

Total No. of Questions : 8]

SEAT No. :

P3134

[Total No. of Pages : 2

[5354]-622
B.E. (Electrical)
PLC AND SCADA APPLICATIONS
(2012 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right indicate full marks.*

- Q1)** a) Draw and explain overall PLC system. **[8]**
- b) Explain counters and its types used in PLC. **[8]**
- c) Explain input analog devices. **[6]**

OR

- Q2)** a) Write a short note on input and output modules. **[7]**
- b) Draw the ladder diagram for the following function table **[8]**

Inputs - I1, I2 Outputs - Q1, Q2, Q3, Q4

I1	I2	Q1	Q2	Q3	Q4
0	0	0	0	0	1
0	1	0	0	1	0
1	0	0	1	0	0
1	1	1	0	0	0

- c) What is effect of change of Kp in PID controller on the output of the closed loop system. **[7]**
- Q3)** a) Explain any one type of thermal sensor. **[8]**
- b) Explain temperature control system using PLC with the help of block diagram only. **[8]**

P.T.O.

OR

- Q4)** a) Draw and explain working of AC motor overload protection. [8]
b) Write a short note on variable frequency drive. [8]

- Q5)** a) Draw Block diagram of SCADA and explain it in detail. [8]
b) State advantages and disadvantages of SCADA system. [8]

OR

- Q6)** a) Explain SCADA systems in interconnected power system. [8]
b) Define SCADA, MTU, RTU, HMI. [8]

- Q7)** a) Write a short note on TCP/IP protocol. [8]
b) Write a short note on DNP3 protocol. [8]

OR

- Q8)** a) Explain IEC61850 layered architecture. [8]
b) Write a short note on Control and Information Protocol (CIP). [8]

