INDIAN INSTITUTE OF MATERIALS MANAGEMENT

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Post Graduate Diploma in Materials Management

PAPER No. 16

Business Strategies And World Class Practices

Date :15.12.2011 **Max. Marks :100**
Time : 2.00 p.m to 5.00 pm **Duration : 3 Hrs.**

Instructions:

1. The question paper is in three parts
2. Part A is compulsory. Each question carries one mark. **Total marks-32**
3. In Part B answer any 3 questions out of 5. Each question carries 16 marks **Total marks-48**
4. Part C is a case study with sub questions and it is compulsory. **Total marks-20**

PART A

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

a) Marketing oriented priorities that are key to competitive success are order _____ and order _____.

b) TQM is _____ centric.

c) Near defect-free situation is achieved by ____ _____.

d) Integration of supply chain requires _____ orientation.

e) Poke yoke is also termed as _____ defect.

f) The information age is dominated by _____ workers.

g) The term world class manufacturing was introduced by _____.

h) The letter S in the abbreviation QSFV stands for _____.

2. Please state True of False

a) In time based competition the entire focus is on reducing manufacturing cycle time.

b) One of the objectives of global operations is to attract and retain global talent.

c) Manufacturing strategy means the ability to adapt quickly to changes.

d) Supplier certification verifies whether a supplier meets or exceeds the requirements of a buyer.

e) ALDEP is a program used for lay out design.

f) External quality can be measured through repeat sales.

g) Use of visible figures is an important aspect of Deming's model of TQM.

h) Focus on world class manufacturing strategies results in higher productivity.

3. Match A and B

A	B
a) Competitive advantage	1) Kaizen
b) ASRS	2) Deming prize
c) Lean production	3) Crosby
d) Reengineering	4) Shingo
e) Continuous improvement	5) Porter
f) TQM excellence	6) Computer controlled warehouse
g) Four absolutes of quality	7) Less resources
h) Zero Quality Control	8) Improving business processes

4. Expand the following

a. CIM
b. LPG
c. AIS
d. PWP
e. MBO
f. MES
g. SQC
h. DFM

PART B

5. What are the pillars of world class manufacturing? Explain your answer using the models proposed by Schonberger, Gunn and Maskell.

6. Critically evaluate the contributions of Shingo.

7. Compare the 14 points proposed by Deming and Crosby in the context of TQM.

8. Explain the concept of TPM.

9. Distinguish between any four

a) External quality and internal quality
b) Judgmental inspection and informative inspection
c) External set up time and internal set up time
d) Reengineering and Kiazen
e) Quality control and quality assurance

Part C

(Case study)

Q.10 Located in Everett, Washington, Intermec Printing Systems (IPS) is a manufacturer of bar-code printers, a fast-growing industry with a unit volume growth of 30 percent annually. Previously, IPS had a separate production line for each printer model it produced. With the growth the company was experiencing and with more new printer designs on the way, the company was running out of manufacturing space. In addition, frequent rework of printers to accommodate special configurations, excess finished-goods inventory, and slow response to customer demand were resulting from the company's approach to production.

To improve its competitiveness and profitability, and to reestablish itself as a world leader in the bar-code printing business, IPS management decided to adopt the techniques of JIT manufacturing. With the help of consultants, IPS embarked on a transformation to create a short-lead-time, low inventory, high-product quality, quick-response production system.

After sending all of its employees to training seminars, IPS collected data and thoroughly analyzed each production process necessary to produce its printers. Instead of using a separate production line for each printer model, IPS created a single, mixed-model production line to produce all of its printer models. The production sequence of its different models, the batch size for each model, and the number of kanban cards needed were then determined. Employees were cross-trained for multiple tasks, allowing employees to "flex" between workstations as demanded by the flow of products and also allowing management to dynamically change the capacity along the production line. Employee's pay rates were based in part on the number of tasks they were trained to perform.

Employees were also trained to perform quality inspectors at each process, limiting the number of defects that were passed down the line. Raw materials storage areas were created at multiple locations near the production line, so that materials needed at each workstation were located very close to that station. These storage areas are frequently replenished from the main warehouse by materials handlers using a two-bin kanban system.

The results have been dramatic. IPS has experienced a 40 percent reduction in manufacturing space, even after two new models were introduced. Finished-goods inventory has been substantially reduced, with a goal of working toward zero finished-goods inventory with all products produced to order. Rework for special configurations has effectively been eliminated, because custom-ordered printers are initially built as ordered. Raw materials in the warehouse have been reduced, as IPS has worked to standardize the materials used and has worked with its suppliers to improve the quality of

materials and have more frequent deliveries of smaller orders. IPS is now dedicated to continuous improvement of its operations.

Questions:

1) What are the reasons that compelled IPS to change its production method? (6 marks)
2) Enumerate the changes carried out by IPS to shift to JIT production. (6 marks)
3) What were the benefits enjoyed by IPS after shifting to JIT system of operation.(8 marks)

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