Seat No: _____ Enrollment No: _____

# PARUL UNIVERSITY

## FACULTY OF ENGINEERING & TECHNOLOGY

**B.Tech. Summer 2018 - 19 Examination**

**Semester: 6** **Date: 14/05/2019**
**Subject Code: 03112351** **Time: 10:30 am to 01:00pm**
**Subject Name: Process Control** **Total Marks: 60**

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**Instructions:**
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1** **Objective Type Questions** - (All are compulsory) (Each of one mark) **(15)**

1. Which controller will always remove the error?
   A) P controller B) D controller
   C) I controller D) None of the above

2. What should be the input of the controller?
   A) Error Signal B) Disturbance signal
   C) Reference input D) All of the above

3. Which of the following will give the Minor information about the plant?
   A) Process Flow Diagram B) P & ID
   C) Both of them D) None of them

4. Disturbance variable is……..
   A) Input variable B) Output variable
   C) Both of the above D) None of the above

5. 09 PSI signal value which has range of 3-15 PSI is equivalent to …….. ma in electronic 4-20 ma range?
   A) 12ma B) 13ma
   C) 16ma D) 16ma

6. What is the full name of TIC?
7. Which equipment is mostly used as Final Control Element?
8. The manipulating variables are……variables. (Input/Output)
9. ……. Controller will always increase the stability of the system. (Integral/Derivative)
10. Standard Electrical signal range is…….
11. What is feedback signal?
12. Define term : Degree of freedom
13. Define term : Control System
14. What is the full name of FI?
15. What is the full name of P&ID?

**Q.2** **Answer the following questions. (Attempt any three)** **(15)**

A) 12 PSI signal value which has range of 3-15 PSI is equivalent to …….. ma in electrical 4-20 ma range?
B) Discuss about the objectives of the process control.
C) Explain the different types of process characteristics.
D) Draw the symbols of different control valves and process lines.

**Q.3** A) Explain the Ziegler-Nichols method for controller tuning. **(07)**
B) Discuss about the flow characteristics of control valve. **(08)**

**OR**

B) Explain the modeling of system with an example. **(08)**

**Q.4** A) Explain the cascade control with an example. **(07)**

**OR**

A) Discuss about the cavitations in control valve. **(07)**
B) Explain the Continuous controller modes in detail. **(08)**