

Total No. of Questions :6]

SEAT No. :

P5157

[Total No. of Pages : 2

B.E./Insem.-562
B.E.(Electrical) (Semester - I)
PLC AND SCADA APPLICATIONS
(2012 Pattern)

Time : 1 Hour]

[Max. Marks :30

Instructions to the candidates:

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

Q1) a) What are different benefits of automation in industry? **[5]**

b) Explain different types of PLC. **[5]**

OR

Q2) a) Draw and explain overall PLC block diagram. **[8]**

b) What are different selection criteria for PLC? **[2]**

Q3) a) Explain various rules for construction of ladder diagram. **[6]**

b) Draw and explain electromagnetic relay. **[4]**

OR

Q4) a) Explain up counter in detail with its related bits and timing diagram. **[6]**

b) Draw the ladder diagram for the following function table. **[4]**

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

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

P.T.O.

- Q5)** a) List Output Analog devices. Explain any one example in detail. [6]
b) What are different input ON/OFF devices? [4]

OR

- Q6)** a) What is the effect of change of K_p on the output of the system? Explain with response curves. [6]
b) What is the effect of change in integral constant (K_i) and derivative constant (K_d) on the performance of the system. [4]

