

CBCS SCHEME

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15MA52

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 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 and explain briefly CAD/CAM. (04 Marks)
b. With a neat block diagram, explain the product cycle overlaid with CAD/CAM. (12 Marks)

OR

- 2 a. Explain the application of computers to the design process with block diagram. (12 Marks)
b. Enumerate the advantages of CAD/CAM (any 8). (04 Marks)

Module-2

- 3 a. Explain with neat diagram the cathode ray tube. To generate the images on CRT screen, explain the techniques used in computer graphics. (11 Marks)
b. List out the detailed classification of the input and output devices. (05 Marks)

OR

- 4 a. Explain briefly the function of a Graphics package. (05 Marks)
b. Illustrate the three transformations for two dimension considering a line. (07 Marks)
c. Explain briefly the basic features of IGES and STEP to exchange of modeling data. (04 Marks)

Module-3

- 5 a. Explain the basic steps of Finite Element Method (FEM). (08 Marks)
b. Sketch the different types of 1D, 2D and 3D elements (any eight). (08 Marks)

OR

- 6 a. Explain the three NC motion control systems. (06 Marks)
b. Explain how ATC works in a machining centers with neat sketch. (06 Marks)
c. Compare CNC and DNC (any four). (04 Marks)

Module-4

- 7 a. Explain the different NC words. (08 Marks)
b. Explain the following :
(i) CNC Machining center
(ii) CNC Turning center. (08 Marks)

OR

- 8 a. Explain the part programmer's and computer job in computer assisted part programming. (06 Marks)
- b. Write the manual part programming of the part shown in Fig.Q8(b). Assume suitable feed and speed rate. The thickness of the component is 5 mm. Milling tool $\phi 10$ mm. (12 Marks)

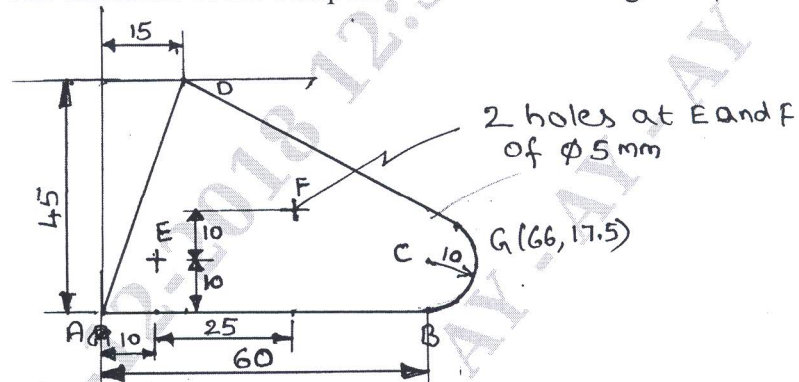


Fig.Q8(b)

Module-5

- 9 a. Define Robot. Enumerate the different configurations of robot. Explain with neat sketch any two types of configurations. (08 Marks)
- b. Explain briefly the four programming methods of robot. (08 Marks)

OR

- 10 Write short notes (any four) of the following :

- End effectors
- Robot sensors
- Robot applications.
- Robot motions
- Work cell control and interlocks.

(16 Marks)
