

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023****Subject Code:3151509****Date:20-12-2023****Subject Name:Work System design and Ergonomics****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What do you understand by the term Work study?	03
	(b) Explain the concept of productivity.	04
	(c) Discuss economic and technical considerations as well as human reaction factors while method study investigation.	07
Q.2	(a) What are the causes of low productivity?	03
	(b) What is ergonomics?	04
	(c) Discuss the principles of motion economy.	07
OR		
	(c) Discuss the concept of standard time. Explain the steps involved in arriving at standard time.	07
Q.3	(a) Enlist various recording techniques used in method study.	03
	(b) Explain Chrono-Cycle Graph with neat sketch.	04
	(c) Explain different Allowances in time study.	07
OR		
Q.3	(a) Discuss the effects of working condition on productivity.	03
	(b) What is Micro motion study?	04
	(c) Write a note on Therblig: Types, symbols and applications.	07
Q.4	(a) Explain SIMO chart.	03
	(b) What is Performance Rating?	04
	(c) Why Memo motion study is gaining popularity? What are its applications in the industries?	07
OR		
Q.4	(a) Explain string diagram with suitable example.	03
	(b) Explain the concept of Work measurement.	04
	(c) Explain MOST and its types.	07
Q.5	(a) Explain concept of Ergonomics.	03
	(b) Enlist different incentive plans and explain any one.	04
	(c) Write a note on Human factor engineering.	07
OR		
Q.5	(a) Explain the use of human anthropometry in workplace layout.	03
	(b) Explain characteristics of man-machine system.	04
	(c) Explain use of anthropometric data in designing of interior of passenger car.	07
