Total No. of Questions : 6]

SEAT No. :

P34

[Total No. of Pages : 2

TE/Insem./APR - 38
T.E. (Electronics Engineering)
304210 : PLC AND APPLICATIONS
(2015 Pattern) (Semester - II)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Answer Q.No. 1 or Q.No. 2 , Q.No. 3 or Q.No. 4, Q.No. 5 or Q.No. 6.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) a) Sketch the block diagram of PLC. Explain in detail about the principle of operation of PLC. **[6]**

b) Identify the selection criteria of PLC (Any four). **[4]**

OR

Q2) a) Develop Gate logic diagram, Relay ladder logic and PLC ladder diagram for the following condition: Conveyor 'C' is to run when any one of four inputs is ON. It is stop when any one of the four inputs is ON. **[6]**

b) Compare PLC vs. Computer. **[4]**

Q3) a) Explain in detail about Relay type Instructions with suitable diagram. **[6]**

b) Compare Relay vs. Contactors. **[4]**

OR

Q4) a) Develop a PLC ladder program for the following condition: A selection committee comprises four members including the chairman. In order for a candidate to be selected, he or she has to have the support of at least two members. The chairman however can push any candidate through. If each member is provide with a switch that will ring a bell when a candidate is selected. **[6]**

P.T.O.

b) Sketch the symbols of following output control devices:- **[4]**

i) Pilot light
ii) Motor overload relay contact
iii) Solenoid
iv) Relay

Q5) a) Develop a PLC ladder program for the following:- **[6]**

Motor 1 (M1) start as soon as start switch is ON, after 10 seconds M1 goes OFF and Motor 2 (M2) starts. After 5 seconds M2 goes OFF and M3 starts. After 10 seconds M3 goes OFF, M1 starts. When stop switch is ON, all Motors are stop.

b) Explain in detail about Arithmetic function of PLC. (Any two) **[4]**

OR

Q6) a) Develop a PLC program for automatic water sprinkler system of a garden with suitable diagram. **[6]**

b) Illustrate the PLC matrix function in detail. **[4]**

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