



# INDIAN INSTITUTE OF MATERIALS MANAGEMENT

Dec 2011

## Post Graduate Diploma in Materials Management Paper 18e Total Quality Management

Date: 17.12.2011  
Time: 2.00 to 5.00 p.m

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 answer any 3 questions out of 5. Each question carries
4. Part C is a case study with sub questions and it is compulsory.

Total marks-32  
16 marks  
Total marks-48  
Total marks-20

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1. Fill in the blanks. (Please do not reproduce the statement)
    - a) The wake hour dream of an organization is its \_\_\_\_\_
    - b) Eight dimensions of quality is proposed by \_\_\_\_\_
    - c) Non value adding activity is called \_\_\_\_\_
    - d) Quality auditing is a \_\_\_\_\_ cost.
    - e) The spread of a process can be easily understood by \_\_\_\_\_.
    - f) Information, which can be proved true , based on facts obtained through observation, measurement or test is called \_\_\_\_\_
    - g) 5S are five Japanese words that constitute the concept of \_\_\_\_\_
    - h) A person who receives the output from a previous process is called the \_\_\_\_\_ customer to that process.
  2. Please state True or False
    - a) TQM is a statistical approach to quality.
    - b) Good suggestion scheme facilitates employee involvement.
    - c) With sufficient investigation, all variation in a process output can be eliminated.
    - d) Arrow diagram is used to map the sequences in which activities will be undertaken.
    - e) Internal audits are carried out by third party.
    - f) Major NCR is one that affects quality system.
    - g) Benchmarking is a process of setting targets.
    - h) Quality cannot be inspected into a product; it has to be built in.

3. Match A and B

- | A                              | B                          |
|--------------------------------|----------------------------|
| a) Poka yoke                   | 1) Quality assurance model |
| b) Quality Trilogy             | 2) Crosby                  |
| c) Robust quality              | 3) Kaizen                  |
| d) Fish bone diagram           | 4) Control chart           |
| e) ISO 9000                    | 5) Mistake proofing        |
| f) Continuous improvement      | 6) Juran                   |
| g) Quality is free             | 7) Taguchi                 |
| h) Statistical process control | 8) Karou Ishikawa          |

4. Expand the following

- a. RGNQA
- b. CMM
- c. QMS
- d. QFD
- e. PDCA
- f. LTPD
- g. SPC
- h. TPM

## **PART B**

5. Explain the concept of TQM? What are the philosophies of TQM? How is it different from conventional quality?
6. Compare the teachings of Deming, Juran and Crosby.
7. Explain the elements of TQM with examples.
8. Distinguish between
  - a) Un assignable causes and assignable causes
  - b) Cost of conformance and cost of non-conformance
  - c) Quality control and quality assurance
  - d) People involvement and people empowerment

9. Write short notes on any four
  - a) Supplier relationships
  - b) Cost of quality
  - c) Problem solving tools
  - d) Acceptance sampling
  - e) Deming award

## **Part C**

### **(Case Study)**

10. Pro Fasteners of San Jose, California, has been particularly innovative in building quality customer-supplier relationships. President Steve Braccini conceived a new role for his company that provides industrial hardware and components to the electronics industry.

In the late 1980s, many of Pro's customers were making the kinds of changes such as buying from fewer suppliers and using long-term contracts. They were asking more of their suppliers, including a commitment to keep them stocked with their product, quality guaranteed. Braccini realized that his customers were really saying they didn't want to have to worry about their parts inventory and that Pro Fasteners could do a better job of managing it than they could and at a lower cost. As Braccini put it, "Suddenly the customer could cut his in-house staff. He'd have no purchasing costs, no receiving costs, and no quality-assurance costs."

With the vision of being excruciatingly close to the customer came some significant management and organizational changes for Pro Fastener. They would learn to anticipate customer needs. They would have to be on the cutting edge of quality. They would need the computer power to keep track of hundreds of thousands of parts. Most important, they would need committed and adaptive people in the organization to pull this off.

Using teams, among other methods, Pro Fastener has made a great deal of progress in turning the quality vision into reality. One team found a way to ship 100 percent parts with 100 percent on-time delivery to Applied Materials, a major customer. Another team responded to customer complaints about setting up credit with a \$100 "courtesy account" that can be opened immediately, with no credit check. Hundreds of similar changes have transformed the company, particularly its relationships with customers.

The changes did not come easily. Employees often wondered whether Braccini knew what he was doing. Braccini created an employee quality group called the Continuous Improvement Council, which eventually decided to kick all of the managers off the quality teams.

However the customer-supplier relationships Pro Fasteners has developed paid off in a big way. Despite a recession, the company's sales rose 20 percent between 1989 and 1992, and the company won more than 50 quality awards during this period. Overall, as one purchasing agent puts it, "They're the best." What else could you ask for in a supplier?

**Questions:**

- 1) Illustrate the customer-supplier relationships discussed in this case study. (6 marks)
- 2) If the company had failed in its attempt to change the nature of its business what would have happened to it. ( 6 marks)
- 3) What role can information systems play in managing customer-supplier relationships?  
( 8 marks)

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