



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

**Post Graduate Diploma in Logistics & SCM
Post Graduate Diploma in Materials Management - 2 years**

JUNE 2025

PAPER NO. 15 (enrollment code - PMM, CMM)

WORLD CLASS MANUFACTURING

Date : 25.06.2025

Time : 10.00 a.m to 1.00 p.m

Max. Marks: 70

Duration : 3 Hrs.

Instructions:

1. Part A, contains 4 main questions (with 5 sub-questions) each question carries 1 mark - Total 20 marks
2. 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. Read the case carefully and answer the questions - Total 20 marks

PART – A

(20X1= 20 Marks)

(Compulsory - Attempt all questions each question carries 1 mark)

Q.1 Select the right answer

[5 marks]

1. One of the manufacturing strategies followed by manufacturing organizations
(a) Mass Customization (b) Continuous improvement (c) Innovation (d) All of these
2. _____ is a systematic philosophy for ensuring optimum workplace productivity
(a) Kanban (b) 5S (c) JIT (d) SCM
3. _____ is required in a manufacturing process where the product and process change frequently
(a) Agile manufacturing (b) Poka-yoke (c) Innovation (d) Control chart
4. Mistake proofing in the manufacturing process is called as
(a) Poka-Yoke (b) SMED (c) VUCA (d) None of these
5. _____ manufacturing can accommodate multiple product design, mixes and production volumes
(a) Cellular (b) Flexible. (c) Assembly (d) Job shop

Q.2 Fill in the blanks

[5 marks]

1. _____ is the chart that indicates the changes in the process over time
2. Ohno's perspective of world class manufacturing is the time reduction from _____
3. _____ is the method of ensuring safety and quality through well maintained machines
4. According to _____ WCM is the process of continual and rapid improvement
5. _____ is designed to run a batch quantity of production and automatically switch to another batch

Q.3 Mention True or False

[5 marks]

1. In a flexible manufacturing system multiple operations can be carried out simultaneously
2. Single minute exchange of dies (SMED) is a process followed to reduce the set-up time of dies
3. Edward Demming's cycle is the PDCA cycle
4. JIT refers to the reduction of production and process time from suppliers to customers
5. Material flow management is one of the principles of WCM

Q.4 Match The following**[5 marks]**

COLUMN A		COLUMN B	
Sr. No.		Sr. No.	
1	Cause and effect diagram	A	Cellular manufacturing
2	Kaizen	B	Computer integrated manufacturing
3	Reduced cycle time	C	Decision support system
4	Gunn model of WCM	D	Ishikawa diagram
5	Enterprise resource planning	E	Continuous improvement

PART - B**[Total 30 marks]****Answer any THREE out of the following five questions:**

Q5. (a) Name the principles of world class manufacturing **[5 marks]**
 (b) What are the steps in the development of the manufacturing strategy? **[5 marks]**

Q6. (a) Name the six tools used in statistical process control. Explain each briefly **[5 marks]**
 (b) What is lean manufacturing? Name the five principles of lean manufacturing? **[5 marks]**

Q7. (a) What is value chain analysis? Name the primary and secondary activities defined by Porter **[5 marks]**
 (b) What are the principles in the framework of value-added manufacturing **[5 marks]**

Q8. (a) Name the operation environment assumptions for an organization to compete in present age **[5 marks]**
 (b) Name and explain briefly the pillars of world class manufacturing **[5 marks]**

Q9. (a) Explain briefly all the best practices that are followed in world class manufacturing **[10 marks]**

PART - C**[Total: 20 Marks]****Q.10****CASE STUDY (Compulsory)**

Mr. Shyam is the owner of a world class manufacturing facility. This facility caters to multiple customers, who are loyal, with varying job requirements. He has been able to continuously grow and add customers due to the impeccable quality and deliveries maintained by him. Mr. Shyam ensured the accuracy and continuous operation of his machines following a systematic process. Mr. Shyam was mainly carrying out job work for all his customers. In order to expand his operations, he introduced CAD, CAE and similar technology in his factory. This technology helped him to analyze and identify the reason for the high level of rework in one of the assemblies. He introduced a new concept to identify the mistake immediately or just before it happened. This earned him accolades with his customer. Mr. Shyam started analyzing product 'X' to further bring down the defects. During this analysis he identified some cause effect relationships and this introduced him to another quality control tool. The exposure to new techniques and processes encouraged him to introduce one more new technique. He trained all his employees in this method to inculcate the culture of waste prevention at all stages of manufacturing.

As he introduced these new systems and processes the reputation of his organization spread across the industry. In addition to the reputation his profits also improved because of the elimination of waste

Questions:

1. What is the systematic process followed by Mr. Shyam for the upkeep of his machines? **[5 marks]**
2. What was the technique introduced to overcome the rework? **[5 marks]**
3. What is the tool identified by Mr. Shyam while analyzing product 'X' Explain its use. **[5 marks]**
4. What is the purpose of the new process that reduce the waste? **[5 marks]**