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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.

Branch: Industrial Engineering and Management

Course Code: 21IM7DEIDE

Course: Industrial Design & Ergonomics

Semester: VII

Duration: 3 hrs.

Max Marks: 100

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

<b>Important Note:</b> Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.			<b>UNIT - I</b>	<b>CO</b>	<b>PO</b>	<b>Marks</b>
	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.	CO1	-	10
		b)	With the help of a suitable example, describe the three requirements of a product design	CO1	-	10
			<b>UNIT - II</b>			
	2	a)	Describe the Design, Characteristics and Classifications of Man-Machine Systems	CO2	PO1	10
		b)	What are the factors for selection of Controlling Devices?	CO2	PO1	10
			<b>UNIT - III</b>			
	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.	CO3	PO2 PO6	10
		b)	Brief about the relationship between ergonomics and product design by mentioning a suitable example?	CO3	PO2 PO6	10
			<b>OR</b>			
	4	a)	Explain the concept of Product Function on purpose in terms of product Language.	CO2	PO1	10
		b)	What are the common standards adopted in a house style or corporate style? List out the requirements for a sound house style.	CO3	PO2 PO6	10

		<b>UNIT - IV</b>			
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	PO2 PO6	<b>10</b>
	b)	Write briefly on color psychology. Give the preferred color for engineering equipment.	CO2	PO1	<b>10</b>
		<b>UNIT - V</b>			
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	PO2 PO6	<b>10</b>
	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	PO2 PO6	<b>10</b>
		<b>OR</b>			
7	a)	Explain briefly the steps involved in the design process.	CO4	PO3	<b>10</b>
	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	<b>10</b>

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