

# CBCS SCHEME

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18IP46

## Fourth Semester B.E. Degree Examination, July/August 2022

### CAD/CAM

Time: 3 hrs.

Max. Marks: 100

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

#### Module-1

- 1 a. Explain with neat sketch role of computers in design process. (10 Marks)  
b. Explain with a block diagram, product cycle in a computerized manufacturing environment. (10 Marks)

OR

- 2 a. Explain the principles of hardware units in CAD system. (10 Marks)  
b. Write notes on input and output devices used in computers. (10 Marks)

#### Module-2

- 3 a. Briefly explain the functions of graphic packages. (08 Marks)  
b. Explain the construction of geometry in CAD. (06 Marks)  
c. Discuss wire frame and solid models. (06 Marks)

OR

- 4 a. Briefly explain the NC elements. (08 Marks)  
b. Describe the components of the CNC and DNC system. (12 Marks)

#### Module-3

- 5 a. Write ISO nomenclature of tool insert and tool holder. (10 Marks)  
b. Briefly explain the milling tooling system. With neat sketch. (10 Marks)

OR

- 6 a. With the help of neat sketch explain horizontal milling centre. (10 Marks)  
b. Explain write notes on working principle of CNC turning centre. (10 Marks)

#### Module-4

- 7 a. Define part program. Explain the steps involved in part program. (10 Marks)  
b. Write an manual program to drill holes in a plate as shown in Fig.Q7(b). Spindle rotates at 500rpm and required 65mm feed rate is 0.05mm/rev to drill the hole.

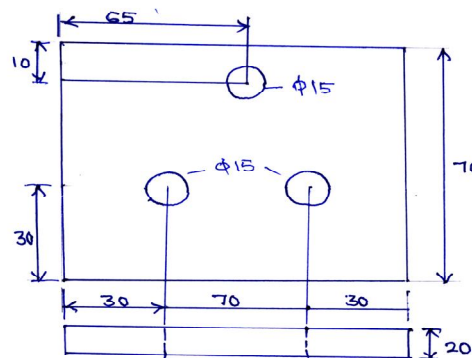
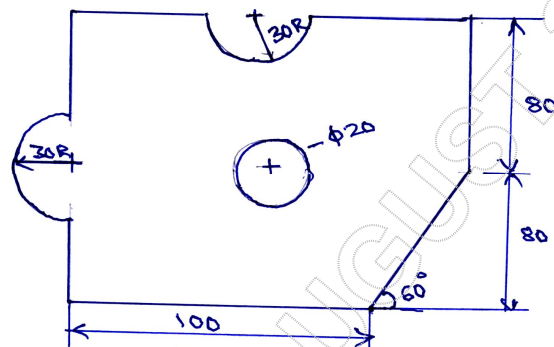


Fig.Q7(b) All dimensions are in mm.

(10 Marks)

OR

- 8 a. Write a short note on NC words and NC data formats. (10 Marks)
- b. Fig.Q8(b) shows the details of a certain components to be machined. The machining involves profile milting and drilling for both take speed = 500rpm, feed = 75mm/min. Assume suitable thickness, write the manual program for matching the components.



All dimensions are in mm

Fig.Q8(b)

(10 Marks)

**Module-5**

- 9 a. Define robot with the help of neat sketch explain the robot configuration. (10 Marks)
- b. Explain briefly the robot sensors. (10 Marks)

OR

- 10 a. Explain the robot motions with examples. (10 Marks)
- b. Write short notes on work cell, control and inter locks. (10 Marks)

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