CBCS SCHEME

USN

Sixth Semester B.E. Degree Examination, Jan./Feb. 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. Explain briefly the processing in manufacturing. **(10 Marks)**
   b. Define Automation. Explain the types of Automation. **(10 Marks)**

OR

2 a. Explain linear-walking beam transfer mechanism. **(10 Marks)**
   b. What are storage buffers in automated flow lines? Give reasons for using storage buffers. **(10 Marks)**

Module-2

3 a. Explain common reasons for down time on an automated production line. **(10 Marks)**
   b. Explain the upper bound approach and lower bound approach in analyzing transfer lines without storage buffer. **(10 Marks)**

OR

4 a. A 20 station transfer line is divided into two stages 10 stations each. The ideal cycle time of each stage is $T_c = 1.2$ min. All of the stations in the line have the same probability of stopping, P = 0.005. We assume that the downtime is constant when breakdown occurs, $T_d = 8.0$ min. Compute the line efficiency for the following buffer capacities:
   (i) b = 0   (ii) b = ∞ (iii) b = 10   (iv) b = 100 **(12 Marks)**
   b. Give reasons for partial automation. Explain briefly the assumption made during the analysis of partial automation. **(08 Marks)**

Module-3

5 a. Explain briefly the design for automated assembly. **(12 Marks)**
   b. With a neat sketch, explain In-line assembly system and Rotary assembly system. **(08 Marks)**

OR

6 a. Define AGV's. Explain any two types of AGV's. **(10 Marks)**
   b. Explain any two common types of vehicle guidance systems in AGV's. **(10 Marks)**

Module-4

7 a. Explain the advantages of CAPP. **(10 Marks)**
   b. Briefly explain Generative Process Planning System. **(10 Marks)**

OR

8 a. Explain briefly Retrieval CAPP system. **(10 Marks)**
   b. Explain structure of material requirement planning. **(10 Marks)**

Module-5

9 a. Define NC Machines. Explain the advantages. **(10 Marks)**
   b. Briefly explain the advantages of CNC systems. **(10 Marks)**

OR

10 a. With a neat sketch, explain horizontal machining center. **(10 Marks)**
   b. Briefly explain the steps in part program development. **(10 Marks)**

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