PVP 20

Code: 20ME2601B

III B.Tech - II Semester – Regular / Supplementary Examinations
APRIL 2025

HUMAN FACTORS IN ENGINEERING

(Common to All Branches)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
		UNIT-I			
1	a)	Summarize the concept of Human Factors Engineering with examples.	L2	CO1	7 M
	b)	What is the design philosophy of human factors? Summarize the principles of human factors engineering design.	L2	CO1	7 M
		OR			
2	a)	What do you mean by muscular energy? Explain the energy sources for muscles and human performance.	L2	CO1	7 M
	b)	Explain heat stress and the role of oxygen physical exertion.	L2	CO1	7 M

		UNIT-II			
3	a)	What is Anthropometry? Explain the use of human anthropometry in workplace layout.	L2	CO2	7 M
	b)	Summarize the Anthropometric design principles.	L2	CO2	7 M
		OR			
4	a)	How does automation create a more ergonomic workplace? Explain.	L3	CO2	7 M
	b)	What is the function of computerized database and summarize its need.	L2	CO2	7 M
		UNIT-III			
5	a)	Explain about improvement of human work place through Shapes and sizes of various controls and displays.	L2	CO3	7 M
	b)	What are the criteria involved in hand tool design? List the characteristics of hand tools.	L2	CO3	7 M
		OR			
6	a)	What are the different types of seating arrangements in office and what are the benefits of seating arrangement in office?	L2	CO3	7 M
	b)	What is a rest period at work? Explain its importance.	L2	CO3	7 M
		UNIT-IV			
7	a)	How does colors and lighting affect a person productivity on the job?	L2	CO4	7 M

	b)	Explain the words Color consistency and Color terms with respect to work place.	L3	CO4	7 M
		OR			
8	a)	Why is temperature important in the workplace? And how the temperature affects work?	L2	CO4	7 M
	b)	What is the Ageing eye condition? Explain how do you treat ageing eyes.	L2	CO4	7 M
		UNIT-V			
9	a)	What is the measurement of sound and how do you assess noise in the workplace?	L2	CO4	7 M
	b)	What does a hearing protector do? List any four types of hearing protectors.	L2	CO4	7 M
		OR			
10	a)	Explain the main effects of noise pollution.	L3	CO4	7 M
	b)	What is a vibrating source? List the major sources of vibration.	L2	CO4	7 M