



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

Post Graduate Diploma in Materials Management - 2 years

June 2023

PAPER No.17 (enrolment code –CPM)

PAPER No. 15 (enrolment code- PMM)

World Class Manufacturing

Date : 21.06.2023

Time : 10.00 a.m to 1.00 p.m.

Max. Marks : 70

Duration : 3 Hrs.

Instructions:

1. From Part A – answer all questions (compulsory). Each sub questions carries 1 mark. **Total : 20 Marks**
2. From Part B – Answer any 3 questions out of 5 questions. Each question carries 10 marks. **Total :30 Marks**
3. Part C is a case study (compulsory) with questions. Read the carefully and answer the questions **Total: 20 Marks**

Part – A

[20 Marks]

Q.1. Select appropriate answer [5 marks]

1. Concept of world class manufacturing includes
(a) Zero defects (b) Zero waste (c)Zero Stock (d)All of the above
2. When products and process do not change it is best manufacturing strategy to opt for is
(a) Customization (b) Innovation (c)Advertisement (d) Mass production
3. World class manufacturing challenges include
(a) Time (b) Flexibility (c)Knowledge (d) All of the above
4. Which of the following factor is a pillar of world manufacturing
(a)Cost Deployment (b)Inventory (c)competition (d)All of the above
5. Which among these is not a Statistical Process Control tool
(a)Control Chart (b) Check Sheet (c) Histogram (d) Kan Ban

Q. 2 Fill in the blanks [5 marks]

1. _____ helps in reducing the set-up time of dies
2. Schonberger's framework of world class manufacturing is _____
3. Value chain concept was introduced by _____
4. One of the important processes of quality control in world class manufacturing is the _____
5. _____ is the process of mistake proofing of devices

Q. 3 Mention True or False[5 marks]

1. Cellular manufacturing refers to the manufacturing of cell phones
2. Lean manufacturing is a method of reducing production time to increase production
3. Mura refers to the overburdening of the machine, persons that results in system breakdown
4. Statistical Process Control method of quality control is preferred over inspection
5. Fishbone diagram is one of the methods of value engineering

Q.4. Match the following [5 marks]

COLUMN A		COLUMN B	
Sr.No.		Sr. No.	
1	Control Chart	A	Tool of lean manufacturing
2	80 / 20 rule	B	Sort
3	Kan Ban	C	To monitor process change
4	Seri	D	Computer aided process planning
5	CAPP	E	Pareto's Chart

PART-B

Write any three (3) of the following questions 10 marks each (30 Marks)

Q.5 (a) What are the factors that organization need to address in the global scenario? [5 marks]

(b) Explain the principles of World class manufacturing[5 marks]

Q.6 (a) What is Malcolm Baldrige National Quality Award? What are the pillars of this award? [5 marks]

(b) Explain Dr. Shiegeo Shingho's concept of quality control[5 marks]

Q.7 (a) How should organizations of the information age be structured in order to be competitive? [5 marks]

(b) Explain the business characteristics of the industrial age and the information age [5 marks]

Q. 8 (a) What do you understand by cellular manufacturing systems? What are the advantages? [5 marks]

(b) Explain the concept of value chain by Porter with the help of a diagram. [5 marks]

Q. 9 What are the best practices in world class manufacturing. Explain each of them [10 marks]

PART- C(Compulsory)

(20 marks)

Q 10. Read the case study carefully and answer the questions given at the end

M/s East West corporation is an ancillary for a very competitive and large business corporation M/s XYZ. M/s East west has been with M/s XYZ for more than two decades. M/s East West have managed the requirement in manufacturing and technology requirement to the best of their knowledge and ability. M/s XYZ corporation has been facing severe competition due to which they have been forced to reduce the selling price. This reduction in price affected M/s East West corporation as well. In order to address the challenge M/s East West has hired you as their consultant. Your scope of activities will be to chalk out an action plan for cost reduction and draw up a long-term strategy for continued improvements. Your observations on your visit to the manufacturing unit are as below. Based on these observations and the discussion you had with the management of M/s East West suggest methods for them to address the challenge and deliver a strategy for continuous improvement

The shop floor of the organization was littered with all kinds of materials and the workers had to spend excessive time in identifying and locating the material required. This disorganized state of materials gave raise to excess inventory, required inventory not available at the right time.This increased the manufacturing time and frequently customers' orders were delayed.

Though the complexity of the manufacturing had gone up the organization was still using the drawing board and draughtsman to make the drawings frequently leading to inconsistencies and errors in drawings. These errors showed up in manufacturing and subsequently rejections

The organization depended on inspection to ensure quality of the manufactured products. They were not familiar with methods used to identify root cause of failures and rejections and methods available to ensure the non-repetition of mistakes and failures. Customer's complaint has seen an increase in the recent times

The company believed on managing the orders as they come in and did not spare effort to plan for the future. They did not have a comprehensive plan for improving the operations in the organization. As a consultant advise M/s East West corporation on the role and options for the future

Questions:

1. What are the options available to organize the shop floor? What kind of methods should be implemented to keep the work place in an organized manner?
2. What techniques and methods are available to handle the complexities in manufacturing?
3. How should the organization change its quality control policy in order to eliminate rejections? What are these methods
4. What approach will be best suited if the company were to sustain and embark on a long term approach for the future?