Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –IIst SEMESTER–EXAMINATION – JULY- 2012

Subject code: 1720809 **Date: 12/07/2012**

Subject Name: Product Design and Development

Time: 10:30 am – 13:00 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)**	Explain generic product development process with all its six phases.	**07**
	(b)	Explain "Establish Target Specification" phase of product design and development.	**07**
Q.2	**(a)**	Explain product life cycle and technology development cycle with necessary plots.	**07**
	(b)	What are Ashby's charts? How are they interpreted in context of product design?	**07**
		OR	
	(b)	How will you select material for connecting rod in context of product design?	**07**
Q.3	**(a)**	What are the advantages of applying DFMA during product design?	**07**
	(b)	Discuss quality function deployment (QFD) with case study.	**07**
		OR	
Q.3	**(a)**	Justify "Concurrent engineering is a good tool for QFD."	**07**
	(b)	Discuss in brief in different fatigue design criteria for a product design.	**07**
Q.4	**(a)**	Explain Top-Down and Bottom-Up approaches of assembly modeling.	**07**
	(b)	Explain industrial engineering approach for cost estimation.	**07**
		OR	
Q.4	**(a)**	Explain Net Present Value (NPV) of product with example.	**07**
	(b)	Discuss on Sensitivity Analysis.	**07**
Q.5	**(a)**	What is prototyping? Explain its importance in context of product design.	**07**
	(b)	Explain selective laser sintering prototype process.	**07**
		OR	
Q.5	**(a)**	What is prototype? How will you select prototype material?	**07**
	(b)	Explain fused deposition modeling prototype process.	**07**

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