1273

Code : 15ME62T

Register Number

VI Semester Diploma Examination, Nov./Dec. 2018

COMPUTER INTEGRATED MANUFACTURING

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

Note : (i) Answer any **six** from Part – **A** and **seven** from Part – **B**.
(ii) **All** dimensions are in mm only.

PART – A

1. List ten strategies for Automation and production system. **5**

2. State any five benefits of CIM. **5**

3. List any five features of CNC. **5**

4. List the important parts and aspects of CNC machines to be considered in their designing. **5**

5. (a) Define CNC part programming. **2**
   (b) State the functions of automatic tool changers in CNC machines. **3**

6. Explain with sketch the methods of dimensioning the drawings for part production in CNC. **5**

7. Compare between direct and indirect measuring system used in CNC machine tool. **5**

8. State any five necessities of antifriction linear motion guideways used in CNC machine tool. **5**

9. List out the five important technical features required for improving the performance capability of a robot. **5**

PART – B

10. Explain with a block diagram the five levels of automation. 10

11. (a) Explain the three basic components of NC system. 5
    (b) Identify machine tool and other metal working applications of NC system. 5

12. (a) Explain dynamic load and thermal load in machine structure of CNC. 5
    (b) Explain the principle of Hydrodynamic bearing. 5

13. Sketch and explain a typical machine tool with automatic pallet changer. 10

14. (a) Explain with sketch the axes and motion nomenclature for CNC machines. 5
    (b) Illustrate with an example the circular interpolation by specifying the radius. 5

15. (a) Define cellular manufacturing. 2
    (b) List the three functions of classification and coding system to develop part family in Group Technology. 3
    (c) Explain the generative type of computer aided process planning method. 5

16. (a) Identify the major elements of a flexible manufacturing system. 5
    (b) State any five advantages of Group Technology. 5

17. (a) Explain any five types of grippers used in industrial robot. 5
    (b) Identify important application areas of industrial robots. 5

18. Write a part programme for the following component shown in figure (A). 10

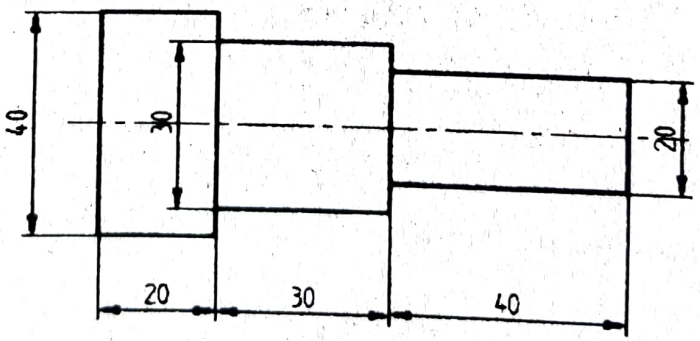

Fig. (A)

19. Write a part programme using subroutine for the following component shown in figure (B). **10**

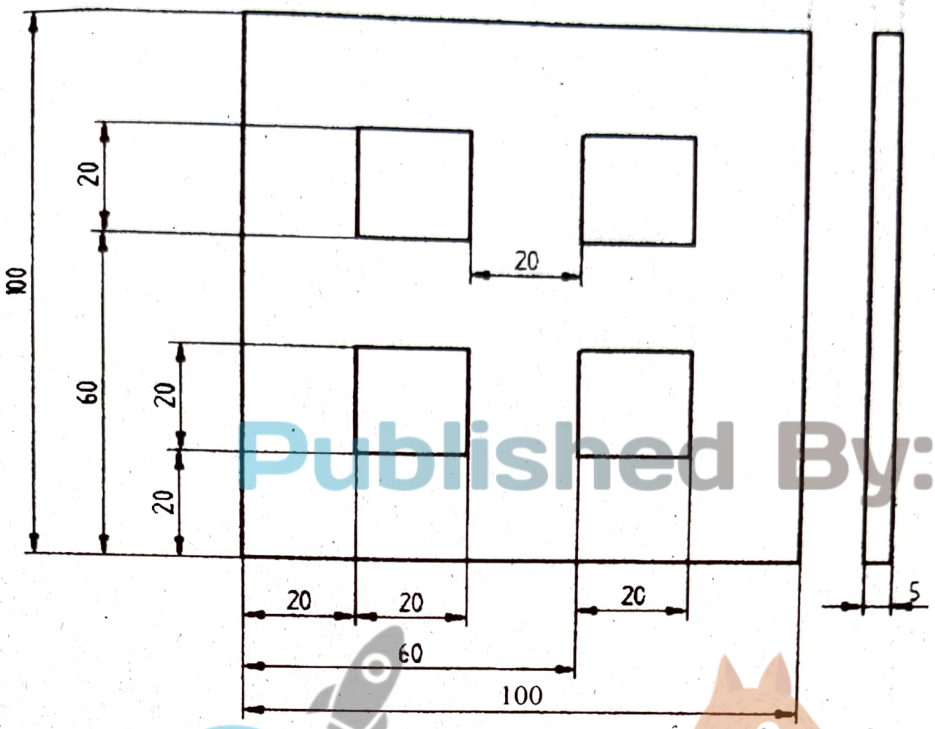

Fig. (B)