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18MA62

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. Define CIM and explain the elements of CIM system. (10 Marks)
b. Explain the following mathematical models:
(i) Production rate (ii) Production capacity (iii) Utilization and availability (10 Marks)

OR

- 2 a. Explain the various level of automation. (10 Marks)
b. Briefly explain the lean production. (10 Marks)

Module-2

- 3 a. With a neat sketch, explain retrieval CAPP system. (10 Marks)
b. Explain generative type process planning system and list the advantages of generative CAPP. (10 Marks)

OR

- 4 a. Explain the structure of MRP system with the help of block diagram. (10 Marks)
b. Explain the phases of shop floor control. (10 Marks)

Module-3

- 5 a. Define Group Technology (GT). List benefits and applications of group technology. (10 Marks)
b. Discuss the production flow analysis. (10 Marks)

OR

- 6 a. What are the main objectives of cellular manufacturing? (08 Marks)
b. Explain machine cell design and layout. (12 Marks)

Module-4

- 7 a. Define FMS. What are the benefits and applications of FMS? (10 Marks)
b. Explain the components of FMS. (10 Marks)

OR

- 8 a. What is an automated guided vehicle system? Explain the vehicle guidance systems in AGV. (10 Marks)
b. What are the safety systems in AGVs? (10 Marks)

Module-5

- 9 a. With neat sketch, briefly explain the common robot configuration. (12 Marks)
b. Briefly explain the end effectors and sensors with respect to robots. (08 Marks)

OR

- 10 a. Explain the Robot Programming Languages. (08 Marks)
b. Explain the following terminology related to robot:
(i) Accuracy (ii) Resolution (iii) Repeatability (12 Marks)

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