

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3172511****Date:08-12-2023****Subject Name: Product Design and value Engineering****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Distinguish between Engineering design and Industrial Design.	03
	(b) What are the challenges for Product Design and Development?	04
	(c) What is Product life cycle? Explain in brief.	07
Q.2	(a) What is Product Function? How function analysis is carried out.	03
	(b) What are the different criteria made for design for safety of product?	04
	(c) Discuss: Design for Manufacturing and Design for Assembly.	07
	OR	
	(c) What is Design for Assembly and Disassembly? Explain in brief.	07
Q.3	(a) Discuss: Generic Product development process.	03
	(b) Explain: (i) Bill of Material (ii) Gozinto chart	04
	(c) Explain with suitable example: Concept development process.	07
	OR	
Q.3	(a) Discuss: Product process Planning	03
	(b) What are the considerations for material selection in Product Development?	04
	(c) What is Product Process Planning? Explain in brief.	07
Q.4	(a) What is need? How needs are prioritizing?	03
	(b) What are the different methods for collecting customer needs? Explain in brief.	04
	(c) What is Additive Manufacturing? How it is helpful in Product Development?	07
	OR	
Q.4	(a) Explain how voice of customer useful in Product design and development.	03
	(b) Explain Affinity diagram	04
	(c) What are Virtual Reality and Virtual Prototyping? How it is useful in Product development?	07
Q.5	(a) What is cost? How cost is evaluated?	03
	(b) What is value? Explain reasons for poor value.	04
	(c) Value Engineering is tool for productivity. Justify	07
	OR	
Q.5	(a) What is worth? How it is evaluated?	03
	(b) Explain: (i) Economic value (ii) Political Value (iii) Social Value (iv) Aesthetic Value	04
	(c) Discuss steps of writing functions in value engineering with suitable example.	07
