

CBCS SCHEME

21MT53



Fifth Semester B.E. Degree Examination, June/July 2024 Industrial Automation

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain in detail the classification of automation in production system. (10 Marks)
b. List and explain ten strategies of automation and process improvement. (10 Marks)

OR

- 2 a. With a neat block diagram explain in detail open loop and closed loop control system. (10 Marks)
b. With a neat sketch, explain five levels of automation and control in manufacturing. (10 Marks)

Module-2

- 3 a. Explain in detail any five types of conveyors. (10 Marks)
b. Describe in detail different components and technologies used for automatic identification. (10 Marks)

OR

- 4 a. What are AGVS? Explain different types of AGVS along with technologies used in AGVS. (10 Marks)
b. Explain in detail different conventional storage methods. (10 Marks)

Module-3

- 5 a. Explain four components of manufacturing systems. (10 Marks)
b. Explain various factors that distinguish different types of manufacturing system. (10 Marks)

OR

- 6 a. Explain the classification of manufacturing systems. (10 Marks)
b. What is cellular manufacturing? List the objectives of cellular manufacturing. (10 Marks)

Module-4

- 7 a. With a neat diagram, explain Direct Digital Control (DDC). (10 Marks)
b. Explain in detail, how SCADA is utilized in pumping stations. (10 Marks)

OR

- 8 a. With a neat diagram, explain the components of Direct Control System (DCS). (10 Marks)
b. Explain in detail how SCADA is employed in evacuation processes. (10 Marks)

Module-5

- 9 a. Explain in detail different aspects of networking in DCS. (10 Marks)
b. Explain different types of communication protocols along with its characteristics. (10 Marks)

OR

- 10 a. Explain different types of profibus along with its characteristics. (10 Marks)
b. Define field bus, explain its key features along with its advantages. (10 Marks)

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.