

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Third Semester

Product Design and Development

PD4006- Human Factors Engineering in Product Design

Regulations - 2021

Duration : 3 Hrs

**Maximum : 100
Marks**

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	What is the basic concept of anthropometry?	L1	1	2
2.	List the applications of anthropometry in design.	L2	1	2
3.	What are the conditions should an ergonomically compliant office satisfy?	L1	2	2
4.	Define stress and fatigue.	L2	2	2
5.	Why is working memory important in display design?	L2	3	2
6.	List the advantages and disadvantages of Human-Machine Interface.	L1	3	2
7.	List the factors influencing the ability to work in the heat.	L1	4	2
8.	What strategy of noise level protection is usually the most cost effective when it is physically feasible?	L1	4	2
9.	Mention some basic limitations in human information processing.	L2	5	2
10.	Why is working memory important in display design?	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16= 80)

Q.No	Questions	BLT	CO	Marks
11. a	Write a report that explains to a design engineer why anthropometric data should be used in the design of human-machine systems. Give examples from everyday life to support your arguments.	L4	1	16
	Or			
b	Explain the anthropometric variables you would need to estimate to help the company choose a chair.	L4	1	16
12. a	Elaborate on basic anthropometric criteria and measures? Give some associated design objectives.	L3	2	16
	Or			
b i	Identify the importance in designing seating to allow operators to	L3	2	8

change their posture.

	ii	Compare automotive seats chairs at work and why should they differ?	L2	2	8
13.	a	What is the recommended height of the top of a computer visual display and how would you determine it?	L2	3	16
		Or			
	b i	What is the principal difference and advantage of the Klockenberg-Kromer or Apple keyboards over the regular typewriter or computer keyboard?	L2	3	8
	ii	What is your opinion of the comfort keyboard relative to the Apple and regular keyboard.	L2	3	8
14.	a	Explain how the HIS is calculated. What are the implications of an HSI of 100? What are the Pros and cons of using the HSI?	L3	4	16
		Or			
	b	Interpret what are certain strategies improve visual activity more than increased illumination? Explain and give examples.	L3	4	16
15.	a	Explain in detail about the Wickens General model of human information processing.	L3	5	16
		Or			
	b i	Explain the Psychological aspects of human error.	L3	5	8
	ii	Classify and explain the errors according to the level of human information processing.	L3	5	8