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

Autonomous Institute Affiliated to VTU

August 2023 Semester End Make-Up Examinations

Programme: B.E.

Semester: VIII

Branch: Aerospace Engineering

Duration: 3 hrs.

Course Code: 21AE8HSERG

Max Marks: 100

Course: ERGONOMICS

Date: 08.08.2023

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 is Ergonomics? Summarize the objectives of Ergonomics in designing work systems.		<i>CO 1</i>	<i>PO 1</i>	10
	b)	With suitable illustration, delineate the components that are under the scope of Ergonomic studies.		<i>CO 2</i>	<i>PO 1</i>	10
			UNIT - II			
2	a)	“Certain design factors can be considered as guidelines by engineers in designing the equipment and working areas”. Justify		<i>CO 3</i>	<i>PO 1</i>	10
	b)	Enumerate the general guidelines in designing the display units ergonomically.		<i>CO 2</i>	<i>PO 1</i>	5
	c)	What do you understand by ergonomic design of products?		<i>CO 2</i>	<i>PO 1</i>	5
			OR			
3	a)	Enumerate the general guidelines for ergonomic designing of control devices.		<i>CO 1</i>	<i>PO 1</i>	10
	b)	Elaborate on the factors to be considered for selecting control devices with a consideration of safety and operational requirements.		<i>CO 1</i>	<i>PO 1</i>	10
			UNIT - III			
4	a)	Illustrate a simple man machine system. Describe the components of the same.		<i>CO 3</i>	<i>PO 1</i>	10
	b)	Review the functions of Man as an element of Man-Machine system.		<i>CO 3</i>	<i>PO 1</i>	10
			OR			
5	a)	Categorize and describe the features of the man machine systems into any two groups based on the crucial attributes.		<i>CO 3</i>	<i>PO 1</i>	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.

	b)	What do you understand by the term System Reliability? What is the role of system reliability in Man-Machine relationship?	CO 3	PO 1	10
		UNIT – IV			
6	a)	Classify the work loads into four categories. Also provide appropriate description on each category.	CO 2	PO 1	10
	b)	Explain the muscular fatigue mechanism. How does fatigue affect work efficiency?	CO 3	PO 1	10
		UNIT – V			
7	a)	What are anthropometric measurements? Review the three fundamental kinds of anthropometric measurements in work station design.	CO 4	PO 1	10
	b)	Consider an Aircraft manufacturing unit and identify the application areas of Ergonomics.	CO 2	PO 1	10

B.M.E.