

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- VI<sup>th</sup> SEMESTER-EXAMINATION – MAY- 2012****Subject code: 161907****Date: 24/05/2012****Subject Name: Industrial Engineering****Time: 10:30 am – 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.

- Q.1 (a)** Define plant lay out. discuss following types of plant layout **07**  
 (1) Process layout  
 (2) Group technology  
 (3) Fixed position layout
- (b)** Wrote briefly on **07**  
 (1) work flow diagram  
 (2) operation process chart  
 (3) machine data cards
- Q.2 (a)** Write the functions included under the activity of production planning. **04**  
**(b)** What is economic order quantity? **03**  
**(c)** Discuss the following methods of sales forecasting **07**  
 (1) exponential smoothing  
 (2) methods of weighted moving average
- OR**
- (c)** What is line of balancing ? discuss in detail assembly line balancing taking suitable example **07**
- Q.3 (a)** What are factories act? What are major provisions for safety and health? **07**  
**(b)** State various sources of industrial finance. **04**  
**(c)** State various government incentives to entrepreneurs. **03**
- OR**
- Q.3 (a)** State various methods of job evaluation , discuss in brief. **07**  
**(b)** Define wages and explain in detail various types of incentives. **07**
- Q.4 (a)** State the relationship between productivity and work study. Explain various tools for increasing productivity. **07**  
**(b)** State the relationship between cumulative timing and fly back timing. **07**  
 How standard time is calculated ?
- OR**
- Q.4 (a)** What is method study? Explain in brief various charts and diagrammes utilized in method study. **07**  
**(b)** What is therblig? State the importance of micro motion study. **07**
- Q.5 (a)** State the advantages of S. Q. C. what attribute and variable quality characteristics are. **07**  
**(b)** Find UCL and LCL for following data **07**

Sample no.	---	R
	X	

1	26.0	35
2	34.0	17
3	28.5	18
4	32.75	22
5	29.25	31
6	29.25	15
7	26.0	19
8	24.75	29
9	27.25	18
10	30.25	9

Take  $A_2=0.73$ ,  $D_3=0$ ,  $D_4=2.28$ ,  $d_2=2.059$

**OR**

- Q.5** (a) Explain following terms **07**
- (1) quality assurance
  - (2) quality and inspection
  - (3) T. Q. M.
- (b) Explain in detail how P chart and C chart are constructed ? **07**

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