

INDIAN INSTITUTE OF MATERIALS MANAGEMENT
Post Graduate Diploma in Materials Management

PAPER 16
BUSINESS STRATEGIES & WORLD CLASS PRACTICES

Date: 13.06.2009
Time: 2.00pm To 5.00pm

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. Total Marks : 32
3. In Part B answer 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

Q1. State whether the following statements are true or false

1. Toyato Production System is a "PUSH" Method
2. "KANBAN" Cards Indicate the process planning for production
3. "Production Levelling" refers to balancing labour force
4. JIT Systems aims at Zero inventory
5. The batch size in JIT System refers to one
6. "SMED" refers to "Simple Method Elimination of Defect"
7. MRP-II refers to the "Materials Requirement Planning".
8. TPM refers to "Total Project Management"

Q2. Column A has 10 statements. Please identify if they are True or False. Column B has 20 statements. These contain the justifications for your 10 answers of True or False. Match the justification from Column B to your answer in Column A.

COLUMN A	COLUMN B
	(....because)
1) The JIT philosophy does not mean zero inventory	a) it is not possible to achieve zero inventory
2) In TPM, the Maintenance department is solely responsible for maintenance.	b) it triggers what is to be produced and when
3) Supplier Certification of Quality helps in achieving World Class Manufacturing	c) even production workers have a role in maintenance
4) When we say TQM, we are talking about product quality	d) non-routine activities cannot be improved
5) Closed Loop MRP is said to be MRP II	e) it puts us at the mercy of the supplier
6) ISO 9000 series ensures Quality	f) it helps achieve the objectivities of the Quality, Cost and Delivery time
	g) it is a philosophy of continuous step-by-step improvement

7) KAIZEN can only be done in daily routine operational activities	h) only maintenance department personnel have got the requisite skills
8) KANBAN is a way of information flow	i) it aims for customer delight through improvements in product, processes & services
9) Pull System mean production is according to forecasts.	j) it actually means to reduce waste in any form
10) Business Process Reengineering means current processes are continued with improved effectiveness and efficiency	k) it controls inventory
	l) the goal is to do the right thing
	m) it plans and monitors material and capacity requirements
	n) it does not integrate financial plans
	o) the European countries insist on it
	p) it ensures only system standardization
	q) that what customers want
	r) forecasting is important
	s) production is according to actual demand
	t) effectiveness and efficiency are the goals of management

Q3. Expand the following

- | | |
|-------------|------------|
| i) MBNQA | ii) PERT |
| iii) MRP II | iv) SMED |
| v) TQM | vi) BOM |
| vii) TPM | viii) CAPP |

Q4. Match A and B

	A		B
i)	Off-line quality engineering	A	Deming
ii)	Kanban	B	Shewart
iii)	Network of entities production tool	C	Lean
iv)	Successive inspection	D	Porter
v)	Continuous improvement	E	Taguchi
vi)	Value chain	F	Supply
vii)	Theory of knowledge	G	Shingo
viii)	PDSA	H	Kaizen

PART-B

- Q5.** What is world-class manufacturing? Why is top management commitment necessary for the implementation?
- Q6.** What are the issues in strategic planning for world class manufacturing?
- Q7.** Describe TQM and say how can this be implemented in practice. How is TQM different from the TQC and SPC?.
- Q8.** What is Bench Marking? Describe the different types of Bench Marking. One can say that Bench Marking policy means the organizations always a follower of **other** successful organizations. Debate this Statement.
- Q9.** Describe **any one** of the following: MRP or MRP-II or ERP. On what aspects does each differ from the other?
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Q10.

PART – C Case study

The wholly owned subsidiary of Toyota – TMM Plant in Long Beach, California. It covered all areas of manufacturing from initial stamping of steel to final assembly, painting and shipping of four models of Truck beds, four Toyota light trucks, with an annual production capacity of 1,50,000 units in 1985. The plant employed 375 people, production area of 3,00,000 Sft in 14 buildings. The plant employed computer controlled truck bed framing fixture, for difficult welds and monitors quality of welding.

The need for improved system was recognized and decision to implement JIT was taken. It took several months to train and convince that JIT is “the way of life”. The implementation started in the assembly area, expanded to other functions as well as selected suppliers. The task force had to modify the procedures several times and retrain the workers. While MRP is used for overall production planning, KANBAN was the primary source for shop floor control. The Kanbans are used to trigger different operations or to order the raw material parts/components. The Kanbans are placed on hooks stationed at the entrance of each area. Kanbans circulate between the supplier and the warehouse, then the press departments etc.

An attempt was made to reduce the number of Kanbans each month in order to drive down constantly the in-process inventory and to increase the inventory cycles. The objective was to reduce the lot sizes to one, and work-in-process inventory to zero. Visual Control were provided wherever possible. A buzzer is used to indicate a problem or a failure in a function. A board provides information on the rescheduled due actual production, as well as reason for variance-to provide feedback and awareness to workers. TMM achieved many benefits of JIT implementation –

- i) Reduction of inventory and work-in-process resulted in major reduction in carrying and handling costs. The average WIP was reduced by about 45% and inventory by 24% in one year.
- ii) As the overloaded buildings began emptying many hidden problems in handling and moving of material surfaced. The warehouse was re-organized and additional space was utilized for other productive purposes. About 30% number of Forklifts were eliminated.

- iii) In production areas, the number of presses was reduced by 30%, with 20% reduction in labour. Production volume/shifts was increased by 40% in less than 2 years.
- iv) The most noticeable improvements were in workers attitudes and awareness. The workers were constantly encouraged to discover problems and fix them. The labour turnover and inter departmental conflicts diminished.
- v) With improvements in outgoing products quality, the warranty costs and replacements parts reduced substantially.
- vi) JIT environment provided a framework for problem solving and team work, resulting in better worker attitude. Most improvements were effected without any major investment on automation.

Give your critical comments and observations.
