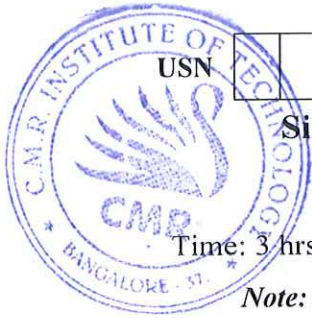


CBCS SCHEME

15ME62



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

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

OR

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

Module-2

- Explain the role of computers in Design Process. (08 Marks)
 - 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

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

Module-3

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

OR

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

Module-4

- Explain the basic components of NC system. (08 Marks)
 - 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. (08 Marks)

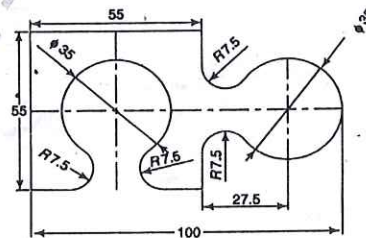


Fig.Q7(b)

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.

11 JAN 2020

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)

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