

R13

Code No: 117BD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, July/August - 2023

CAD/CAM

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) List out the wire frame entities. [2]
- b) What is GUI? Why GUI's are popular? [3]
- c) What is subdividing? [2]
- d) Write the parametric equation of ruled surface. [3]
- e) What are G02 and G40 codes in CNC programming? [2]
- f) Write about adaptive control system. [3]
- g) What are the two types of parts similarities? [2]
- h) What are steps included in capacity requirement planning? [3]
- i) Define FMS. [2]
- j) Define off-line and on-line inspection. [3]

PART – B

(50 Marks)

- 2.a) List and explain any two types of input and output devices.
 - b) Differentiate between database and data structure. [5+5]
- OR**
- 3.a) Explain why parametric representation of curves is used compared to implicit representation in CAD.
 - b) Compare Bezier curve and B-splines curves for CAD applications. [5+5]
- 4.a) Define Bezier surface? State its characteristics.
 - b) Explain different Boolean operations in solid modeling. [5+5]
- OR**
5. What are the CSG entities? Explain the CSG representation scheme in solid modeling with an example. [10]

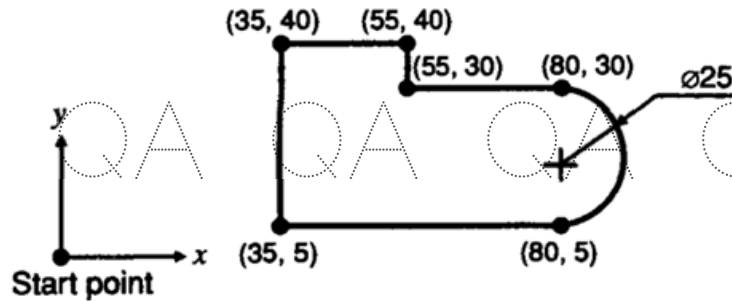
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6. What are the NC elements? Briefly discuss about each of them. [10]

OR

7.a) Explain the principle of CNC.

b) Write a part program manually to mill the edge of the plate as shown in figure. All the dimensions are in mm only. Assume thickness as 10 mm. [4+6]



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8.a) What is group technology? When is it suitable in manufacturing? What are its benefits?

b) What is CAPP? Explain the any one type of CAPP with neat sketches. [5+5]

OR

9.a) Explain the machine cell design.

b) What is MRP II? How does it benefit the management of a factory? [5+5]

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10.a) Write a brief note on the advantages of applying Group Technology in an industrial set up.

b) What is MRP? Explain inputs to MRP and various MRP outputs. [5+5]

OR

11.a) Explain the different types of computer control systems used in CIM.

b) Explain any one contact inspection technique with neat sketch. [5+5]

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