USN | | | | | | | | | | 18MA52

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022
Computer Aided Design and Manufacturing

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Explain the role of computers in design and manufacturing.   **(10 Marks)**
   b. Define CAD and CAM. List the advantages and limitations of CAD and CAM.   **(10 Marks)**

OR

2 a. Explain the product cycle in computerized manufacturing environmental with block diagram.   **(12 Marks)**
   b. Explain the influence of computers in manufacturing environment.   **(08 Marks)**

Module-2

3 a. With a neat sketch, explain CRT display device.   **(10 Marks)**
   b. Explain Hardcopy devices.   **(10 Marks)**

OR

4 a. With the help of a neat sketch, explain graphics software configuration.   **(10 Marks)**
   b. Discuss wireframe and solid models with merits and demerits.   **(10 Marks)**

Module-3

5 a. Explain the steps involved in Finite Element Analysis.   **(10 Marks)**
   b. Briefly explain Element of Numerical control system.   **(10 Marks)**

OR

6 a. Explain tool presetting for machining center tooling.   **(10 Marks)**
   b. Explain Automatic Tool changers.   **(10 Marks)**

Module-4

7 a. Explain the categories of CNC Turning centers.   **(10 Marks)**
   b. The component to be machined is shown in Fig Q7(b). Develop a CNC program to drill all the holes.
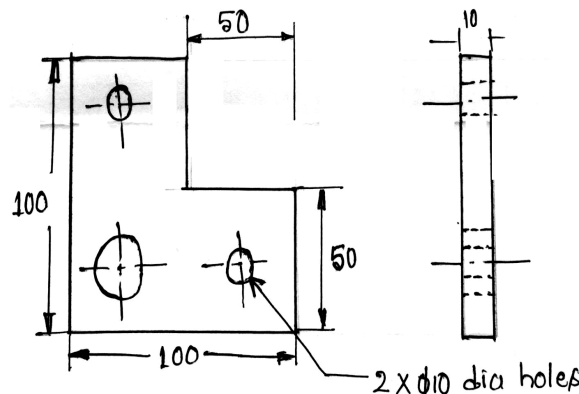

Fig Q7(b) All dimensions in mm   **(10 Marks)**

OR

8 a. Explain the steps involved in the development of a part programming in NC machining.

(10 Marks)

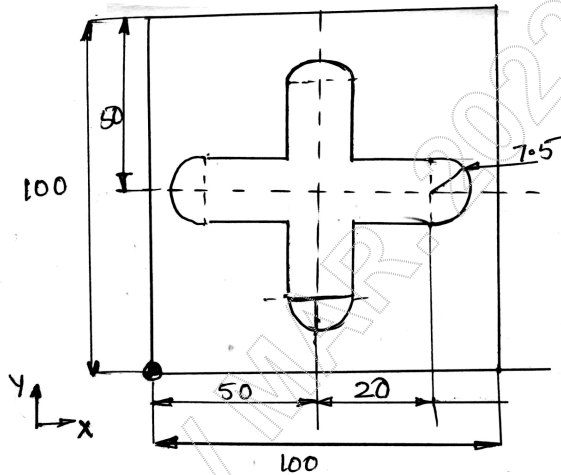   b. Develop a CNC part program for the part shown in Fig Q8(b). Assume thickness of 15mm and hole depth as 10mm.

Fig Q8(b)   **(10 Marks)**

Module-5

9 a. Define a Robot. With the help of a neat sketch explain the Robot configuration.   **(14 Marks)**
   b. With the help of a neat sketch, explain the end efforts.   **(06 Marks)**

OR

10 a. List and explain various applications of a Robot.   **(10 Marks)**
   b. Explain the different Robot programming language.   **(10 Marks)**

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