Seat No.:	Enrolment No
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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## M. E. - SEMESTER - I • EXAMINATION - WINTER 2012

	•	et code: 712804N Date: 10-01-2013	
	-	et Name: Rapid Prototype and Tooling (Inter Disciplinary Elective - I) 02.30 pm — 05.00 pm Total Marks: 70	
		ctions:	
	1	<ol> <li>Attempt all questions.</li> <li>Make suitable assumptions wherever necessary.</li> <li>Figures to the right indicate full marks.</li> </ol>	
Q.1	(a)	Define and discuss product development cycle and compare product development cycle with product life cycle.	07
	<b>(b)</b>	Discuss influence of innovation on product development. Suggest ways and means to incorporate customer needs?	07
Q.2	(a)	Explain the role of virtual prototyping and rapid prototyping in product development.	07
	<b>(b)</b>	Explain the term prototyping and its impact on cost quality and time.  OR	07
	(a)	List and explain then factors influencing product prototyping.	07
Q.3	(a)	Explain briefly physical prototype design procedure.	07
	<b>(b)</b>	Explain liquid based RP process.  OR	07
Q.3	(a) (b)	Explain use of models for product and prototype design and evaluation. Explain Steriolithography and states its limitation	07 07
Q.4	(a)	Explain powder based RP process (laser sintering, 3D injection and direct laser deposition process	07
	<b>(b)</b>	Explain fully FDM process.  OR	07
Q.4	(a) (b)	Discuss what is meant by ballistic particle manufacturing. Explain Factors influencing rapid tooling.	07 07
Q.5	(a) (b)	explain virtual reality and virtual prototyping. explain modeling of physical system(include physical example. OR	07 07
Q.5	(a) (b)	Discuss role of FEA in RP process optimization Discuss non contact type reverse engineering methods.	07 07

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