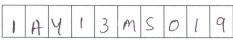
(10 Marks) (10 Marks)





Eighth Semester B.E. Degree Examination, Jan./Feb. 2021 Product Design and Manufacture

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

		PART - A	
1	a.	What are the essential factors of product design?	(10 Marks)
	b.	Explain the seven phases of design.	(10 Marks)
2	a.	How to integrate basic form elements?	(10 Marks)
	b.	What are "Renard Series"? Explain the uses with an example.	(10 Marks)
3	a.	Explain the four common types of design strategies outlined by chow.	(10 Marks)
	b.	How to analyze the stresses during the bending of curved beam?	(10 Marks)
4	a.	With a neat sketch, explain plastic bush bearings.	(10 Marks)
	b.	Explain the design recommendations for rubber parts.	(10 Marks)
		PART – B	
5	a.	Explain "Lagrange Multipliers" role m design optimization.	(10 Marks)
	b.	A strut is subjected to tensile force of p 20kN. The value of $\sigma_1 = 100 \text{N/mm}^2$, If cost is Rs.30/kg and the metal cutting cost per surface is Rs.10/mm ² , calculate dimensions for cost minimization. The strut length is 800mm. Assume density $P = 8000 \text{ kg/m}^3$.	e the section
6	a.	List and explain ten aspects of manufacturing operations that will lower the cos	
	b.	Explain the methods of increasing profits.	(10 Marks) (10 Marks)
	0.	Explain the methods of increasing profits.	(10 Marks)
7	a.	What is anthropometry? How to use man as occupant of space?	(10 Marks)
	b.	With a neat sketch, explain assemblies work place layout.	(10 Marks)

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a. Explain the steps involved in value analysis of job plan.

b. Explain six creative techniques.

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.