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**Question Paper Code: 39304**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

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. List the general classifications of PLCs.
3. List the sequence of operations carried out in PLC programming.
4. What standard format is used for PLC math instructions.
5. Define SCADA.
6. List the different levels of SCADA.
7. State the salient features of IEC 61850 SCADA.
8. State the role of energy management system functions.
9. Give any four real time applications of PLC.
10. List the applications of SCADA.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe how the I/O modules connect to the processor in a modular type PLC configuration. (16)

Or

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

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

Or

- (b) Summarize the steps to follow when commissioning a PLC installation. Also discuss about trouble shooting. (16)

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

Or

- (b) Discuss the following (i) Remote terminal unit of SCADA (ii) SCADA server. (16)

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

Or

- (b) Discuss the automatic substation control using SCADA with block diagram. (16)

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

Or

- (b) Discuss the SCADA applications in power systems. (16)
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