

MAY 2011

**P/ID 77531/PMER**

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Time : Three hours

Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE questions.

All questions carry equal marks.

1. List out the benefits and obstacles in implementing TQM.
2. Explain the association between quality and cost.
3. Emphasise the need for a reliable product.
4. How defects are identified in the process of manufacture?
5. Suggest techniques of quality improvement.
6. 'TQM aims at zero defect level'. Elucidate.
7. How quality circles are formed?
8. What are the components of environmental management?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

All questions carry equal marks.

9. Describe TQM attitudes needed to improve product development process.
10. Explain the significance of control charts to ensure quality of the products.
11. Discuss the nature of different methods of inspection and their impact on quality appraisal.
12. 'Value analysis is a management technique for reducing manufacturing costs'. Discuss.
13. Evaluate the role of ABC analysis in TQM.
14. Suggest and explain quality motivation techniques.
15. Explain ISO 9000 standards.
16. 'HRD and TQM go hand in hand'. Explain.

PART C — (20 marks)

Case Study :

17. The manager of a branch of a local bank wants to study waiting times of customers for teller service during the peak 12 noon to 1 P.M. lunch hour. A subgroup of four customers is selected (one at each 15-minute interval during the hour), and the time in minutes is measured from the point each customer enters the line to when his or her service begins. The results over a 4-week period are as follows :

Day	Time in Minutes			
	I	II	III	IV
1	7.2	8.4	7.9	4.9
2	5.6	8.7	3.3	4.2
3	5.5	7.3	3.2	6.0
4	4.4	8.0	5.4	7.4
5	9.7	4.6	4.8	5.8
6	8.3	8.9	9.1	6.2
7	4.7	6.6	5.3	5.8
8	8.8	5.5	8.4	6.9
9	5.7	4.7	4.1	4.6
10	1.7	4.0	3.0	5.2
11	2.6	3.9	5.2	4.8

Day	Time in Minutes			
	I	II	III	IV
12	4.6	2.7	6.3	3.4
13	4.9	6.2	7.8	8.7
14	7.1	6.3	8.2	5.5
15	7.1	5.8	6.9	7.0
16	6.7	6.9	7.0	9.4
17	5.5	6.3	3.2	4.9
18	4.9	5.1	3.2	7.6
19	7.2	8.0	4.1	5.9
20	6.1	3.4	7.2	5.9

- (a) Construct a control chart for the data above. Use zone boundaries.
- (b) Is the process in control? If not, when does the out-of-control behavior occur?
- (c) Drop the out-of-control points (assuming you have discovered any and changed the process to resolve the special causes) and recomputed the control chart. Is the process now in control? If not, when does the out-of-control behavior occur?