

Total No. of Questions : 10]

SEAT No. :

P3596

[5560]-550

[Total No. of Pages : 2

T.E. (Electronics Engineering)

PLC AND APPLICATION

(2015 Pattern) (Semester - II) (End sem.) (304210)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Assume Suitable data if necessary.*

Q1) a) For output 7 to be ON, Input 6 must be OFF and either input 8 or 9 must be ON. In addition, one of inputs 1,2 or 3 must be ON. Draw Gate Logic Diagram, Relay Ladder and PLC Ladder Diagram. **[6]**

b) Explain Realy type Instructions. **[4]**

OR

Q2) a) Explain Processor memeory organization with necessary diagram. **[6]**

b) What are advantages and disadvantages of PLC? **[4]**

Q3) a) Draw the ladder diagram of control of traffic lights in one direction. **[6]**

b) Explain Analog PLC operation. **[4]**

OR

Q4) a) List various types of output control devices which are Interface with PLC and explain any one output control device. **[6]**

a) Draw PLC ladder diagram for automatic water sprinkler system for a garden with necessary diagram. **[4]**

Q5) a) Enlist various types of operating environment considered for PLC. Explain any four types of operating environment. **[8]**

b) Explain **[9]**

i) Receiving Test, Check and Assembly

ii) Electrical Noise

OR

P.T.O.

- Q6)** a) What do you mean by voltage variation and surges? List different external suppression devices for voltage variation and surges and explain any one. [9]
b) Explain in detail about Troubleshooting of Input and Output module Malfunction. [8]

- Q7)** a) Explain on/off control and motion control in detail. [8]
b) Explain in detail Explain function of MTU and RTU. [8]

OR

- Q8)** a) Draw and explain the block diagram of SCADA system in detail. [8]
b) List various process used in industry. Explain any one processes used in process control Industries. [8]

- Q9)** a) What are the advantages of standard industrial network? Explain the Ethernet IP Communication interface in detail. [9]
b) Explain the Controller area network (CAN) protocol in detail. [8]

OR

- Q10)** a) Explain about Fieldbus and Profibus protocol. [9]
b) Explain types of communication interface and types of networking channels in PLC. [8]

