Reg. No. :

Question Paper Code: 31931

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Elective

Electrical and Electronics Engineering

01UEE904 - PROGRAMMABLE LOGIC CONTROLLER AND SCADA

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List out the different programming techniques of PLC.

2. Mention the role of counters in PLC.

3. Define MCR instruction.

4. List the sequence of operations carried out in PLC programming.

5. Define SCADA.

6. List the different levels of SCADA.

7. Why SCADA systems are implemented?

8. State the salient features of IEC 61850 SCADA.

9. Give any four real time applications of PLC.

10. List the applications of SCADA.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Describe the architecture of PLC with neat diagram.   (10)

       (ii) Explicate with neat block diagram about power supply used for PLC.   (6)

Or

    (b) Explain the operation timers and counters of PLC with an example.   (16)

12. (a) Discuss the use of math instructions of PLC for automatic control of upper and lower set point limits.   (16)

Or

    (b) Explain in detail about any four types of program control instructions with necessary diagrams.   (16)

13. (a) Explain the various architectures of SCADA with relevant diagram.   (16)

Or

    (b) Discuss the following:

           (i) Human machine interface   (8)

           (ii) SCADA types   (8)

14. (a) Elaborate in detail about the IEC 61850 SCADA system architecture.   (16)

Or

    (b) Discuss the following:

           (i) SCADA energy management systems   (8)

           (ii) System security   (8)

15. (a) Create a ladder diagram for speed control application using PLC.   (16)

Or

    (b) Illustrate how the SCADA is used for substation monitoring and automatic control.   (16)

_____

31931