Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI EXAMINATION – SUMMER 2025

Subject Code: 3161917 **Date: 04-06-2025**

Subject Name: Computer Aided Manufacturing

Time: 10:30 AM TO 01:00 PM **Total Marks:70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Explain the benefits of Computer Aided Manufacturing.	**03**
	(b)	Explain important G & M codes used in CNC Milling operations ?	**04**
	(c)	What do you mean by CIM? What are the benefits of CIM? Draw a CIM wheel.	**07**
Q.2	**(a)**	Explain tool radius compensation with example.	**03**
	(b)	Explain Axis designation in CNC machine tool with sketch.	**04**
	(c)	Write Canned cycle programme for Diameter Grooving for FIG.1.	**07**

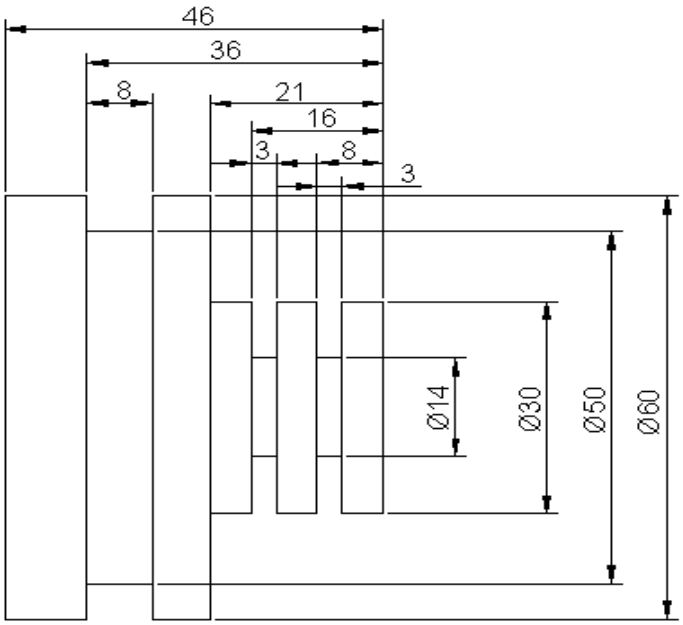

Figure 1

OR

	(c)	Write Canned cycle programme for Axial turning for FIG.2.	**07**

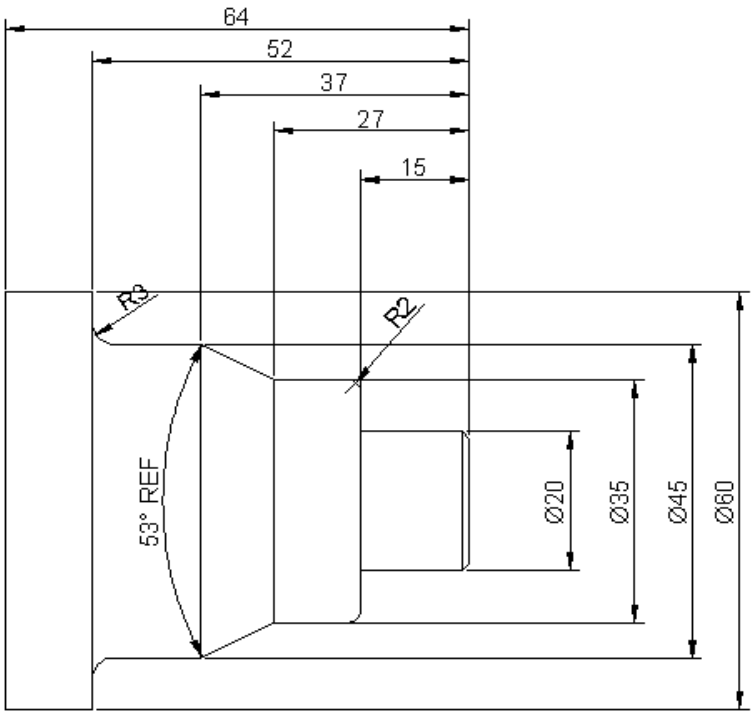

Figure 2

Q.3 **(a)** Explain canned drilling cycles. **03**

(b) Describe with sketch the working and construction of recirculating ball screw used in CNC machine tool. **04**

(c) Write the programme for circular pocketing CNC milling as shown in FIG.3. **07**

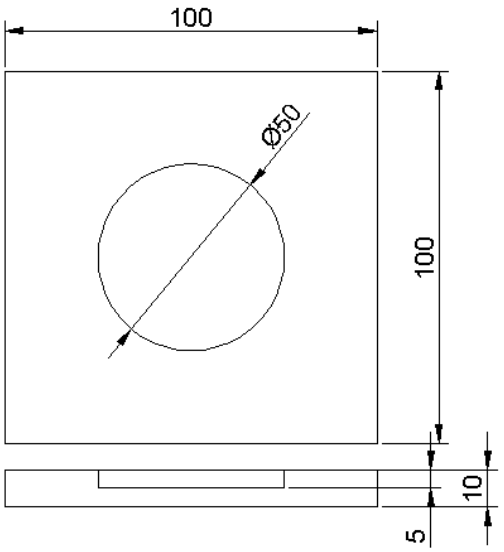

Figure 3

OR

Q.3 **(a)** Explain the open loop and close loop control system. **03**

(b) Explain the Generative type CAPP. **04**

(c) Write the programme for FIG 4 with mirroring function. **07**

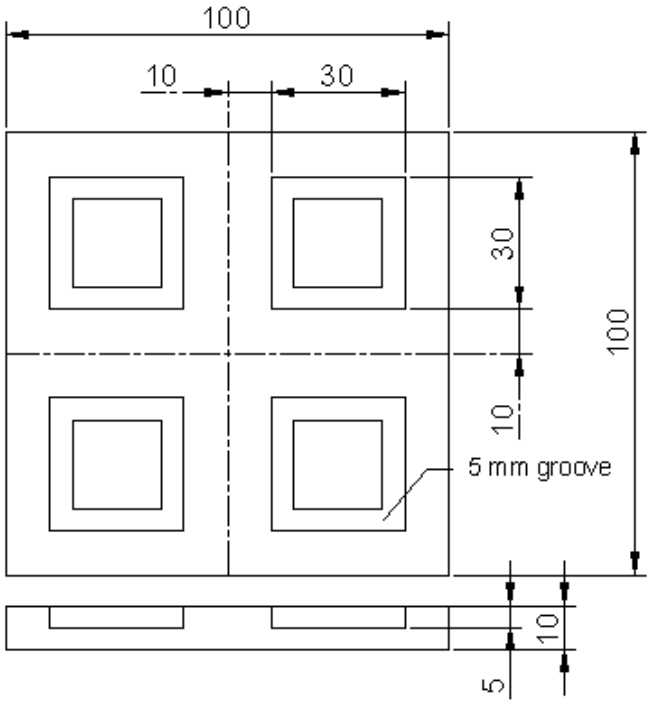

Figure 4

Q.4	**(a)**	Explain the conditions in which GT can be applied.	**03**
	(b)	Define JIT. Write the disadvantage of JIT.	**04**
	(c)	Explain OPITZ classification system in Group Technology?	**07**
		OR	
Q.4	**(a)**	Explain AND, OR, XOR, NOT, NAND, NOR logic gate	**03**
	(b)	Explain ladder programming in PLC with example.	**04**
	(c)	Explain the types of AS/RS and its applications	**07**
Q.5	**(a)**	What is MRP-II? Explain in brief.	**03**
	(b)	Explain the FMS layout configurations	**04**
	(c)	Explain the different types of flexibilities in FMS.	**07**
		OR	
Q.5	**(a)**	Draw the types of joints used in robots.	**03**
	(b)	Write a brief note on types of sensors used in robots.	**04**
	(c)	List the robot configurations and explain any two with neat sketch.	**07**

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