Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013

Subject code: 1720802 **Date: 27-12-2013**

Subject Name: Computer Aided Manufacturing

Time: 10.30 am – 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.**

Q.1 **(a)** Briefly explain the basis of designating the co-ordinate axes on CNC machine tools. Explain with neat sketch axes designation for CNC turning centre. **07**

(b) What is subroutine? Explain subroutine with suitable example. **07**

Q.2 **(a)** What are the steps needed to develop the flexible manufacturing cells from scratch? **07**

(b) Define computer integrated manufacturing. Describe the factors responsible for the success of CIM applications in present time. **07**

OR

(b) What is dwell? Explain its function and how it is specified in part program. What are the limitations of cutter radius compensation? **07**

Q.3 **(a)** Write manual part program for the parts as shown in Figure 1. on two axis turning centre. **07**

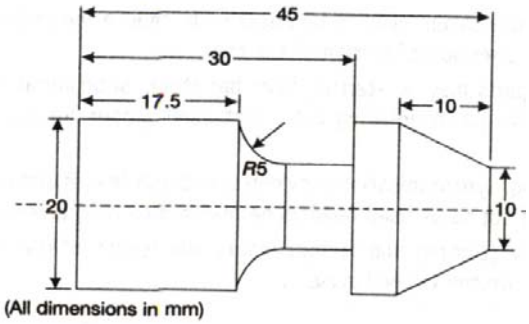

Figure 1.

(b) Write a brief write up on encoder used in CNC machine tools. **07**

OR

Q.3 **(a)** Write a complete part program for the following component as shown in Figure 2. Using end mill cutter of 20 mm diameter clearly show the axis system chosen with a sketch and direction of the cutter for the motion statements. **07**

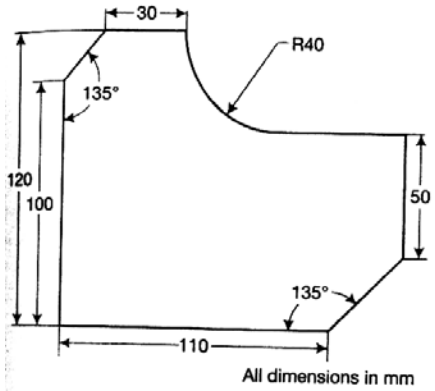

Figure 2.

	(b)	Describe automatic tool changer with neat sketch.	**07**
Q.4	**(a)**	What do you understand by term “Group technology”? Explain benefits and limitation of it.	**07**
	(b)	Write short note on Automated guided vehicles.	**07**
		OR	
Q.4	**(a)**	Write short note on CMM.	**07**
	(b)	What is philosophy of Just in Time? To achieve the goals of JIT what approaches to be followed.	**07**
Q.5	**(a)**	Define CIM? Explain the aspect that should consider in implementing CIM.	**07**
	(b)	Write short note on mechatronics.	**07**
		OR	
Q.5	**(a)**	What are the software and hardware requirements for CAD/CAM integration?	**07**
	(b)	Explain with neat sketch the various types of layouts used in FMS design and their applications.	**07**

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