

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER-VI • EXAMINATION – WINTER 2013

Subject Code: X61904

Date: 11-12-2013

Subject Name: Industrial Engineering

Time: 02.30 pm - 05.00 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)** Explain following terms **07**
- (1) Six sigma
- (2) T.Q.M.

- (b)** Classify control charts. Explain one of them in detail. **07**

- Q.2 (a)** State the advantages of S.Q.C. What are attribute and variable quality characteristics. **07**

- (b)** Find the UCL and LCL for the following data. (Take $A_2=0.73, D_3=0, D_4=2.28, d_2=2.059$)

Sample no.	1	2	3	4	5	6	7	8	9	10
X bar	26.0	34.0	28.5	32.75	29.25	29.25	26.0	24.75	27.25	30.25
R	35	17	18	22	31	15	19	29	18	9

OR

- (b)** Explain in detail operating characteristics curves. **07**

- Q.3 (a)** State the relationship between productivity and work study. **07**

- (b) What is therbligs?. State the importance of micro motion study. 07

OR

- Q.3 (a)** How standard time is calculated? **07**

- (b)** What is method study? Explain in brief various charts and diagrams utilized in method study. **07**

- Q.4 (a)** Define wages and explain in detail various types of incentives. **07**

- (b) What are major provisions for safety and health in factory act. 07

OR

- Q.4 (a)** Explain various methods for job evaluation. **07**

- (b)** State various government incentives to entrepreneurs. **07**

- Q.5 (a)** Discuss following sales forecasting methods **07**

- (1) Exponential smoothing
- (2) Method of weighted moving average.

- (b)** What is economic order quantity? **07**

OR

- Q.5** (a) Write briefly on

- (1) Operation process chart
- (2) Machine data cards

- (b) What is line of balance?. Discuss in detail assembly line balancing taking suitable example. 07
