



CBCS SCHEME

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18MT645

Sixth Semester B.E. Degree Examination, June/July 2023 Computer Integrated Manufacturing

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define Automation. Explain the types of Automation. (10 Marks)
- b. Explain Major Elements of CIM systems. (06 Marks)
- c. A product machine is operated 65h/week at full capacity. Its Production rate is 20 units/hr. During a certain week, the machine produced 1000 goods parts and was idle the remaining time.
 - i) Determine the production capacity of the machine.
 - ii) What was the utilization of the machine during the week under consideration?(04 Marks)

OR

- 2 a. With a neat sketch, explain Linear Walking Beam Mechanism. (10 Marks)
- b. Explain the reason for using storage buffers in Automated flow lines. (05 Marks)
- c. With a neat sketch, Rack and Pinion Mechanism. (05 Marks)

Module-2

- 3 a. Explain the different types of Automated Assembly Systems. (10 Marks)
- b. Explain the Upper Bound Approach and Lower Bound Approach in analyzing transfer lines without storage buffer. (10 Marks)

OR

- 4 a. Explain the common reasons for downtime on an Automated Production Line. (10 Marks)
- b. Briefly explain i) Cycle Time ii) Balance Delay. (06 Marks)
- c. What are the factors affecting Line Balancing? (04 Marks)

Module-3

- 5 a. Explain the principles used in product design to Facilitate Automated Assembly. (10 Marks)
- b. With a neat sketch, explain the Physical Configuration of Automated Assembly Systems. (10 Marks)

OR

- 6 a. With a neat sketch, explain Elements of the parts delivery systems. (10 Marks)
- b. Define AGV's. Explain the types of AGV's. (10 Marks)

Module-4

- 7 a. Explain the benefits of CAPP. (10 Marks)
- b. With the help of block diagram, explain Retrieval type CAPP Systems. (10 Marks)

OR

- 8 a. Briefly explain the Generative Process Planning Systems. (10 Marks)
- b. With the help of block diagram, explain Inputs to the MRP systems. (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.

Module-5

- 9 a. Define Numerical Control Systems. Explain the advantages of NC Machine tools. (10 Marks)
b. With a neat block diagram, explain Configuration of CNC Machine Control Units. (10 Marks)

OR

- 10 a. With a neat sketch, explain Horizontal Machining Centre. (08 Marks)
b. Explain the features of CNC Machining Centers. (08 Marks)
c. Describe the following codes : (04 Marks)
i) G01 ii) G03 iii) G10 iv) G00.
