

CBCS SCHEME

15ME62

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Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020

Computer Integrated Manufacturing

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- a. Discuss types of Automation relative to Production quantity and Product variety. (08 Marks)
b. Discuss Markov Chain Analysis for a two-stage automated production line under several down time distribution. (08 Marks)

OR

- a. Explain the following :
(i) Production capacity (ii) Utilization and Availability
(iii) Manufacturing lead time (iv) Work in Progress. (08 Marks)
b. Explain the operation of walking beam transfer system. (08 Marks)

Module-2

- a. Explain the role of computers in Design Process. (08 Marks)
b. A square with an edge length of 10 units is located on the origin. With one of the edge at an angle of 30° with the x-axis. Calculate the new position of the square if it is rotated about z-axis by an angle 30° in the clockwise direction. (08 Marks)

OR

- a. Discuss retrieval-type process planning system. (08 Marks)
b. With a block diagram, explain the inputs to MRP. (08 Marks)

Module-3

- a. With a sketch, explain FMS layout configurations. (10 Marks)
b. Explain the functions performed by FMS computer system. (06 Marks)

OR

- a. Explain the types of AS/RS. (10 Marks)
b. Explain minimum rational Work Elements and Precedence constraints. (06 Marks)

Module-4

- a. Explain the basic components of NC system. (08 Marks)
b. Write the manual part programming for the milling components shown in Fig.Q7(b) consider spindle speed as 800 rpm and feed rate as 100 mm/min and absolute positioning. Assume plate thickness as 10 mm and all dimensions are in mm.

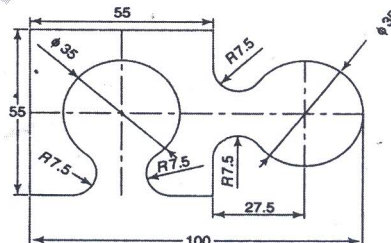


Fig.Q7(b)

1 of 2

(08 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.

OR

- 8 a. Discuss various methods used to programme robots to perform a given work cycle. (08 Marks)
b. Discuss various application areas for industrial robots. (08 Marks)

Module-5

- 9 a. With a neat sketch, explain photo polymerization process in additive manufacturing. (08 Marks)
b. Discuss IOT applications in manufacturing. (04 Marks)
c. Define Big data and Cloud computing. (04 Marks)

OR

- 10 a. With a neat sketch, explain Sheet Lamination Process in additive manufacturing. (08 Marks)
b. Explain Industry 4.0 application in Manufacturing. (08 Marks)
