U.S.N | | | | | | | | | | |

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

(An Autonomous Institution affiliated to VTU, Belagavi)

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

Semester End Examination; May / June - 2019

CAD / CAM

Time: 3 hrs *Max. Marks: 100*

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

UNIT - I

1 a. With a block diagram, explain the product cycle in Conventional and Computerized manufacturing environment. 14

b. Briefly explain the different types of production processes. 6

2 a. Explain the functions of programmable controller. 8

b. Explain Minicomputer and Microcomputer instructions. 12

UNIT - II

3 a. Explain the functions of a graphics package. 10

b. A triangle is defined in a two dimensional ICG system by its vertices (0, 2), (0, 3) and (1, 2). Perform the following transformations on this triangle :

i) Translate the triangle in space by 2 units in the *X*-direction and 5 units in the *Y*-direction

ii) Scale the original triangle by a factor of 1.5 10

iii) Scale the original triangle by a factor of 1.5 in the *X*-direction and 3.0 units in the *Y*-direction

iv) Rotate the original triangle by 45° about the origin

4 a. Explain the construction of geometry in CAD Package. 8

b. Explain different CAD data exchanges standards. 12

UNIT - III

5 a. Explain NC Procedure for a milling component. 10

b. With a block diagram, explain the components of a DNC system. 10

6 a. With a neat sketch, explain the different types of work holding devices in NC machines. 10

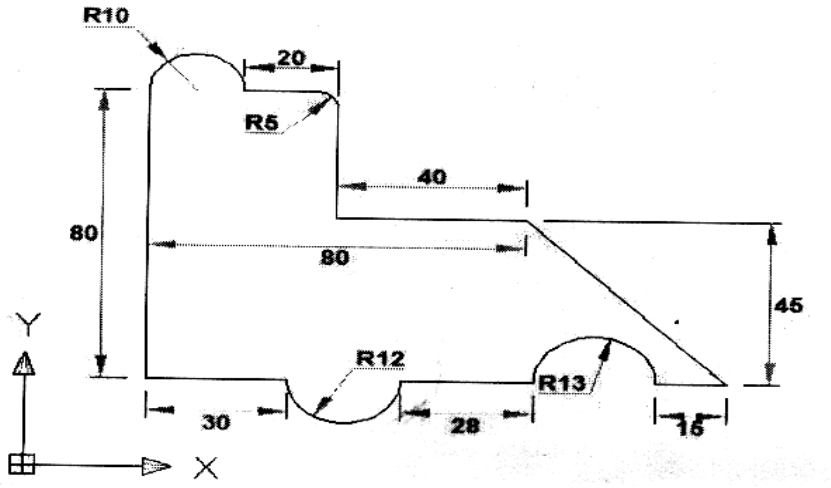
b. Explain Machine Control Unit (MCU) in CNC Machines. 10

UNIT - IV

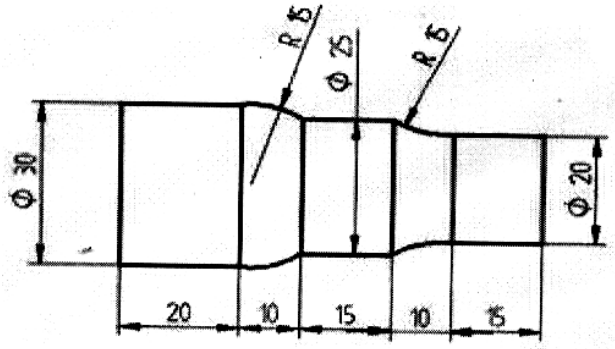
7 a. With a block diagram, explain the steps involved in CNC part programming. 8

b. Write a CNC programming for the component as shown in the below figure. Assume suitable parameters. 12

Contd… 2



8 a. Write a CNC programming for the component as shown in the below figure. Assume suitable parameters. Assume suitable cutting conditions.



10

b. Explain NC manual part programming for a turning component. 10

UNIT - V

9 a. Explain three parts classification and coding systems in group technology. 12

b. Explain the benefits of FMS manufacturing. 8

10 a. With a neat sketch, explain the basic robot motions. 10

b. Explain the different types of robot sensors. 10

* * * *