DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE –NOVEMBER -2021.

ADVANCED PROCESS CONTROL

(Maximum Marks : 75)   [Time : 2.15 hours]

PART–A

Marks

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

1. What is multivariable process control?

2. List any two use of comparator.

3. What is PLC scan time?

4. Name any 4 output devices of PLC.

5. What is intelligent control?   (3x2=6)

PART - B

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

1. Distinguish between batch and continuous process.

2. Describe feedback control system with suitable example.

3. Explain the role of alarms in process control.

4. Enlist advantages and disadvantages of DCS.

5. Describe the relay logic control of process.

6. Explain the advantages of PLC over relay logic control.

7. Explain the advantages of Labview.   [4x6 =24]

PART - C

(Answer **any of the three units** from the following. Each full question carries 15 marks)

UNIT I

III   (a)   Explain cascade control system with a neat block diagram.   (8)

(b)   Compare the feedback and feed forward control system. (7)

OR

IV   (a) Describe split range control system with suitable diagram. (8)

(b) What is ratio control? Explain. (7)

UNIT- II

V   (a) Explain the function of an alarm system in process control. (6)

(b) Describe Data logger with suitable block diagram. (9)

OR

VI   (a) Describe general features of centralized computer control. (6)

(b) Explain supervisory control with suitable block diagram. (9)

UNIT- III

VII (a) Describe SCADA with block diagram. (9)

(b)   Explain different methods of programming in PLC. (6)

OR

VIII (a) Explain the block diagram of PLC. (8)

(b) Write the selection criteria of PLC. (7)

UNIT – IV

IX   (a) Explain symbols and lines used in P&ID. (9)

(b) Describe the openloop transient method of controller tuning. (6)

OR

X   (a) Explain the virtual instrumentation for test, control and design. (8)

(b) Illustrate block diagram of fuzzy controller. (7)

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