

U.S.N.								
--------	--	--	--	--	--	--	--	--

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

Autonomous Institute Affiliated to VTU

May / June 2025 Semester End Main Examinations

Programme: B.E.

Branch: Aerospace Engineering

Course Code: 22AS8HSERG

Course: ERGONOMICS

Semester: VIII

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.

		UNIT - I	CO	PO	Marks
1	a)	Describe in detail the repetitive motion injuries and upper body risk factors.	CO 1	PO 1	10
	b)	Define Ergonomics. Elaborate the various components of ergonomics.	CO 1	PO 1	10
OR					
2	a)	Describe in detail the helpful tips for working in front of computer?	CO 1	PO 1	10
	b)	What is the main cause of lower back pain and describe in detail the lower body risk factors?	CO 1	PO 1	10
UNIT - II					
3	a)	Discuss the design aspects of the following display units with reference to the ergonomics: (i) Analogue type display instruments (ii) Digital type display instruments	CO 1	PO 1	10
	b)	What are the objectives of ergonomics and also mention various approaches adopted by ergonomics?	CO 1	PO 2	10
OR					
4	a)	Discuss in detail the relationship between display and control instruments.	CO 1	PO 2	10
	b)	Describe different types of display units that often are associated with the products. Discuss the design factors that are to be considered while designing these display units.	CO 1	PO 1	10
UNIT - III					
5	a)	Describe in details the various criteria to evaluate man-machine system.	CO 2	PO 2	10
	b)	Discuss the history and background of man-machine system.	CO 2	PO 1	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)	What is role of machine as a component in man-machine system and likewise what is the role of man as a component in man-machine system.	CO 2	PO 1	10
	b)	What is man-machine system and describe various characteristics of it in detail.	CO 2	PO 1	10
		UNIT - IV			
7	a)	Distinguish between the following with reference to energy expenditures. (i) Heavy work and light work. (ii) Repetitive and non-repetitive work.	CO 2	PO 1	10
	b)	What are some of the human needs that to be considered in ergonomics of workstation?	CO 2	PO 1	10
		OR			
8	a)	What is fatigue? Brief out different types of fatigues.	CO 2	PO 1	10
	b)	Explain in detail the various environmental factors that effect the ergonomic design of work place.	CO 2	PO 1	10
		UNIT - V			
9	a)	Describe some of the key aspects of ergonomics in aviation industry.	CO 3	PO 1	10
	b)	What are the advances in aviation safety?	CO 3	PO 1	10
		OR			
10	a)	Describe the design of input/output devices in aviation sector.	CO 3	PO 1	10
	b)	Describe in detail how crew resources are managed in aviation sector.	CO 3	PO 1	10
