Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – SUMMER 2016

Subject Code:171903 **Date:10/05/2016**

Subject Name:Computer Integrated Manufacturing

Time:02:30 PM to 05:00 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)**	What do you mean by CIM? What are the benefits of CIM? Draw a CIM wheel.	**07**
	(b)	How are the axes designated in CNC machine tools? Designate axes for three axes Vertical milling machine with neat sketch. State the rules followed by you in sequence.	**07**
Q.2	**(a)**	Which are the formats used for manual part programming? Explain word address format. Write word address format for milling and drilling operations.	**07**
	(b)	What do you mean by ATC? State necessary requirements for ATC. Explain any two ATC with neat sketch.	**07**
		OR	
	(b)	Explain the types of manufacturing systems. Justify: "CNC machines are more suitable for job-shop and batch production".	**07**
Q.3	**(a)**	Compare CNC machines with conventional machines in regard to hardware used in them.	**07**
	(b)	State various automated programmed tools language. List various statements used in APT. Explain geometric statements of APT.	**07**
		OR	
Q.3	**(a)**	What is CAPP? Differentiate variant and generative CAPP.	**07**
	(b)	What do you mean by canned cycle? Write general syntax of G81 canned cycle used in CNC milling.	**07**
Q.4	**(a)**	Explain the types of code structures used in GT classification citing illustrations.	**07**
	(b)	What is robot sensing? What are the different sensors used in robotics. Discuss any two in brief.	**07**
		OR	
Q.4	**(a)**	Sketch SCARA robot and explain its degree of freedom and motion.	**07**
	(b)	Explain Manufacturing Resource planning (MRP-II).	**07**
Q.5	**(a)**	What are the objectives of MRP system? State the various input to MRP system. Draw an MRP structure.	**07**
	(b)	Define FMS. Which are the components of FMS? Draw FMS layouts.	**07**
		OR	
Q.5	**(a)**	Explain robotic work cell control and interlocks.	**07**
	(b)	Draw a neat sketch of recirculating ball screws. What are the various methods of Preloading? State the advantages of ball screws over conventional lead screws.	**07**

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