Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Sem. – IInd - Examination – June/July- 2011

Subject code: 1720809

Subject Name: Product Design and Development

Date:29/06/2011 **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)**	Write down the characteristics of a successful product development.	**07**
	(b)	What is generic product development process? Briefly explain the phases of generic product development process.	**07**
Q.2	**(a)**	Explain concept selection of the activities of the overall concept development phase.	**07**
	(b)	Write different methods of material selection and explain the method of value analysis.	**07**
		OR	
	(b)	Write the importance and method of interpretation of Ashby material selection chart.	**07**
Q.3	**(a)**	What are the criteria for selection of a process for a given product? Explain briefly.	**07**
	(b)	Write and explain DFA guidelines with example.	**07**
		OR	
Q.3	**(a)**	Discuss design for assembly.	**07**
	(b)	What is robust design? Explain the process of robust design.	**07**
Q.4	**(a)**	What are the different methods of cost comparison? Explain the method of annual cost analysis.	**07**
	(b)	Write the criteria on which decision is made to invest in a project. Explain the method of discounted cash flow.	**07**
		OR	
Q.4	**(a)**	What are the various categories of cost involved with any product? Explain briefly industrial engineering approach.	**07**
	(b)	Write depreciation calculation methods and discuss any one.	**07**
Q.5	**(a)**	Discuss the advantages, accuracy and economic considerations for rapid prototyping.	**07**
	(b)	Explain with neat sketch stereo lithography process for rapid prototyping in all aspect.	**07**
		OR	
Q.5	**(a)**	What is the importance of prototyping? Explain with the help of sketch selective laser sintering process.	**07**
	(b)	Explain the factors concerning to rapid prototyping.	**07**

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