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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:
i) CPU ii) Storage devices. 8

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 apporaches 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.

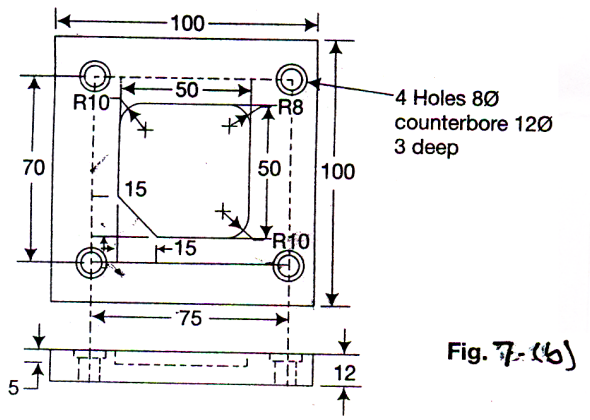


Fig. 7(b) 10

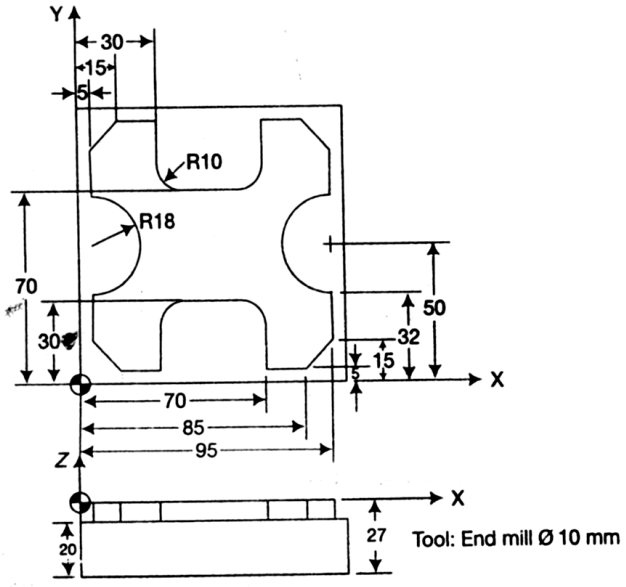
Contd…2

8 a. Explain the following used in CNC programming :

i) Canned cycle 8

ii) Tool length compensation.

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 8

iii) Industrial application of Robot.

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