



**INDIAN INSTITUTE OF MATERIALS MANAGEMENT**

**June 2015**

**Post Graduate Diploma in Materials Management  
Paper 18.E (Old & New)  
Total Quality Management**

**Date: 20.06.2015  
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.

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**PART A**

**32 marks**

**( compulsory. Each question carry 1 mark)**

**Q 1. Expand the abbreviations :**

- a. QCFI
- b. CII
- c. DFM
- d. FMEA
- e. ZDD
- f. CWQC
- g. QLF
- h. MBWA

**Q 2 . Fill in the blanks :**

- a. Through ..... the statistical quality control was introduced in Japan .
- b. .... Was the first winner of Malcolm Baldrige National Quality Award .
- c. .... is the first step to quality .
- d. Juran Trilogy contains planning , control and \_\_\_\_\_
- e. The consideration for selection of suppliers are quality and ..... delivery .
- f. As per ..... quality is everybody's job .
- g. .... law states that 20% of items account for 80% of value .
- h. .... determines relationship between two process characteristics

**Q 3 . Match the following :**

<b>Column A</b>	<b>Column B</b>
a. Process Improvement strategy	a. Philip Crosby
b. Deming	b. F.W. Taylor
c. Zero defect	c. Customer needs
d. Piece rate wage	d. Sampling Plan
e. Te boul model	e. Listening to customer
f. Operating characteristic curve	f. 14 points of quality
g. ISO 9001	g. Quality audit
h. Kano model	h. Re invention

**Q 4. State true or false :**

- a. Purchasing cycle begins is an organization .
- b. Design for manufacturing is a process and set of tools .
- c. The first 6 steps in Crosby's quality improvement to be done by the Management .
- d. Customers do not have information in quality .
- e. Total quality aims at 99.9% improvement .
- f. Building the House of Quality consists of 6 steps .
- g. Adequacy audit is same as desk top review .
- h. ISO 14001 standard provides Environmental Management Systems .

**PART B**

**48 marks**

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

**Q 5. Write short notes on any 4**

- a. Concepts of ISO 14001 .
- b. Deming prize .
- c. Operating characteristic curve .
- d. TQM framework .
- e. Crosby's six C's

**Q 6.** When to use the process decision programme chart?

**Q 7.** Critically evaluate human relations in auditing .

**Q 8.** What are the stages of improvement in bench marking .

**Q 9.** What are the relevance of Supply Chain Management to Total Quality Management?

## **Part C**

### **Q. 10 Answer case study :**

**20 marks**

The Directors of Mahindra Ugine Steel Co. Ltd (MUSCO) were worried about the loss of the company. On a turnover of Rs. 190.47 crore the loss was Rs. 11.47 crore. The interest burden is Rs. 9.38 crore per annum adding fuel to fire.

Today the company won the idea of increasing workers involvement in productivity through multiple skills, time analysis. Self managing teams, suggestion analysis, kaizen, worker's education & training ect. All the employees know very well these quality terms and practicing as well. This changes work culture as the fallout of a HRD programme, the company has adopted as a part of the restructuring programme in 1994.

In 1995-96 the turnover has grown to Rs. 216.96 crore and the profit is Rs. 10.76 crores. The company is expecting an annual growth rate of 10-15%.

Along with the fiscal discipline, the CEO and his team realized that it is imperative to downsize their employees and increase labour productivity to reduce costs further.

The company exposed its manager and workers to a Canadian steel company's in house operation training which experienced miraculous recovery from problems to plenty. The Canadian steel co. has become a benchmark for MUSCO with 550 workers, the company produces 70,000 tons of steel. The training cost is Rs. 2.5 lakhs per employee including a daily allowance of \$150 for workers and \$200 for manager. The workers were given initial training in English language before the overseas training. The training abroad have done a lot to improve the morale of workers. The process of selection for the workers training is based on performance, team building, attendance, education and knowledge and the selection was done on merit though many workers are apprehensive that the union will be give first preference in the selection process.

As a result of this training, the absentees has reduced from 5.5% to 3%, reducing overtime from 10-12% to zero and employees not pressurizing casual leave for union work. The trained workers reduced the costs, reduced the wastage and increased productivity in the steel melting units which accounts for 60% of total production cost.

The yield of metallic scrap to liquid steel has increased from 87% to 89.5% in two years compared to global standard of 90% and in other areas witnessed increase in productivity level.

Now the workers as a part total employees involvement, attend to customer grievances, and a strong contender for global benchmark.

**Questions :**

- a. What are the steps taken by his company to achieve Total Employees Involvement?
- b. In your opinion what are the other quality aspects can be taken up by the company towards achieving the goal?
- c. What are your suggestions to empower the employees apart from education and training?
- d. What are the gains of the company out of the overseas training in the light of internal problem faced by the company?

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