



INDIAN INSTITUTE OF MATERIALS MANAGEMENT
Post Graduate Diploma in Materials Management
PAPER No. 16

Dec 2014

Business Strategies and World Class Practices

Date : 18.12.2014
Time : 2.00 p.m to 5.00 pm

Max. Marks : 100
Duration : 3 Hrs.

Instructions:

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

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

PART A

(32 marks)

(compulsory. Each sub-question carry 1 mark)

Q.1. Fill in the blanks. (Please do not reproduce the statement)

8 marks

- i) PDCA is known as _____ cycle.
- ii) Automation with a human touch is known as _____
- iii) The tool that operationalize JIT is _____
- iv) Mass customization strategy is based on _____
- v) As a measure of world class quality, a class A manufacturer should have fewer than _____ defectives parts per million of any product it manufactures.
- vi) The planning unit of time in MRP is _____
- vii) Waste is something that does not add _____
- viii) _____ flexibility is the company's ability to introduce new products and modifications to current products.

Q.2. State True or False (Please do not reproduce the statement)

8 marks

- i) Successive inspection is the inspection of a component successively many times by the same worker.
- ii) Creating Tiers of suppliers help in supplier base reduction.
- iii) The term world-class manufacturing was introduced by Taichi Ohno.
- iv) Cusum charts are used to detect trends in variation.
- v) In the information age value is created only by white-collar workers.
- vi) Set-up operations can be classified into external and internal.
- vii) Gunn's frame work of world class manufacturing is based on TQM, JIT and BPR.
- viii) Juran's TQM model is centered around quality planning, quality control and quality improvement.

Q.3. Expand the following

8 marks

- i) AGV
- ii) CAE
- iii) PDM
- iv) MPS
- v) BPR
- vi) MRP II
- vii) WIP
- viii) DFM

Q.4. Match A and B

8 marks

- | A | B |
|-----------------------|-------------------------------------|
| i) Robust quality | a) Mistake Proofing |
| ii) TQM | b) Automated transaction processing |
| iii) ERP | c) Cellular layout |
| iv) Variation | d) Internet |
| v) Poka yoke | e) Taguchi |
| vi) External failure | f) Customer-centric |
| vii) Group technology | g) Cost of quality |
| viii) Globalization | h) Control chart |

PART B

48 marks

(Attempt any 3 . Each question carry 16 marks)

- Q.5 What are the characteristics of world-class manufacturing? Explain using Schonbergers framework.
- Q.6 Explain the elements of TQM. How TQM helps in achieving world class status?
- Q.7 Explain the characteristics of Lean Production system.
- Q.8 a) Explain Deming's 14 principles.
b) What is Cost of quality? Explain.

Q.9. Write short notes any four

8 marks

- a) Process capability
- b) Quality Function Deployment
- c) Four absolutes of quality
- d) Cellular manufacturing
- e) Computer integrated manufacturing

PART C

20 marks

Q. 10. Case study - Compulsory

Maruti Udyog Limited (MUL), the leading manufacturer of cars in India is a leader in supplier relationship management. Its turnover was Rs 12,481.00 crores and its profit before tax was 1750 crore in 2005-06. It sold 5,61,822 vehicles in 2005-06 and captured a market share of over 55 percent. It deals with about 7100 components for its eleven major models. Seventy percent of its suppliers by numbers are located within 100 km radius of its Gurgaon plant. They meet more than 80 percent of Maruti's requirement by value.

Maruti has 220 approved vendors who supply the major components. The top 80 vendors supply 86 percent by value of their purchases. The rest of the vendors supply only 14 percent. It has also signed joint ventures with a large number of its vendors. Of the 86 percent components supplied by vendors, joint ventures supply only 34 percent; the rest of the 52 percent by value is supplied by other vendors. These 80 vendors are considered strategic partners. Only 20 to 30 of them are Maruti joint ventures.

With strategic partners, Maruti has a number of programmes. Their emphasis is on vendor productivity and quality. Maruti take a major role in improving vendor productivity. It organizes *Junkai VA* or cost workshops with its vendors on an ongoing basis. *Junkai* is a Japanese word which basically means "visiting". It has 3 components called three G- *Genmab*, *Gembutsu*, and *Genjitsu*.

Gemba means taking a look to see what is happening at the site. *Gembutsu* means examining the affected piece to understand what exactly the defect is. *Genjitsu* means discussing under what conditions this has happened – something like a brainstorming session. Typically, a team from Maruti, along with the supplier team visits the supplier's shop floor, has look around, noting down points. They then have a brainstorming session at the Maruti office. At the end of the brainstorming, they come out with various points relating to improvements in productivity, quality and cost.

Maruti also has constituted a group called Maruti Centre for Excellence. This is a team which continuously goes to suppliers to upgrade them. It audits the workings of its suppliers and comes out with a spider chart. The spider chart has 22 points. Each vendor is evaluated in these 22 points. Additional business is promised on the next new model to vendors who score over 60 percent on the spider chart. Every vendor really tries to make sure that he goes above this mark.

Apart from this, it has also started second tier improvement in a very big way. This was the latest initiative it took up a year ago. The result has been that the second tier vendor's quality has also gone up. It has also started 'green initiatives'. Accordingly, all packing has been converted into reusable packing. It recently introduced a practice to check the pollution levels of all the trucks getting into Maruti; if pollution levels were not right, then the trucks were sent back. This made its vendors understand that Maruti cared about the environment.

Further, it follows the Kaizen theme, which means to make it smaller, fewer, lighter, shorter, and beautiful. It follows this theme in its plant and has been continuously teaching this practice to its vendors. It conserves the usage of material and yield improvement. Moreover, along with CII and USAID, it has started a programme to help its suppliers get ISO 14000 certification. It has also started a programme on ELV compliance. Though this is not required in India, the idea is that by the time the requirement comes to India, Maruti's vendors will all be sufficiently equipped to take care of it. It also has a vendor finance cost reduction programme. It has lined up with banks to see that the loans of its suppliers are transferred to lower interest rates. Through these initiatives Maruti has become more agile and leaner.

In 2005-06, Maruti trained around 16 vendors and ultimately the savings of man hours per day came to 1580 man hours, which has resulted in a saving of over one crore rupees per annum. It was able to reduce component costs by 29 percent on the Alto alone from 2001 to 2005.

Questions:

- 1) What are the characteristics of a world class supplier?
- 2) How Maruti is trying to achieve the objectives of having world class suppliers?
- 3) Discuss the kind of relationship and the methods adopted by Maruti to achieve supplier relationship?
