



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

Dec 2013

Post Graduate Diploma in Materials Management

Paper 18.E

Total Quality Management

Date: 21.12.2013

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. State true or false.

- a) Process Decision Programme Chart is a very useful and a powerful method to overcome problems when a goal to be achieved is not familiar.
- b) Acceptance sampling is not an assessment of risk in decision making
- c) Quality of design is determined after the product is produced.
- d) Cause effect diagram was introduced by Kaoru Ishikawa of China.
- e) Total Quality Management can be defined as an art of managing the whole to achieve excellence.
- f) The quality policy is a guide for every one in the Organization.
- g) Management Responsibility is to create positive climate for quality improvement.
- h) A scatter diagram graphically illustrates the relationship between variables, typically based on quantitative data.

Q.2. Fill in the blanks.

- a) One of the basic concept of the ----- philosophy is continuous improvement in the system.
- b) Poka-Yoke is called as 'mistake ----- in Japanese.
- c) ----- engineering enables the manufacturing to cut product development time considerably for new product.
- d) In 1956, -----was awarded the Shewhart Medal by American Society for quality control.
- e) ----- is meeting or exceeding customer expectation.
- f) Cause-and-effect diagrams are constructed in ----- type of atmosphere.
- g) ----- integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach.
- h) The ability of a sampling plan to discriminate is described by its -----curve.

Q.3 Expand the following:

- | | | | |
|--------|--------|---------|---------|
| a) ISO | b) COQ | c) JIT | d) CQWC |
| e) LCA | f) DFM | g) TEQA | h) PDPC |

Q.4 Match A and B

Marks:08

A

- 1) Cause and Effect Diagram
- 2) Concurrent Engineering
- 3) ISO 9000
- 4) QFD
- 5) Maslows Needs
- 6) Process Capability Ratio
- 7) JURAN
- 8) X-R Charts

B

- a) Kaoru Ishikawa of Japan
- b) To meet customer needs
- c) Motivational Theory
- d) Series of Standard
- e) Process Distribution
- f) Controlling and analyzing a process
- g) Facilities Integration
- h) Quality improvement Process

PART B

48 marks

(Attempt any 3. Each question carries 16 marks)

Q.5 What do you understand by total quality and total quality management? What relationship do you establish between TQM and Indian scriptures? How is this relationship helpful to Indian organizations for implementing TQM?

Q.6 a) Describe in brief various TQM models. Which one of these models do you think is more suited to Indian situations ?
Marks : 08

b) Describe the steps involved in problem solving process which provides a useful structure for dealing with any problem
Marks: 08

Q.7 Explain tools and techniques which help to conceive new ideas and creative concepts, detect problems, prevent omissions & oversights, foresee the future and assist trouble shooting and promote goals cooperatively.
Marks 16

Q.8 a) Why a business organization has to assure quality of products manufactured by the organization ?
Marks: 08

b) Explain the different types of sampling methods with examples?
Marks: 08

Q.9 Write short notes.

Marks: 4 x 4 =16

- | | |
|----------------------------|-------------------|
| 1) Juran's quality trilogy | 2) Quality Awards |
| 3) ISO 9000 | 4) Quality Manual |

PART C

20 marks

Q. 10. Case study (Compulsory)

Philips India Ltd., A MNC has its major plant in Calcutta. The company is having a very sound corporate image and reputation in Indian market over the years for its electronic products, namely TVs, Radios, transistors, battery cells, electric bulbs, electric tubes, two-in-one etc

The labour trouble started in 1990. The company had its ancient production system in its main plant at Calcutta. Labour unions started agitating for salary hike and asked for a number of incentives and facilities to establish parity with other competing electronic giants. "There was a political clout of the labour unions which lead to increased militancy" says the Chief Executive Officers of the Philips India Ltd., The situation of labour trouble took such an ugly turn that the Dutch parents of the Philips India decided to get out of India by closing the plant.

In 1995, however, managers refused to give up and decided to implement TQM. The first step for which was total employees involvement. The management adopted the strategy of managing people through involving, empowering and motivating. The management re-established its future vision-to be an international design and production center and decided to benchmark with international quality system standards . The main weakness of the company started converting into strength when labour unions started participating intensively. A number of self-directed and self-managing mini, micro and mega-teams were formed and assigned responsibility and accountability under dynamic leaders.

By 1995 the Calcutta plant of Philips India became a model factory for its major competitors to envy – its operations and turnaround. The R & D section took the leading role for spearheading the company with its smart people and well equipped laboratories. The posters claiming "Quality" were exhibited in the premises and all working areas. All this made the Calcutta plant a showpiece of Philips. It became the company's best bet for an international manufacturing center. The progress due to teamwork and quality orientation was so impressive that it led the company to achieve the internationally most coveted – The European Quality Award. The company also obtained certification of environmental management system EMS 14001 which gave it a further boost in improving its sagging image during the previous 4-5 years from 1990 onwards.

In a nutshell, five beliefs helped the management in its revival. These five beliefs are: (i) mission statement, (ii) revolve around valuing, (iii) trusting and creating trustworthiness, (iv) respecting the people and using their brainpower in teams, and (v) continuously motivating them.

A few other things which helped the company are : propagating employees hip. TQM was used to bring about the much needed cultural change, open communication, sharing information, sharing problems openly, and an appeal to labour unions to uphold the pride of Calcutta. Moreover, the company started operating in 3 shifts instead of only general shift over the previous time period. The continuous improvement through structured Kaizen activities was adopted as a way of day-to-day work improvement in assignments. A suggestion scheme was suggestions. Cross-functional groups and small group improvement activities did surveys on employee motivation were undertaken to know and further boost the employees morale and participation in decisions of the company.

Focus on customer and their delight was increased by customer surveys, defect tracking, undertaking defect repairs, meeting the warranty claims, making after sales service better, customer help line documents, promptness in delivery, etc., Internal customer satisfaction was improved by strengthening internal supplier-internal customer chair with self-appraised vendor services. The inputs from the internal were obtained regularly for carrying out performance appraisal of the officers. The practice kept the officers on their toes.

"Today, the company has not only recovered from its previous labour trouble but also has counted itself amongst the few world-class companies: It has obtained recognition the world-over by winning the most coveted award - The European Quality Award", says the Chief Executive of the company. "Philips India Ltd. Has become a benchmark for various competitors in India and abroad", the CEO of the company adds further.

Questions :

1. Discuss various problems which compelled the company management and its Dutch parents to decide to wind up the Calcutta plant?
2. What strategy helped the company to revive its Calcutta plant and win The European Quality Award?
3. What are the other areas in which the company could have brought about total quality control?
4. How would you apply the Philips India Policy to help other electronics companies in India to implement TQM?
