

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- VII<sup>th</sup> SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 171904****Date: 28/05/2012****Subject Name: Product Design and Value Engineering****Time: 02:30 pm – 05:00 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) What is Engineering Design? Explain the steps of design process. **07**  
(b) Distinguish Product Development Cycle and Product Life Cycle. **07**

**Q.2** (a) What is Value? Explain the reasons for poor value. **07**  
(b) Explain the importance of Leadership, Team work and Communication in Value Engineering. **07**

**OR**

(b) Explain the guidelines for Design for Manufacture (DFM). **07**

**Q.3** (a) Explain Generic Product Development Process in detail. **07**  
(b) What is product? Explain competitive strategy for new product. **07**

**OR**

**Q.3** (a) Differentiate target specification and final specification of product. **07**  
(b) What is creativity? Explain the method of Brain storming and synectics for Idea generation. **07**

**Q.4** (a) Explain the channels of gathering information from customers for a new product development. **07**  
(b) What is rigidity? Explain the methods to improve the rigidity of mechanical structure. **07**

**OR**

**Q.4** (a) Explain important properties of ceramic materials considered in design of ceramic components. **07**  
(b) Explain the importance of thermal properties of plastics in mechanical design. **07**

**Q.5** (a) Discuss considerations of Human Aspects in Value Engineering **07**  
(b) What is cost? Explain the procedure for Calculating the Life Cycle Cost. **07**

**OR**

**Q.5** (a) Explain Function Analysis System Technique (FAST) in detail. **07**  
(b) What is Life Cycle Cost? Explain its limitations. **07**

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