U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July / August 2024 Semester End Main Examinations

Programme: B.E. **Semester: VI**
Branch: Mechanical Engineering **Duration: 3 hrs.**
Course Code: 20ME6DEPDM **Max Marks: 100**
Course: Product Design and Manufacturing

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

				CO	PO	Marks
			UNIT - I			
1	a)		Explain the relationship between cost and duration required to develop a new product, taking any three products. Also state the challenges of product development.	CO1	PO1	**10**
	b)		Explain the steps in product planning process?	CO1	PO1	**10**
			UNIT - II			
2	a)		Discuss the process of identifying customer needs.	CO2	PO2	**10**
	b)		Discuss the process of gathering raw data from customers.	CO2	PO2	**10**
			OR			
3	a)		Explain the process of establishing the target specifications involved in product design and development.	CO3	PO2	**10**
	b)		Explain the steps used in concept generation process used for designing a product	CO3	PO2	**10**
			UNIT - III			
4	a)		Explain the potential benefits of a structured concept selection method.	CO3	PO2	**10**
	b)		List and explain seven-step method for testing product concepts	CO3	PO2	**10**
			OR			
5	a)		What is product architecture? Explain the different types of modularity..	CO3,4	PO2	**10**
	b)		Briefly explain the issues of relevance in deciding the product architecture	CO3,4	PO2	**10**
			UNIT - IV			
6	a)		How important is Industrial design to a product? Discuss	CO5	PO2	**10**
	b)		Explain briefly the design for manufacturing process	CO5	PO2	**10**

			UNIT - V			
	7	a)	Explain Control Factors and method to formulate an objective function.	*CO6*	*PO2*	**10**
		b)	Explain seven step Robust Design Process.	*CO6*	*PO2*	**10**

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