

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019****Subject Code: 2171502****Date: 26/11/2019****Subject Name: Work System Design****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.

		MARKS
Q.1	(a) What do you mean by work system design?	03
	(b) State the application of work study.	04
	(c) Discuss the principles of motion economy.	07
Q.2	(a) Define 'Work Study'.	03
	(b) Discuss why work study is a direct means of raising productivity.	04
	(c) "Application of work study is 10% technical and 90% psychological" – Explain.	07
	OR	
	(c) How would ergonomics help to analyze man – machine system ? Can this study improve the work – station layout ? How ? Discuss.	07
Q.3	(a) What is method study?	03
	(b) Discuss the effects of working condition on productivity.	04
	(c) Who was the originator of process charts ? Give objectives and limitations of operation process chart and prepare the same for 'Assembly of a bicycle front wheel'.	07
	OR	
Q.3	(a) Distinguish between a flow diagram and a string diagram.	03
	(b) Give the procedure for constructing a string diagram.	04
	(c) Memo motion study is gaining more popularity, why ? Discuss some of its applications in industries.	07
Q.4	(a) What is an element in time study?	03
	(b) State the reasons for breaking down the job in to elements?	04
	(c) What is rating ? Discuss various methods of rating.	07
	OR	
Q.4	(a) State the application of work measurement.	03
	(b) Explain various types of allowances.	04
	(c) Write note on 'Therblig' : Types, symbols and applications	07
Q.5	(a) What do you mean by 'standard time' of job?	03
	(b) Explain clearly the steps involved in arriving at standard time.	04
	(c) Write note on Analytical estimating : Purpose, advantages and limitations.	07
	OR	
Q.5	(a) State the importance of maintaining "Time standards".	03
	(b) Discuss about Predetermined Motion Time Systems.	04
	(c) How can work sampling be used to study production in machine shop? Explain with the help of suitable example.	07
