

Total No. of Questions : 8]

SEAT No. :

P-6576

[Total No. of Pages : 2

[6181]-127

B.E. (Electrical)

PLC AND SCADA

(2019 Pattern) (Semester - VII) (403143A) (Elective - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) What is ladder diagram? Explain rules for construction of ladder diagram. [9]

b) Explain ON delay timer in detail along with its timing diagram. [8]

OR

Q2) a) Explain OFF delay timer in detail along with its timing diagram. [8]

b) Construct a ladder diagram for any one of the following industrial applications. [9]

i) ON/OFF Temperature Control

ii) Bottle filling plant

Q3) a) Explain PID Controller with neat diagram. [8]

b) Discuss various methods of PID tuning. Select one of them and explain. [9]

OR

Q4) a) Explain with necessary diagram overload protection of AC Motor. [8]

b) List various speed control method of DC motor. Explain any one method in brief. [9]

P.T.O.

Q5) a) Define SCADA. State advantages, disadvantages and applications of SCADA. [9]

b) Explain how SCADA system is used in Petroleum Refining Process. [9]

OR

Q6) a) Explain how SCADA system is used in Automatic Substation Control. [9]

b) Explain all generations of SCADA Architectures with diagram. [9]

Q7) a) Explain seven layers of OSI model each with function and associated protocol. [9]

b) Write note on CIP Protocol. [9]

OR

Q8) a) List all SCADA Protocols and Explain any one in detail. [9]

b) What is DCS? Explain DCS architecture in detail. [9]
