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

Autonomous Institute Affiliated to VTU

June / July 2025 Semester End Main Examinations

Programme: B.E.

Semester: V

Branch: Industrial Engineering & Management

Duration: 3 hrs.

Course Code: 23IM5PEPDD / 22IM5PEPDD

Max Marks: 100

Course: Product Design and Development

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	<i>CO</i>	<i>PO</i>	Marks
	1	a)	What are the 5 Challenges faced by a designer during Product Development	<i>CO2</i>	<i>PO1</i>	10
		b)	Explain the different activities included in the concept development process	<i>CO2</i>	<i>PO1</i>	10
			OR			
	2	a)	Explain briefly the different sources for identification of opportunities for a new product	<i>CO2</i>	<i>PO1</i>	10
		b)	Describe clearly how a firm's competitive strategies are useful in evaluating and prioritizing opportunities for a new product	<i>CO2</i>	<i>PO1</i>	10
			UNIT - II			
	3	a)	Explain the steps involved in identifying the customers' needs	<i>CO2</i>	<i>PO1</i>	08
		b)	Establish the target specification and final specification with suitable example	<i>CO2</i>	<i>PO1</i>	12
			OR			
	4	a)	What is searching internally in the activity of concept generation? Name the four guidelines that are useful for improving search internally	<i>CO2</i>	<i>PO1</i>	08
		b)	Explain the steps involved in the concept generation process	<i>CO2</i>	<i>PO1</i>	12
			UNIT - III			
	5	a)	Explain the steps involved in Concept screening	<i>CO2</i>	<i>PO1</i>	10
		b)	Write a note on choosing survey format	<i>CO2</i>	<i>PO1</i>	10

			OR			
	6	a)	Explain five different methods of communicating concepts	CO3	PO2	10
		b)	Write a note on establishing architecture. Explain the steps involved in establishing product architecture	CO3	PO2	10
			UNIT - IV			
	7	a)	Explain the phases in Industrial Design, using mobile phone as an example	CO3	PO2	10
		b)	What are the various costs involved in estimating the manufacturing cost of a product	CO2	PO1	10
			OR			
	8	a)	Briefly explain the strategies used for minimizing the costs of components	CO2	PO1	10
		b)	What are the steps to be followed while planning a prototype during a product development effort	CO2	PO1	10
			UNIT - V			
	9	a)	Explain in brief the steps involved in preparing the disclosure	CO2	PO1	10
		b)	With a neat sketch briefly explaining the taxonomy of types of Intellectual property relevant to product design and development	CO2	PO1	10
			OR			
	10	a)	With an example explain how to write the description of invention	CO2	PO1	10
		b)	Briefly explain the three key reasons for studying prior inventions	CO2	PO1	10
