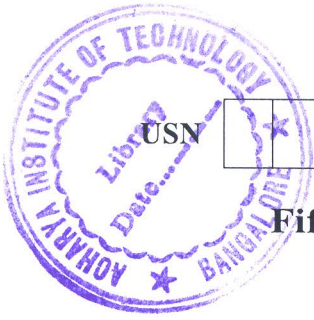


CBCS Scheme



USN

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15MA52

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020 Computer Aided Design and Manufacturing

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Define CAD/CAM. With a neat diagram, explain the product cycle in a CAD/CAM environment. (08 Marks)
b. List out advantages and disadvantages of CAD/CAM. (08 Marks)

OR

- 2 a. What are the functions of computer in CAD/CAM? (08 Marks)
b. Explain the basic design process of CAD/CAM. (08 Marks)

Module-2

- 3 a. Explain with neat sketches any two input devices. (08 Marks)
b. What do you mean by wire frame modeling and solid frame modeling? (08 Marks)

OR

- 4 a. Explain in detail basic modules and their function in graphics software. (08 Marks)
b. Explain the following IGES, STEP, DXF, DMIS. (08 Marks)

Module-3

- 5 a. Explain with sketches
i) FEM element types
ii) Mesh generation. (08 Marks)
b. Discuss the pre-processing and post-processing stage in FEM. (08 Marks)

OR

- 6 a. Define NC. Explain with sketches, the different types of motion control systems used in NC machines. (08 Marks)
b. Explain the importance of tool presetting in CNC. Use a typical example with suitable sketches and explain. (08 Marks)

Module-4

- 7 a. Explain turning centers and high speed machine tools in CAM programming. (08 Marks)
b. Explain turning machining centers in CAM programming. (08 Marks)

OR

- 8 a. Explain the steps involved in development of a part program in NC/CNC machining. (08 Marks)
- b. Write a manual part program for the following in Fig.Q8(b).

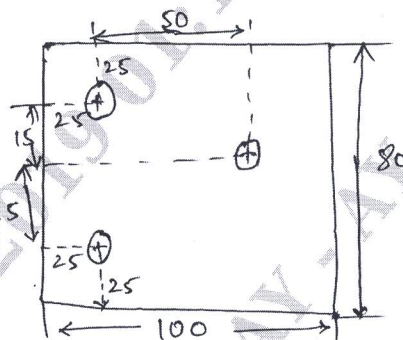


Fig.Q8(b)

Plate thickness = 20mm,
 Drill hole = 12.5mm,
 Drill speed = 590rpm,
 Drill feed rate = 90mm/min,
 Starting tool position = (25, 0, 50).

(08 Marks)

Module-5

- 9 a. Explain the types of sensors used in Robots. (08 Marks)
- b. Define a Robot. Briefly explain with neat sketches
- Polar co-ordinate configuration
 - Cartesian coordinate.

(08 Marks)

OR

- 10 a. Discuss the advantages, disadvantages and applications of Robots. (08 Marks)
- b. Explain with neat sketch the different types of joints used in Robots. (08 Marks)
