U.S.N.										

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

Autonomous Institute Affiliated to VTU

July 2023 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 **Date: 17.07.2023**

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.

			UNIT - I	CO	PO	Marks
1	a)		What are the challenges in developing a product development?	*CO1*	*PO1*	**10**
	b)		Explain with a sketch, product development team for a generic product.	*CO1*	*PO1*	**10**
			UNIT - II			
2	a)		Explain with a flow chart the customer-needs activity in relation to other concept development activities.	*CO2*	*PO2*	**10**
	b)		List and explain the Art of Eliciting Customer Needs Data	*CO2*	*PO2*	**10**
			OR			
3	a)		What is the process of establishing the target specifications?	*CO3*	*PO2*	**10**
	b)		Explain with flow chart five step concept generation method	*CO3*	*PO2*	**10**
			UNIT - III			
4	a)		Justify concept selection is an integral part of the product development process	*CO3,4*	*PO2*	**10**
	b)		List and explain seven-step method for testing product concepts	*CO3,4*	*PO2*	**10**
			OR			
5	a)		What is Product Architecture?	*CO3,4*	*PO2*	**04**
	b)		Explain different types of modularity	*CO3,4*	*PO2*	**06**
	c)		Write short notes on[any two= 5x2=10] 1: Create a schematic of the product 2: Cluster the elements of the schematic 3: Create a rough geometric layout	*CO3,4*	*PO2*	**10**
			UNIT - IV			
6	a)		Explain the process involved in industrial design.	*CO5*	*PO2*	**10**

		b)	Explain with a flow chart DFM 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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