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Question Paper Code: 39031

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

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. Mention the role of counters in 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 out the applications of PLC.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe the architecture of PLC with neat diagram. (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) Illustrate how the SCADA is used for substation monitoring and automatic control. (16)

Or

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