[5059]-582
B.E. (Electrical)
PLC AND SCADA APPLICATIONS
(2012 Pattern) (End Semester)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:
1) *All questions are compulsory.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*

Q1) a) Draw and explain block diagram of Programmable Logic Controller.**[8]**

b) What is programming equipment? State their types. **[7]**

c) Explain input analog devices. **[7]**

OR

Q2) a) State advantages and disadvantages of PLC. **[8]**

b) Draw the ladder diagram for the following function table **[7]**
Inputs - I1, I2   Outputs - Q1, Q2, Q3, Q4

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

c) What is the difference between ON/OFF and analog devices? Explain output analog devices. **[7]**

Q3) a) Explain any two types of transducers. **[8]**

b) Explain how temperature is measured and controlled by PLC. **[8]**

OR

Q4) a) Draw and explain AC motor overload protection. **[8]**

b) Explain variable frequency drive for AC motor. **[8]**

P.T.O.

Q5) a) Explain SCADA architecture in detail. **[8]**

b) State advantages and disadvantages of SCADA systems. **[8]**

OR

Q6) a) Explain how SCADA is implemented in water purification system. **[8]**

b) Explain SCADA generations. **[8]**

Q7) a) Explain DNP3 SCADA protocol. **[8]**

b) Explain Flexible Function Block (FFB). **[8]**

OR

Q8) a) Explain Control and Information Protocol (CIP). **[8]**

b) Explain Open System Interconnection (OSI) model. **[8]**

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