



# CBCS SCHEME

18MT645

Sixth Semester B.E. Degree Examination, July/August 2022

## 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. Explain briefly any two types of automation. (10 Marks)  
b. What are Utilization, availability and work-in-process in CIM? Explain in brief. (10 Marks)

OR

- 2 a. Explain the following work part transfer mechanisms. (10 Marks)  
i) Rack and pinion ii) Geneva mechanism.  
b. Explain storage buffers in automated flowlines. Give reasons for using storage buffers. (10 Marks)

### Module-2

- 3 a. Explain the two approaches of flow lines without storage buffers. (10 Marks)  
b. What are the common reasons for downtime on an automated production line? (10 Marks)

OR

- 4 a. What are the reasons for partial automation? Explain briefly the assumption made in partial automation. (10 Marks)  
b. A 10 station automated flow line has 2 stages of 5 stations each. The ideal cycle time of each stage is 1.5min. The average constant down time is of 10min and all stations have the same probability of stopping, which is 0.005. Determine the line efficiency for the following buffer capacities. i)  $b = 0$  ii)  $b = \infty$  iii)  $b = 10$ . (10 Marks)

### Module-3

- 5 a. Explain with a neat sketch the following elements of part feeding system. (10 Marks)  
i) Hopper ii) Selector/orientor.  
b. Write a short note on design for automated assembly. (10 Marks)

OR

- 6 a. What are the techniques for blocking and traffic control in AGV's? Explain briefly. (10 Marks)  
b. Define AGV's. Explain any two types of AGV's. (10 Marks)

### Module-4

- 7 a. Explain briefly the Retrieval CAPP systems. (10 Marks)  
b. Explain the inputs in an MRP system. (10 Marks)

OR

- 8 a. Explain briefly the Generative CAPP systems. (10 Marks)  
b. What are the benefits of CAPP? (10 Marks)

### Module-5

- 9 a. With a neat following codes : i) G01 ii) G03 iii) G33 iv) G00. (04 Marks)  
b. Explain the horizontal machining center with a neat sketch. (08 Marks)  
c. Explain the general configuration of a CNC system. (08 Marks)

OR

- 10 a. What are the steps in part programming? Explain in brief. (10 Marks)  
b. Explain the advantages of CNC 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.