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

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E.

Semester: VII

Branch: Industrial Engineering and Management

Duration: 3 hrs.

Course Code: 21IM7DEIDE

Max Marks: 100

Course: Industrial Design & Ergonomics

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		
			<i>CO</i>	<i>PO</i>	Marks
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.	1	a)	Distinguish between industrial design and engineering design. Why are these two design approaches considered as complementary areas for product designers and developers? Give any two examples to highlight the work of engineering designers and industrial designers. Use the sketches to clearly identify the area of work.	<i>CO1</i>	-
		b)	With the help of a suitable example, describe the three requirements of a product design	<i>CO1</i>	-
UNIT - II					
	2	a)	Describe the Design, Characteristics and Classifications of Man-Machine Systems	<i>CO2</i>	<i>PO1</i>
		b)	What are the factors for selection of Controlling Devices?	<i>CO2</i>	<i>PO1</i>
UNIT - III					
	3	a)	Define anthropometric data. What are the major phases of the use of anthropometric data for the design of products? Give the examples to highlight the benefits of the anthropometric data in developing or designing the products.	<i>CO3</i>	<i>PO2</i> <i>PO6</i>
		b)	Brief about the relationship between ergonomics and product design by mentioning a suitable example?	<i>CO3</i>	<i>PO2</i> <i>PO6</i>
OR					
	4	a)	Explain the concept of Product Function on purpose in terms of product Language.	<i>CO2</i>	<i>PO1</i>
		b)	What are the common standards adopted in a house style or corporate style? List out the requirements for a sound house style.	<i>CO3</i>	<i>PO2</i> <i>PO6</i>

UNIT - IV					
5	a)	Explain Gestalt's Law of Psychology. What are the four main principles related to the psychology of seeing as emphasized in the Gestalts theory of visual perception? Explain.	CO3 PO6	PO2	10
	b)	Write briefly on color psychology. Give the preferred color for engineering equipment.	CO2	PO1	10
UNIT - V					
6	a)	What are the commonly adopted standards in housing or corporate design, and what are the key considerations to take into account when designing a residential style?	CO3 PO6	PO2	10
	b)	Consider you are working in helmet manufacturing company called 'studds', where you are in the design department. As traffic fines are increasing, people are now making up their mind to wear helmets. One more thing to note is that, the summer season is nearing. Explain the steps that you take in designing the product so that the company achieves monopoly in the helmet market.	CO3 PO6	PO2	10
OR					
7	a)	Explain briefly the steps involved in the design process.	CO4	PO3	10
	b)	In General, for any product the importance is in the order of function, aesthetics and ergonomics. Justify this statement by explaining the relative importance of Industrial Design in practice.	CO4	PO3	10
