

CBCS SCHEME

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Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 Automation in Process Control

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the Input and Output status file, with a neat diagram. (10 Marks)
b. Describe the Sixteen point I/O module and Decimal address formatting. (10 Marks)

OR

- 2 a. Explain the Discrete DC Input module, with a neat block diagram. (10 Marks)
b. Describe the Typical AC output module of PLC. (10 Marks)

Module-2

- 3 a. Interpret the understanding of relay instruction with NO and NC pushbutton. (10 Marks)
b. Explain the latching and unlatching instruction. List the rules pertain to the instruction. (10 Marks)

OR

- 4 a. Explain the Realization of AND, OR, NOT and XOR logic using ladder diagram. (10 Marks)
b. Explain the Normally Open, Normally Closed I/P and OSR instruction with relevant sketches. (10 Marks)

Module-3

- 5 a. Explain the ON – Delay Timer and Off – Delay Timer, with a neat ladder diagram. (10 Marks)
b. Utilize the Count up and Count down instructions as counter in PLC programming. (10 Marks)

OR

- 6 a. Make use of copy instruction for copying data in PLC. (10 Marks)
b. Make use of Sequence output instruction to control output elements in sequence. (10 Marks)

Module-4

- 7 a. Explain the functional requirement of Distributed Process Control System. (10 Marks)
b. Explain with a neat block diagram of Leeds and Northup Max – I System. (10 Marks)

OR

- 8 a. Explain the Hierarchy for Distributed Control System, with a neat diagram. (10 Marks)
b. Explain the Foundation field bus Architecture with a neat diagram. (10 Marks)

Module-5

- 9 a. Make use of SCADA to describe Industrial Automation. (10 Marks)
b. Make use of RTU to describe its role in Industrial Application. (10 Marks)

OR

- 10 a. Make use of Graceful degradation system structure to develop Reliable system development strategy. (10 Marks)
b. Make use of Modern tools in Modelling and Simulation of system. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.