TED (15) -6211
(Revision- 2015)

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Reg.No…….....
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE –APRIL -2022.

ADVANCED PROCESS CONTROL

(Maximum Marks : 100) [Time : 3 hours]

PART–A

(Max. Marks:10) Marks

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

1. What is compound variable process control?
2. List any 2 advantages of DCS.
3. Define Signal conditioning.
4. Define Artificial Intelligence.
5. Name any 2 output devices of PLC.

(5x2=10)

PART - B

(Max. Marks: 30)

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

1. Explain single variable process control with example.
2. Compare Batch and Continuous Processes.
3. Describe Tag number in P & ID.
4. Describe the features of Centralized Computer control.
5. List the advantages of PLC.
6. Construct a ladder diagram program for Level control system.
7. Compare Text based programming and graphical programming.

(5x6 =30)

PART - C

(Max. Marks: 60)

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

UNIT I

III a) Illustrate Feedback control system with suitable example. (8)

b) Describe split range control with simple example. (7)

OR

IV a) Describe Ratio control system with suitable diagrams. (8)

b) Explain Adaptive control system. (7)

UNIT- II

V a) Implement an Alarm Annunciating circuit using Digital gates. The alarm will be triggered if either of the following conditions occurs:

1. L2 LOW and neither FA nor FB HIGH
2. L1 HIGH and FA or FB or both HIGH (7)

b) Explain Distributed Control system with its architecture. (8)

OR

VI a) Illustrate Data Acquisition System with suitable Block Diagram. (8)

b) Describe Data Loggers with suitable Block Diagram. (7)

UNIT- III

VII a) Explain the Block diagram of PLC (8)

b) Construct a ladder diagram program for Temperature Control system. (7)

OR

VIII a) Illustrate SCADA system components. (9)

b) Describe the input module of PLC (6)

UNIT – IV

IX a) Illustrate Ziegler-Nichols methods of Controller tuning. (8)

b) With a schematic describe Virtual instrument. (7)

OR

X a) Illustrate the block diagram of Fuzzy Controller. (9)

b) List the advantages of LabVIEW. (6)

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