



INDIAN INSTITUTE OF MATERIALS MANAGEMENT
Post Graduate Diploma in Materials Management
PAPER No. 16
Business Strategies And World Class Practices

Dec 2012

Date :13.12.2012
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

(1 x32 = 32 marks)

Q.1. Select the correct answer from the multiple choices

- i) A world class manufacturer should achieve a quality of
- | | |
|-------------------------------------|-------------------------------------|
| a) 500 defective parts per million | b) 200 defective parts per million |
| c) 1500 defective parts per million | d) 1800 defective parts per million |
- ii) The ability to quickly, efficiently and effectively respond to changes is called
- | | |
|----------------|-------------------|
| a) Agility | b) Reliability |
| c) Flexibility | d) Responsiveness |
- iii) The goal of mass customization strategy is
- | | |
|----------------------------|---------------------------|
| a) To improve quality | b) To improve flexibility |
| c) To improve productivity | d) To improve reliability |
- iv) The product technology determines all of the following except
- | | |
|----------------|----------------|
| a) Performance | b) Features |
| c) Appearance | d) Reliability |
- v) All of the following are goals of manufacturing excellence except
- | | |
|-------------------------------|----------------------|
| a) Increased throughput | b) Reduced inventory |
| c) Reduced operating expenses | d) Reduced yield |

vi) _____ flexibility is the company's ability to introduce new products and modifications to current products

a) Design

b) Process

c) Product

d) Operation

vii) All of the following are pillars of Gunn's model of WCM except

a) CIM

b) TQC

c) JIT

d) BPR

viii) The two pillars of Toyota Production system are automation and _____

a) JIT

b) SMED

c) TPM

d) Kanban

Q. 2. State True or False

- i) Cheap labour as available in India is a major competitive advantage to compete against world class manufacturers.
- ii) Kinni characterizes world class manufacturing by three core strategies of customer focus, quality and agility.
- iii) In the information age value is created only by white-collar workers.
- iv) Manufacturing technology has two aspects: the technology of product and the technology of information.
- v) Manufacturing is the bedrock on which the economic wealth of nation is built.
- vi) Automation is automation with a human touch.
- vii) As per supermarket concept the later process is considered as a store.
- viii) Supplier base reduction helps in reducing purchase overheads.

Q.3. Fill in the blanks

- i) _____ is the process that cut across national boundaries, integrating and connecting communities.
- ii) Managing _____ would be a big challenge in the twenty first century due to its strategic potential.
- iii) In most manufacturing organizations, the information processing is still _____ even though computerized applications environment exists.
- iv) _____ is anything that does not add value.

- v) According to Shingo _____ is an action by which material is transformed into a product.
- vi) Cusum charts are used to detect _____ in variation.
- vii) Out of the seven wastes, the deadliest waste is _____.
- viii) The operational tool that carries out the just-in-time production method is _____.

Q.4. Match A and B

A	B
i) Speculative production	1) Visual models
ii) Robust quality	2) Michael Porter
iii) MRP	3) Control chart
iv) Value chain	4) Cross trained workforce
v) Data Mining	5) Offline QC
vi) CAD	6) Joseph Orlicky
vii) Variations	7) Shingo
viii) U shaped layout	8) Neural methods

PART B (any three) (16 x3 = 48 marks)

Q.5. What is world-class manufacturing? Explain the concept using Gunn's model.

Q.6. Explain the contributions of Shingo to WCM.

Q.7. Elaborate the following

- a) Cellular manufacturing
- b) System of profound knowledge

Q.8. Differentiate between the following

- a) Internal set up time & External set up time
- b) On line QC & Off line QC
- c) Judgment inspection & Informative inspection
- d) Order qualifier & Order winner

Q.9. Write short notes any four

- a) Focused factory
- b) Seven wastes
- c) Supplier base reduction
- d) Hall's model of value added engineering
- e) MRP

PART C – Compulsory

20 marks

Case study

Q.10. Many automobile manufacturers have gone to JIT manufacturing approach, increasing pressure on automotive suppliers to provide frequent, reliable deliveries. This in turn requires the automotive suppliers to work closely with their raw material suppliers to ensure reliable deliveries. Waterville TG Inc (WTG), located in Waterville, Quebec, specializes in designing and manufacturing top quality weather strips for cars. Its product line includes close to 500 different models of weather strips, which it supplies to about a dozen automobile manufacturers.

To improve its purchasing performance, WTG undertook an effort to integrate its MRP system with a kanban-type vendor scheduling system. Master production scheduling is based on planned order releases supplied by customers and typically covering to an 8 to 16 week horizon. Customer orders are firmed up weekly for the first week to 10 days. WTG's MRP system then computes the number of kanban cards needed to cover the demand. Every Monday WTG faxes its gross requirements for the next 12 weeks to each of its suppliers. Updates are faxed to suppliers daily. A standard kanban quantity is established for each material purchased from suppliers, and each week WTG faxes an order to each supplier though many kanbans are needed to replenish its inventory.

To help implement smaller and more frequent deliveries from suppliers, WTG established a daily milk-run-type of transportation schedule among its factory, its finished goods warehouse, and 8 of its 12 suppliers of raw materials located in the area.

The results of these actions have been impressive. Total inventories have been reduced from 28 to 8.4 days supply. Average purchase lead times have been reduced from two weeks to one to two days. The average time to respond to changes has been reduced from four days to one day. And, the reduction of emergency situations (impending stock outs) has been reduced from 41 to 31 occurrences annually.

Questions:

1. Enumerate the characteristics of JIT based on the case study.
2. How the company integrated MRP and JIT?
3. Critically evaluate the benefits of JIT based on the changes needed in the systems.
