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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.

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

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.

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