



Roll No.

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, April/May 2025

Industrial Engineering

4th Semester

IE23401 APPLIED ERGONOMICS

(Regulation 2023)

Time:3 hrs

Max. Marks: 100

CO1	Illustrate the knowledge on basic of human factor engineering and Engineering science.
CO2	Apply the skills associated with ergonomic measurement methods and analytical techniques to workplace ergonomic problems.
CO3	Conduct an ergonomic analysis and ergonomic recommendations for modern work environment problems.
CO4	Implement the occupational health and safety rules to improve the work place.
CO5	Analyze the proper assessment tools in ergonomics evaluation in an Industry

BL - Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A (10x2=20Marks)

(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	Why Ergonomics is an interdisciplinary in nature	2	1	L2
2	Write the goals of Ergonomics	2	1	L2
3	Discuss the main Significant of hand tool design	2	2	L2
4	List the Physical factors in Visual Display Terminals (VDT)	2	2	L2
5	Differentiate the aerobic and anaerobic process	2	3	L2
6	State the Maximum aerobic power (MAP)	2	3	L2
7	write the impact of thermal stress in an industry	2	4	L2
8	What are the factors that causes heat stress	2	4	L1
9	Write the function of Hick's law	2	5	L2
10	List few Ergonomic assessment tools	2	5	L2

PART- B (5x 13=65Marks)

Q. No.	Questions	Marks	CO	BL
11 (a)	Explain the Contribution of modern ergonomics in systems design	13	1	L4
	OR			
11 (b)	Elaborate the Basic interactions in a work system and their evaluation	13	1	L4
12 (a)	Describe the factors for Work Place design for Standing posture	13	2	L3
	OR			
12 (b)	Explain the significant effects on visual display design in work station design	13	2	L3
13 (a)	Express the Physical work capacity relate with basal metabolic rate (BMR)	13	3	L3
	OR			
13 (b)	Explain the importance of physical fitness test	13	3	L3
14 (a)	Briefly explain how thermal stress is affecting the productivity.	13	4	L3

OR					
14 (b)	Explain the factors that influencing the productivity by considering environmental issues	13	4	L3	
15 (a)	Compute the importance of the ergonomic assessment tools like Rapid Upper Limb Assessment (RULA), Rapid Entire Body Assessment (REBA)	13	5	L4	
OR					
15 (b)	Compare Rapid Office Strain Assessment (ROSA) with Risk Assessment of Pushing and Pulling (RAPP)	13	5	L3	

PART- C (1x 15=15Marks)
(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	Describe and draw the link of Human Machine Interface (HMI) systems and analysis the HMI requires knowledge of biomechanics, cognitive psychology, and systems design	15	5	L5

