Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Sem - IV Examination May- 2011

Subject code: 740801

Subject Name: Rapid Prototyping & Tooling

Date:16/05/2011 **Time: 10.30 am – 01.30 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)**	Describe how the impact of rapid manufacturing is manifest in the Product Development Cycle.	**07**
	(b)	Describe the Innovation process and its impact on economy.	**07**
Q.2	**(a)**	How the synergic integration technologies help in rapid product development?	**07**
	(b)	How do you model an object, which is irregular, as the blade of a propeller type windmill?	**07**
		OR	
	(b)	What are the limitations in utilizing the sweep method for geometric construction?	**07**
Q.3	**(a)**	Define Virtual reality and Augmented reality. Compare these two.	**07**
	(b)	When will you use a plain stress (2D) element?	**07**
		OR	
Q.3	**(a)**	Explain in detail design for X.	**07**
	(b)	What is 'canned cycle'? Explain with neat sketches the differences between the operation of the canned cycles G81 and G83.	**07**
Q.4	**(a)**	One of the axis of a robot is a telescoping arm with a total range of 0.7 meter. The robot's control memory has a 12-bit storage capacity for this axis of motion. Determine the robot's control resolution for this axis.	**07**
	(b)	Describe the Generative type CAPP systems with example.	**07**
		OR	
Q.4	**(a)**	Explain in detail the methodology of concurrent engineering.	**07**
	(b)	What is the Indirect rapid tooling process? Explain.	**07**
Q.5	**(a)**	Compare the shape-based and the product data-based exchange standards. Which has the potential to support industrial automation? Why?	**07**
	(b)	Describe solid ground curing process. State its advantages and disadvantages.	**07**
		OR	
Q.5	**(a)**	What are the barriers to CIM? How to overcome them?	**07**
	(b)	Explain the Ballistic particle manufacturing with neat sketch.	**07**

****