

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018

Subject Code: 2181913

Date: 30/04/2018

Subject Name: Product Design and Value Engineering(Department Elective II)

Time: 10:30 AM to 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.

		MARKS
Q.1	(a) Define: Value, Value analysis and Value engineering.	03
	(b) What are the challenges of product development?	04
	(c) Explain the characteristics of successful product development.	07
Q.2	(a) Discuss duration and cost of product development.	03
	(b) Explain the general guidelines for product design of maintainability.	04
	(c) Discuss the engineering ethics and issues of society related to design of products.	07
OR		
	(c) Explain in detail the general guidelines of design for manufacturing and assembly.	07
Q.3	(a) Define: (i) Value standard (ii) QFD (iii) Rapid Prototyping	03
	(b) What are specifications? Explain setting the final specification in briefly.	04
	(c) What are the tools and charts used for product analysis? Explain any one in detail.	07
OR		
Q.3	(a) State the various factors responsible for product design and development.	03
	(b) Explain: Design for safety.	04
	(c) Explain various methods to identify the customer needs?	07
Q.4	(a) List the various considerations for design of sound and vibration in a machine parts.	03
	(b) What are the evaluation methods for material selection? Explain briefly.	04
	(c) State and explain the various techniques of concept development.	07
OR		
Q.4	(a) What do you mean by voice of customer? Define: Customer need model.	03
	(b) Discuss considerations of Human Aspects in Value Engineering.	04
	(c) Describe the various steps involved in product planning process.	07
Q.5	(a) Explain the terms: (i) Rigidity (ii) Stiffness (iii) Value circle.	03
	(b) What is product life cycle? Explain different phase of product life cycle.	04
	(c) Classify the value engineering function. Explain the approach and evaluation of value engineering function.	07
OR		
Q.5	(a) What is mean by value analysis? What are the various steps of value analysis for a job plan?	03
	(b) Explain the importance of Leadership, Team work and Communication in Value Engineering.	04
	(c) Explain the various rules to be followed while FAST diagramming.	07
