

**DEC-2010**

**INDIAN INSTITUTE OF MATERIALS MANAGEMENT**  
**Post Graduate Diploma in Materials Management**  
**Paper – 18.e**

**TOTAL QUALITY MANAGEMENT**

Date: 19.12.2010  
Time: 2.00pm to 5.00pm

Max Marks: 100  
Duration: 3 hours

**Instructions:**

1. The question paper is in three parts.
  2. Part A is compulsory. Each question carries one mark
  3. In part B answers 3 questions out of 5. Each question carries 16 marks.
  4. Part C is a case study with sub questions and it is compulsory.
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**PART A**

Q.1. State true or false. Marks: 08

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

Q.2 Fill in the blanks. Marks: 08

- a) ----- integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach.
- 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) One of the basic concept of the ----- philosophy is continuous improvement.
- h) The ability of a sampling plan to discriminate is described by its ----- curve.

Q.3 Expand the following: Marks:08

- a) TEQA
- b) COQ
- c) JIT
- d) ISO
- e) LCA

- f) PDPC
- g) CQWC
- h) DFM

Q.4 Match A and B

Marks:08

**A**

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

**B**

- Controlling and analyzing a process
- To meet customer needs
- Motivational Theory
- Series of Standard
- Process Distribution
- Kaoru Ishikawa of Japan
- Facilities Integration
- Quality improvement Process

**PART B**

Q.5 a) Explain the scope of TQM?

Marks: 08

b) What is Juran's quality trilogy?

Marks:08

Q.6 a) Describe the need of quality in the present day context. What are the impacts of quality?

Marks: 08

b) What is supply chain management? Explain the process?

Marks: 08

Q.7 a) What do you understand by the term 'Cost of Quality'?

Marks: 08

b) What is quality manual? What is its use?

Marks: 08

Q.8 a) What are the types of quality?

Marks: 08

b) What is ISO 9000 and what are the benefits?

Marks: 08

Q.9 Write short notes.

Marks: 4 x 4 =16

- 1) Sampling Techniques
- 2) Objective of quality assurance
- 3) Brainstorming
- 4) TQM implementation

**PART C**

**Case study**

**Case Study - TQM - Total Quality Management in Ready mix concrete producers firm**

Our client, a multi-location ready mix concrete, sand and gravel supplier faced the twin problems of escalating costs and eroding customer service. MLE was engaged to support the President as he implemented his vision for the firm. Central to his vision was the creation of a culture which valued quality, customer service and continuous improvement. Over a six month period MLE Consulting performed a TQM readiness assessment, organized the

Quality Steering Committee, trained the management and hourly employees in TQM and supported the work of the departmentally based Quality Teams and the cross functional Corrective Action Teams. Our client has reported savings of \$2 million to \$3 million. Background: The firm is one of the largest ready mix concrete producers in the Mid-Atlantic region. Over 350 employees are spread over seven different locations and four major divisions. The second generation management team recognized the need to change the culture of the organization without losing the strength of the family oriented culture. The company did not have a history of participative management and reacted slowly to opportunities. Initial interviews confirmed that management was viewed skeptically. Substandard internal communication fed fear and resentment on the part of employees. Managers and employees were very loyal to the company. Most of them had grown up in the business. Management had a "shirt sleeve style" typical of the construction industry. Most of the truck drivers could read and write. Turnover was exceptionally low by national and regional standards. The prolonged recession in commercial and residential construction had put them in a vulnerable position. They were faced with increasingly aggressive competition. A major objective for implementing TQM was to eliminate the waste in delivery and improve the reliability of delivery. The President made it plain that the savings from improvements would fund the culture he needed to implement TQM. The Process: The first step was to perform a TQM readiness assessment. Over a five day period MLE interviewed all of the senior management team and several hourly employees. This confirmed initial observations and highlighted several areas for targeted customer service improvement and cost reduction. TQM training was developed and initial Corrective Action Teams (CAT) were formed, based on the results of the assessment.

The next step was to communicate the vision to every employee in the company. The President told each employee his vision for the business. MLE attended these special 5:30 AM meetings with the truck drivers to answer questions about the TQM process. The next step was to organize the steering committee and train the management team. Training was further developed in the six TQM training sessions. By incorporating their culture, credibility was improved. In addition, training improved the application of TQM ideas and broke down barriers to change. Four groups of twenty employees were then trained. MLE trained in-house trainers to continue the training of employees. A second, but equally important task continued parallel to the training. The Corrective Action Team (CAT) used the TQM process to improve the customer service levels and eliminate waste in trucking. The CAT team used each of the five critical areas in Total Quality Management to generate the needed changes in their trucking operations: Customer Focus • Teamwork • Problem Solving • Waste Elimination • Continuous Improvement • Over three months they generated cost reduction initiatives worth \$600,000 and implemented over \$300,000 of cost savings. This major victory by hourly and first line management demonstrated the effectiveness of TQM. Results: The client engaged MLE to support a change in the vision of the company. They realized a 25:1 payback on their investment in Total Quality Management. Their premier service reputation was restored and they became the preferred supplier to many contractors. According to the President, the company has become much more flexible and responsive. Improvements to the bottom line bear this out.

**Q.10**

Marks: 4 x 5 = 20

- (a) List out the problems in Ready mix concrete producers firm.
- (b) What is the need of MLE?
- (c) Explain the impact of TQM on overall efficiency of firm?
- (d) Explain the role and impact of CAT Team?