

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. - SEMESTER – IV • EXAMINATION – WINTER 2012****Subject code: 141501****Date: 31/12/2012****Subject Name: Productivity Engineering****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Answer should be to the point.

- Q.1 (a)** Define the following terms (Any two) 2.5x2
 (i) Production +2=0
 (ii) Value 7
 (iii) Work study
 What are the full forms of the following terms:
 (i) ERP
 (ii) SAP
- (b)** What are the measuring parameters to increase productivity? 07
- Q.2 (a)** Discuss the productivity improvement techniques based on the following 3.5x2
 parameters: =07
 (i) Technology based
 (ii) Material based
- (b)** Draw a neat and logical flow sheet of a product cycle and briefly describe it. 07
- OR**
- (b)** Define Total Productivity Measure (TPM). What are the basic features of this 2+5=
 measurement (TPM)? 07
- Q.3 (a)** Define the following terms: 2.5x2
 (i) Method study +2=0
 (ii) Work measurement 7
 “Work study is a powerful tool for improving productivity” --- justify the statement.
- (b)** What are the steps involved in work study? Discuss. 07
- OR**
- Q.3 (a)** Discuss the following considerations for method study: 3.5x2
 (i) Economic aspect =07
 (ii) Technical aspect
- (b)** What type of sign languages are used for the following terms: 5+2=
 (i) Operation 07
 (ii) Inspection
 (iii) Transportation
 (iv) Delay
 (v) Storage
 What are the basic objectives of method study?
- Q.4 (a)** What is the purpose of work measurement? Mention various techniques of work 3+4=
 measurement. 07

- (b) What are the steps related to time study? Discuss. 07
- OR**
- Q.4 (a) What are the advantages of work sampling compare to time study? 07
- Q.4 (b) Define work sampling. 3+4=
- $N = 4(1 - P) / A^2P$ ----- Just mention the notions used in this equation 07
- Q.5 (a) Define plant layout. What are the principles of plant layout? What are the advantages of plant layout? 1+3+ 3=07
- (b) Compare between product lay out and process layout. 07
- OR**
- Q.5 (a) What are the objectives of material handling? Draw a neat and logical flow sheet of a material planning process. What are the material handling factors? 2+3+ 2=07
- (b) Define the term organization. How do you categorize organizational resources? 2+3+ 2=07
- “Value engineering is a cost preventive technique” --- justify the statement.
