:**

1. Valve positioner is used to improve ----- behavior of a pneumatic valve [     ]  
a) Static                      b) Dynamic                      c) Both a & b                      d) None of the above
2. A ----- valve is a type used for regulating flow in pipeline, consisting of a movable disk type element and a stationary ring seat in general spherical body [     ]  
a) Butterfly                      b) Globe                      c) Spool                      d) Ball
3. The controlling edge of ball valve can be notched or contoured to produce the ----- characteristics [     ]  
a) U-Notched                      b) V-Notched                      c) Both a & b                      d) None of the above
4. Ratio control is a special type of feedforward control where ----- disturbances are measured and held in a constant ratio to each other [     ]  
a) 2                      b) 3                      c) 4                      d) None of the above
5. ----- control is particularly useful for distillation column because its response time can be measured in hours [     ]  
a) Feedforward                      b) Ratio                      c) Feedback                      d) None of the above
6. In a process with several time constants, the maximum gain and optimum gain may be doubled by the use of ----- action [     ]  
a) Derivative                      b) Integral                      c) Proportional                      d) None of the above
7. In a process reaction curve method, the controller settings are based on the ----- slope of the curve [     ]  
a) Minimum                      b) Maximum                      c) Constant                      d) None of the above
8. In damped oscillation method, the reset time and derivation time are based on the period of oscillation which is always ----- the ultimate period [     ]  
a) Less than                      b) Greater than                      c) Equal to                      d) None of the above
9. Pneumatic actuators can be classified into ----- actuators [     ]  
a) Linear                      b) Rotary                      c) Both a & b                      d) None of the above
10. Pneumatic to electrical conversion is performed by an ----- converter [     ]  
a) I-P                      b) P-I                      c) Both a & b                      d) None of the above

**Cont.....2**

**II Fill in the blanks**

11. The controlling edge of the ----- valve can be notched or contoured to produce the desired flow characteristics.
12. Diaphragm valves are lined to measure pressure approximately of -----psi.
13. Feedforward control is sensitive to ----- parameter variations.
14. In a Ratio control the term FT stands for-----.
15. Current from----- in I-P converter.
16. IAE stands for -----
17. In continuous cycling method, the period of cycling at the maximum gain is called the ----- period.
18. ----- actuator is the most useful for translating the control signal into a large force or torque as required to manipulate some control element.
19. ----- is used to improve the performance of a pneumatically operated actuator.
20. The I-P converter is based on force balance principle called ----- mechanism.

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**Set No. 4**

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**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I Choose the correct alternative:**

1. The controlling edge of ball valve can be notched or contoured to produce the ----- characteristics [      ]  
a) U-Notched                      b) V-Notched                      c) Both a & b                      d) None of the above
2. Ratio control is a special type of feedforward control where ----- disturbances are measured and held in a constant ratio to each other [      ]  
a) 2                                      b) 3                                      c) 4                                      d) None of the above
3. ----- control is particularly useful for distillation column because its response time can be measured in hours [      ]  
a) Feedforward                      b) Ratio                                      c) Feedback                                      d) None of the above
4. In a process with several time constants, the maximum gain and optimum gain may be doubled by the use of ----- action [      ]  
a) Derivative                      b) Integral                                      c) Proportional                                      d) None of the above
5. In a process reaction curve method, the controller settings are based on the ----- slope of the curve [      ]  
a) Minimum                      b) Maximum                                      c) Constant                                      d) None of the above
6. In damped oscillation method, the reset time and derivation time are based on the period of oscillation which is always ----- the ultimate period [      ]  
a) Less than                      b) Greater than                                      c) Equal to                                      d) None of the above
7. Pneumatic actuators can be classified into ----- actuators [      ]  
a) Linear                                      b) Rotary                                      c) Both a & b                                      d) None of the above
8. Pneumatic to electrical conversion is performed by an ----- converter [      ]  
a) I-P                                      b) P-I                                      c) Both a & b                                      d) None of the above
9. Valve positioner is used to improve ----- behavior of a pneumatic valve [      ]  
a) Static                                      b) Dynamic                                      c) Both a & b                                      d) None of the above
10. A ----- valve is a type used for regulating flow in pipeline, consisting of a movable disk type element and a stationary ring seat in general spherical body [      ]  
a) Butterfly                                      b) Globe                                      c) Spool                                      d) Ball

**Cont.....2**

**II Fill in the blanks**

11. Feedforward control is sensitive to ----- parameter variations.
12. In a Ratio control the term FT stands for-----.
13. Current from----- in I-P converter.
14. IAE stands for -----
15. In continuous cycling method, the period of cycling at the maximum gain is called the ----- period.
16. ----- actuator is the most useful for translating the control signal into a large force or torque as required to manipulate some control element.
17. ----- is used to improve the performance of a pneumatically operated actuator.
18. The I-P converter is based on force balance principle called ----- mechanism.
19. The controlling edge of the ----- valve can be notched or contoured to produce the desired flow characteristics.
20. Diaphragm valves are lined to measure pressure approximately of -----psi.