

Total No. of Questions : 12]

SEAT No. :

P817

[Total No. of Pages : 2

[4659]-65

B.E. (Electrical)

PLC AND SCADA APPLICATION

(2008 Course) (Semester-I)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer 3 questions from Section-I and 3 questions from Section-II.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*

SECTION-I

- Q1)** a) Write various advantages and disadvantages of PLC. [10]
b) Write a short note on Power supplies used in PLC. [8]

OR

- Q2)** a) Explain in detail block diagram of PLC. [9]
b) What are Input and output module of PLC system? [9]

- Q3)** a) Explain Up counter and Down counter along with their timing diagrams. [8]
b) Develop the ladder diagram for traffic light controller. Switch I1 is used to start and I2 is used to stop the cycle. There will be three lamps Red, Yellow and Green lamps as output. [8]

OR

- Q4)** a) Explain Output Analog devices. [8]
b) Explain ON/OFF Output devices. [8]

- Q5)** a) Explain the effect of varying only Ki and Kd of PID controller on the output. [8]
b) Explain 'Adjust and observe' method of PID tuning. [8]

OR

- Q6)** a) Explain V/F control of an ac motor. [8]
b) Write a short note on AC motor overload protection. [8]

P.T.O.

SECTION-II

- Q7)** a) Define SCADA. [2]
b) Draw block diagram of SCADA and explain in detail. [8]
c) Define and explain SCADA server. [6]

OR

- Q8)** a) What are SCADA system desirable properties? [8]
b) State advantages and disadvantages of SCADA system. [8]

- Q9)** a) Explain operation and control between various control centers of power system. [8]
b) Explain with block diagram use of SCADA in chemical plant. [8]

OR

- Q10)** a) Draw and explain SCADA in Automation substation control. [8]
b) Explain with block diagram use of SCADA in petroleum refining process. [8]

- Q11)** a) Explain seven layers of OSI model and their functions. [9]
b) Draw and explain DNP3 protocol. [9]

OR

- Q12)** a) Explain the communication architectures of the Profibus versions. [9]
b) Explain Flexible Function Block process (FFB). [9]

