

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016**

**Subject Code:2171502****Date:21/11/2016****Subject Name:Work System Design****Time:10.30 AM to 1.00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define ‘Work Study’. Discuss why work study is a direct means of raising productivity. **07**  
 (b) “Application of work study is 10% technical and 90% psychological” – Explain. **07**
- Q.2** (a) What do you understand by term ‘critical examination’ ? Explain procedure to carry out critical examination. **07**  
 (b) Define work measurement system and explain its scope in industry. Also state its objectives. **07**
- OR**
- (b) How can work sampling be used to study production in machine shop? Explain with the help of suitable example. **07**
- Q.3** (a) “Human consideration is one of the most important aspects while selecting a job for method study” – Discuss. **07**  
 (b) Who was the originator of process charts ? Give objectives and limitations of operation process chart and prepare the same by taking an example. **07**
- OR**
- Q.3** (a) Distinguish between a flow diagram and a string diagram. Give the procedure for constructing a string diagram. **07**  
 (b) Prepare flow process chart for repair of a puncture in a motorbike. **07**
- Q.4** (a) Can you time the complete task at one instant or you have to divide the task in to elements before timing ? Why ? - Explain. **07**  
 (b) What is rating ? Discuss various methods of rating. **07**
- OR**
- Q.4** (a) Define qualified worker. What do you understand by the work content of a job or operation. Discuss in detail. **07**  
 (b) What is an ‘allowance’ in time study? Discuss various types of allowances. **07**
- Q.5** (a) Explain classification of movements and draw sketches showing normal and maximum working area. **07**  
 (b) Write note on Therbligs : Types, symbols and applications. **07**
- OR**
- Q.5** (a) Discuss the process of computing standard time. Name various inputs required to compute it. **07**  
 (b) Write note on : (i) PMTS (ii) MTM **07**

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