



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

June 2014

Post Graduate Diploma in Materials Management Paper 18.E Total Quality Management

Date: 21.06.2014
Time: 2.00 to 5.00 p.m

Max. Marks 100
Duration 3 hours

Instructions

1. The question paper is in three parts A, B & C.
2. Part A is compulsory. Each question carries one mark. Total : 32 Marks
3. In Part B, answer 3 questions out of 5. Each question carries 16 marks.Total : 48 Marks
4. Part C is a case study with sub questions and it is compulsory. It carries 20 marks.
5. Use of calculator is allowed wherever necessary.
6. Graph sheets can be used wherever necessary.

PART A

32 marks

(compulsory. Each question carry 1 mark)

Q. 1. Select the correct answer from the multiple choices.

i) All are axiom's of TQM except

- | | |
|-----------------|-------------------------|
| a) Commitment | b) Involvement |
| c) Consultation | d) Scientific knowledge |

ii) Identify the one that is not a dimension of service quality

- | | |
|----------------|----------------|
| a) Durability | b) Competence |
| c) Reliability | d) Consistency |

iii) Which of the following is not a part of Juran Trilogy?

- | | |
|-------------|----------------|
| a) Planning | b) Measurement |
| c) Control | d) Improvement |

iv) All are improvement strategies except

- | | |
|---------------|----------------|
| a) Repair | b) Replacement |
| c) Renovation | d) Reinvention |

v) Zero quality control is the contribution of

- | | |
|------------|-----------------|
| a) Shingo | b) Ouchi |
| c) Taguchi | d) Masaaki Imai |

vi) According to Kano which of the following is not a category of quality

- | | |
|----------------------------|---------------------|
| a) Soft quality | b) Expected quality |
| c) One dimensional quality | d) Exciting quality |

vii) Quality tool used to visualize the spread of a set of data is known as

- a) Histogram
- b) Pareto diagram
- c) Fishbone diagram
- d) Scatter diagram

viii) All are categories of quality cost except

- a) Prevention costs
- b) Design cost
- c) Appraisal cost
- d) Failure cost

Q.2. Fill in the blanks. (Please do not reproduce the statement)

- a) Cohesiveness is found in _____ stage of team development.
- b) _____ integrates product and process design.
- c) Improving business performance by learning from other companies is called _____
- d) In ISO 9001:2008 product realizations is dealt in clause _____
- e) Quality system requirement of automotive industry is best represented in _____
- f) Automation with a human touch is known as _____.
- g) The presence of _____ causes in a process is an indication that there are meaningful factors to be investigated.
- h) Use of a problem solving techniques using problem visualization with a view of identifying ways of waste elimination is known as _____

Q.3. Please state True or False

- a. Absence of motivating factors makes employees dissatisfied.
- b. Suggestion system is a method of encouraging people involvement.
- c. ISO 9000 is a product certification system
- d. Job enrichment is a method of empowerment.
- e. FMEA is an analytical technique that combines technology with experience
- f. Traditional view of quality was that it costs more to achieve higher product quality
- g. Participative style of management is known as theory Y
- h. Scatter diagram is a technique to present data into different groups or categories.

Q.4. Expand the following

- a) OHSAS
- b) COQ
- c) SAGE
- d) GPNQA
- e) PDPC
- f) CWQC
- g) CEDAC
- h) QLF

PART B

48 marks

(Attempt any three. Each Question carry 16 marks each)

Q.5. Briefly discuss the contributions of Edward Deming to the development of TQM

Q.6. What is meant by statistical quality control? Explain the concept of Acceptance sampling with suitable examples.

Q.7. What are the various tools given by Karou Ishikawa for quality improvement. Explain how this can be used for improving quality.

Q.8. a) Explain costs of quality using the model suggested by Juran.

b) Explain the concept of concurrent engineering.

Q.9. Write short notes on any **four**

4 x4 = 16

- a) Design for manufacturing
- b) Four absolutes of quality
- c) Dimensions of Service quality
- d) Benchmarking
- e) Quality Trilogy

Part C

20 marks

(Case Study)

Q.10. A major manufacturer of chemical products has a well-established TQ program. Its most recent effort involved preparing for ISO 9000 registration. The director of quality, who had spent time in European market saw the emphasis on ISO in Europe and felt that the firm would be at a significant competitive disadvantage if it did not pursue registration. In 1992 additional staff was hired in an attempt to register an additional plant by end of the first quarter 1993.

In the purchasing department, the additional work required to document the purchase of raw materials required three additional employees, bringing the number up to 10. All have been intimately involved in the preparation for registration. Many thousands of raw materials are used, and ISO requires that each of their specifications be reviewed, updated and documented. One of the new employees focused primarily on training the department's employees in the new procedures. Buyers see many potential benefits. Documentation of specifications will ensure more consistent materials purchases. Training documentation allows the department to tell what training requirement will be needed by new employees. In manufacturing, ISO appears to be just another quality programme. In the past, management would be gung-ho over the newest programme, but then enthusiasm would die. Employees were never told that the programme had ended and never saw any benefits. One technician saw no real incentives to participate and felt that management was simply forcing the programme on the employees. He felt that employees on different shifts had their own way of performing their work, and that standard operating procedures would never followed. The technician compares the ISO effort to a previous programme on safety. With the safety programme, improvements were made at the insistence of the employees. The benefit that the workers derived was quite evident. The benefits to be gained through ISO are not as clear as in the case of earlier programme.

Questions:

- a) What are the benefits of ISO 9000- certification?
- b) How ISO 9000 certification helps the employees in purchase?
- c) How the acceptance of IOS9000 programme can be improved?
