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GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3151509   Date:29/01/2021

Subject Name:Work System design and Ergonomics

Time:10:30 AM TO 12:30 PM   Total Marks: 56

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	(a)	What do you understand by 'Work System Design'?	03
	(b)	Discuss why work study is a direct means of raising productivity.	04
	(c)	Discuss economic considerations, technical considerations and human reaction factors while method study investigation.	07
Q.2	(a)	Define work measurement system and explain its scope in industry.	03
	(b)	What are the objectives of work measurement in an industry?	04
	(c)	What are the main causes of lower productivity in any organization? How one can overcome this problem?	07
Q.3	(a)	What do mean by method study?	03
	(b)	Give objectives and limitations of operation process chart.	04
	(c)	Explain various kinds of productivity measurement.	07
Q.4	(a)	What is the purpose of man-machine chart?	03
	(b)	Discuss how use of appropriate technology and flexible production can improve the productivity.	04
	(c)	Discuss the principles of motion economy.	07
Q.5	(a)	What is meant by 'Rating'? Who is rated? What for?	03
	(b)	Briefly explain different types of allowances..	04
	(c)	Discuss the concept of standard time. Explain clearly the steps involved in arriving at standard time.	07
Q.6	(a)	Discuss importance of maintaining "Time standards".	03
	(b)	Write brief note on: Predetermined Motion Time Systems.	04
	(c)	Explain MOST and its types in brief.	07
Q.7	(a)	What is the role of ergonomics in industrial engineering?	03
	(b)	Discuss the various factors which are considered for ergonomic design of controls.	04
	(c)	Write note on: Therblig : Types, symbols and applications.	07
Q.8	(a)	What is Anthropometry?	03
	(b)	Explain the use of human anthropometry in workplace layout.	04
	(c)	Explain use of anthropometric data in designing of interior of Passenger car.	07

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