R16

Code No: 137AZ

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

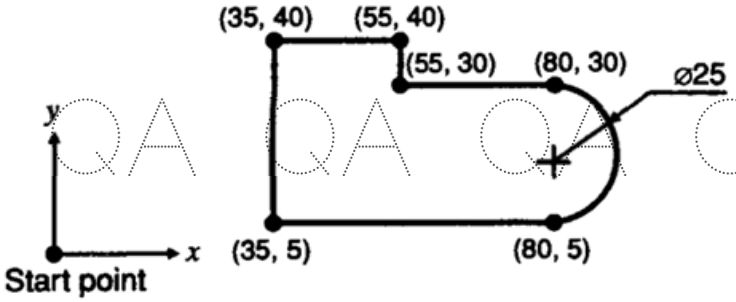
5.	What are the CSG entities? Explain the CSG representation scheme in solid modeling with an example.	[10]

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]



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]

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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