data to be

1059

Code : 15ME62T

Register Number | | | | | | | | | | |

VI Semester Diploma Examination, Oct./Nov.-2019

COMPUTER INTEGRATED MANUFACTURING

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from Part – **A**.

(ii) Answer any **seven** questions from Part – **B**.

PART – A

1. Define automation and mention its needs. **5**

2. Explain about five levels of automation. **5**

3. List the features of CNC. **5**

4. List the important factors to be considered while designing guideways. **5**

5. Explain the methods of Dimensioning. **5**

6. Explain circular interpolation by specifying radius. **5**

7. List the Benefits of Group Technology. **5**

8. List the major elements of FMS. **5**

9. Explain the different types of control systems used in robot. **5**

[Turn over

PART – B

10. Explain with block diagram the main elements of CIM system. **10**

11. (a) Explain three basic components of NC system. **5**
    (b) List the difference between NC and CNC system. **5**

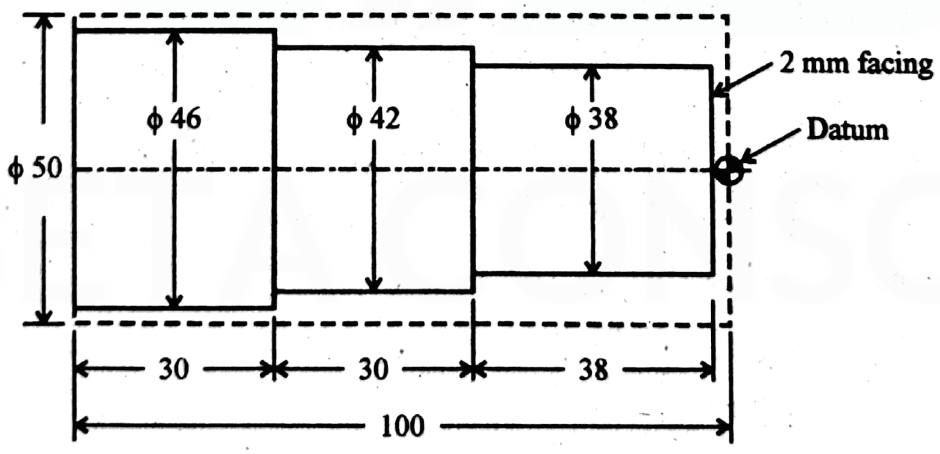
12. Explain static load, dynamic load in machine structure. **10**

13. Sketch and explain **10**
    (a) Hydrostatic bearing
    (b) Hydrodynamic bearing

14. (a) List the requirements of CNC feed drives. **5**
    (b) Explain the process of Automatic Pallet changer. **5**

15. (a) Explain Tool length compensation. **5**
    (b) What are subroutines (Macros) ? And mention their uses. **5**

16. Write the part program for Turning operation to produce the component as per the Fig. 1. Adopt absolute dimensioning method. **10**



Raw workpiece = ϕ 50 × 100 mm

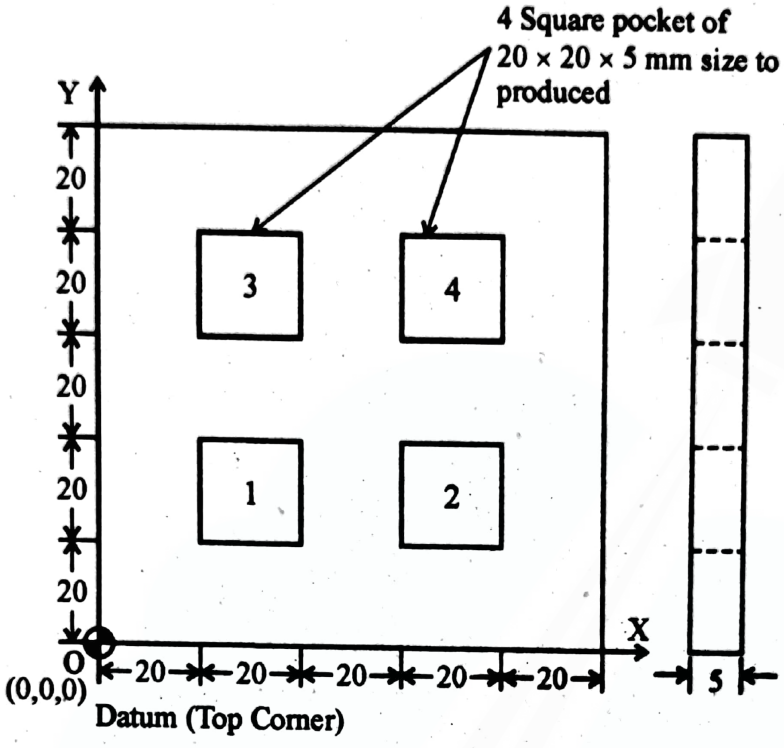
..... (Dotted line) = Raw workpiece

_____ (Continuous line) = Final part (Finished part)

All the Dimentions are in mm.

Fig. 1

17. Write the part program, to produce the component as per given Fig. 2 by using subroutines (macros). Adapt absolute dimensioning method. **10**



Raw workpiece size = 100 × 100 × 5 mm

Fig. 2

18. With block diagram, explain developing a Retrieval type of computer process planning and generative type of computer aided process planning. **10**

19. Explain with neat sketch

    (a) Six degree of freedom of motion in robot.

    (b) Cylindrical co-ordinate robot. **10**