

TED (15) – 5212  
(Revision – 2015)

**N22 - 09607**

Reg.No.....  
Signature.....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE – NOVEMBER – 2022**

**PROCESS CONTROL**

(Maximum Marks : 100)

(Time : 3 hours)

**PART – A**  
(Maximum Marks : 10)

Marks

**I.** Answer **all** questions in one or two sentences. Each question carries 2 marks.

1. State the term Process.
2. Define Offset.
3. State Turn down.
4. Define Cavitation.
5. State Profibus.

(5x2=10)

**PART –B**  
(Maximum Marks : 30)

**II.** Answer any **five** of the following questions. Each question carries 6 marks.

1. Briefly explain process Characteristics.
2. Explain Integral Control mode.
3. Compare P, PI, PD and PID control modes.
4. Explain Electrical Solenoid Actuator.
5. Describe Flow characteristics of Control Valve.
6. Explain basic Current Telemetry system.
7. Explain the advantages of Field Bus.

(5x6=30)

**PART – C**

(Maximum Marks : 60)

(Answer **one full** question from each unit. Each full question carries 15 marks)

**UNIT – I**

- III.** (a) Explain the Block diagram of Process Control system with example. (10)  
(b) Draw the Pressure Process control system. (5)

**OR**

- IV.** (a) Explain the diagram of Flow Process Control system. (8)  
(b) Briefly explain Control System parameters. (7)

**UNIT – II**

- V.** (a) With neat diagram explain Electronic PID Controller. (8)  
(b) Briefly describe Flapper Nozzle system. (7)

**OR**

- VI.** (a) Explain Pneumatic PID Controller with diagram. (8)  
(b) Describe Proportional Control mode. (7)

**UNIT –III**

- VII.** (a) Describe the working of Hydraulic Actuator. (8)  
(b) Explain the operation of Current to Pressure (I/P) converter. (7)

**OR**

- VIII.** (a) Describe the working of Air Pressure Regulator. (8)  
(b) Explain Air to Open and Air to Close Control Valves. (7)

**UNIT – IV**

- IX.** (a) Explain functional elements of Foundation Fields Bus. (8)  
(b) Briefly describe Force Balance Current Telemetry system. (7)

**OR**

- X.** (a) Describe the blocks of HART Digital Communication system. (8)  
(b) Draw and explain Position Telemetry system using Bridge Configuration. (7)

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