

B.Tech. SEM -VI Electrical 2014 Course (CBCS) : WINTER - 2018

SUBJECT: ELECTIVE-II PROGRAMMABLE LOGIC CONTROLLERS

Day: Saturday
Date: 17/11/2018

W-2018-2473

Time: 10.00 AM TO 01.00 PM
Max Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data if necessary

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- Q.1** a) Write a note on present PLC manufactures and evolution of PLC. (05)
b) Explain solid state memories for PLC system. (05)
OR
a) Write down selection criteria for PLC. (05)
b) Explain about input and output module of PLC. (05)
- Q.2** a) How do you explain input and output analog devices? (05)
b) Write a note on fundamentals of ladder diagram. (05)
OR
a) Draw ladder diagrams to verify truth tables for AND gate and OR gate. (05)
b) Explain use of latch in any control circuit. (05)
- Q.3** a) Explain PID control of continuous process. (05)
b) Explain features of closed loop system over open loop system. (05)
OR
a) Explain use of PLC in case of flow control application. (05)
b) What are the problems associated with closed loop control system? (05)
- Q.4** a) Write a note on SCADA communication in electrical power system. (05)
b) What are various communication system components? (05)
OR
a) Explain SCADA system desirable properties. (05)
b) What is role of RTU and MTU in SCADA communication? (05)
- Q.5** a) Differentiate between monolithic and distributed architecture of SCADA. (05)
b) Write a note on Energy management system. (05)
OR
a) Explain SCADA system for petroleum refining process. (05)
b) Explain SCADA system security issues. (05)
- Q.6** a) Write down functions of OSI model layers. (05)
b) Write a note on security implications of SCADA protocol (05)
OR
a) Write a note on DNP3 protocol. (05)
b) Explain process field bus (Profibus). (05)

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