Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 1725003 **Date: 03-06-2013**

Subject Name: Product Development and Innovation

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)**	List the various phases in product development process and explain all in detail.	**07**
	(b)	Define Specifications and explain the process of establishing target specifications.	**07**
Q.2	**(a)**	Explain the different challenges in Product development process.	**07**
	(b)	List the steps for identifying customerôs needs and explain how the raw data are gathered from the customer	**07**
		OR	
	(b)	Discuss briefly the process of product plan development.	**07**
Q.3	**(a)**	What is concept generation process ? Explain it with all five steps.	**07**
	(b)	Write down the industrial design process in detail.	**07**
		OR	
Q.3	**(a)**	Discuss the Screening and Scoring stage in concept selection process.	**07**
	(b)	For identifying customerôs needs how do you organize the needs in to hierarchy.	**07**
Q.4	**(a)**	What do you mean by TRIZ ? Discuss its concept briefly also give its applications in product design and development.	**07**
	(b)	Explain the concept of ñQFDò with the example of ball point pen with atleast 5 customerôs requirements to convert into final specifications.	**07**
		OR	
Q.4	**(a)**	What is intellectual property? Explain the different forms intellectual property	**07**
	(b)	Discuss the phenomenon of Functional decomposition and product decomposition in concept generation process.	**07**
Q.5	**(a)**	What is inventive problems. Also explain the five levels of solution.	**07**
	(b)	Explain the different types of product development project and give the reasons for poor development planning.	**07**
		OR	
Q.5	**(a)**	Discuss the patent search process briefly and the give the details contained in patent by giving the patent sample.	**07**
	(b)	List and explain the different steps involved in concepts testing procedure.	**07**

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