



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Industrial and Production Engineering

Semester End Examination; Dec - 2016/ Jan - 2017

Computer Aided Design and Manufacturing

Time: 3 hrs

Max. Marks: 100

Note: Answer *FIVE* full questions, selecting *ONE* full question from each unit.

UNIT - I

- 1 a. Explain the influence exerted by computer on the manufacturing scene. 12
- b. List out the advantages and disadvantages of CAD and CAM. 8
- 2 a. What are the functions that get benefited by the use of computers in design and manufacturing functions? 12
- b. Discuss in detail the following: 8
 - i) CPU
 - ii) Storage devices.

UNIT - II

- 3 a. Describe the methods of defining elements in interactive computer graphics. 10
- b. Explain the functions of a graphics package. 10
- 4 a. Write a short note on concatenation. 5
- b. Explain the approaches to the problem of solid modelling. 10
- c. Write the difference between wire frame and solid modelling. 5

UNIT - III

- 5 a. Briefly explain the different types of NC modes. 10
- b. With neat sketch, explain the milling tooling systems. 10
- 6 a. Explain the different components of DNC. 10
- b. How does a tool changes occur in an Automatic tool changer? 10

UNIT - IV

- 7 a. With a block diagram, explain the part program fundamentals. 10
- b. Write the CNC part programming for the components shown in Fig. 7(b) for the milling and drilling operation.

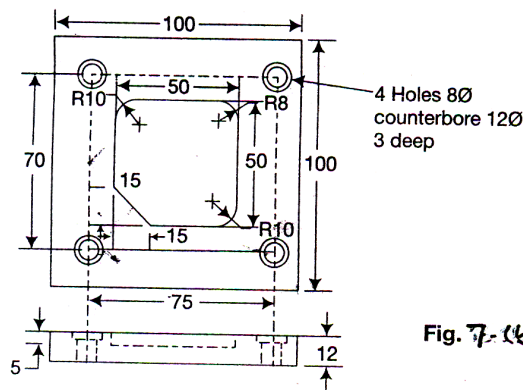


Fig. 7- (b)

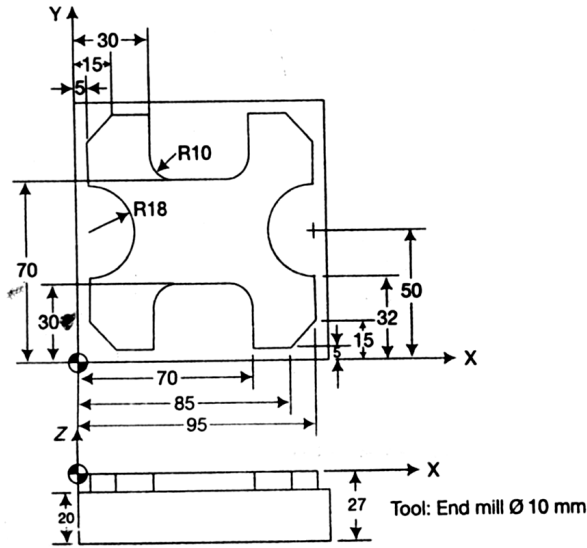
10

8 a. Explain the following used in CNC programming :

- i) Canned cycle
- ii) Tool length compensation.

8

b. Write the CNC part programming for the components shown in Fig. 8 (b).



12

Fig. 8(b)

UNIT - V

9 a. With a neat sketch, explain any four types of Robot configuration.

12

b. Briefly explain the benefit of group technology.

8

10 a. With a neat sketch, explain four types of FMS layouts used in manufacturing system.

12

b. Explain the following :

- i) End effectors in Robot
- ii) Sensors used in Robot
- iii) Industrial application of Robot.

8

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