INDIAN INSTITUTE OF MATERIALS MANAGEMENT

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

DEC 2025

PAPER No. 19 a(Enrollment code PGMM, PGSM)

WORLD CLASS MANUFACTURING

Date :23.12.2025 **Max. Marks: 70**
Time : 2.00 p.m to 5.00 p.m **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. Manufacturing strategy best suited for Stable product change and stable process change is

(a) Mass job work *(b) Mass production* *(c) Mass Design* *(d) None of these*

2. World Class Manufacturing adopts many practices like

(a) Kaizen *(b) Cost reduction* *(c) Variety reduction* *(d) All of these*

3. Integrating the IT system of the organization provides many advantages like

(a) Structure reduction *(b) Hardware simplification* *(c) Boost in sales* *(d) All of these*

4. Activity Based Costing (ABC) is a procedure used to arrive at a precise method of

(a) Profit analysis *(b) Major expense identification* *(c) Product pricing* *(d) None of these*

5. The TOPP system is a generic questionnaire system used to collect information on areas that

(a) Have efficient operations *(b) Have financial control* *(c) Need improvement* *(d) Have good quality*

Q.2 Fill in the blanks **[5 marks]**

1. _____ represent the rate of occurrence of the data for easy interpretation
2. _____ is the final stage of the 5S of lean manufacturing
3. Total productive maintenance is one of the processes followed in _____
4. Focused improvement is one of the pillars of _____
5. Value added manufacturing concept is introduced by _____

Q.3 Mention True or False **[5 marks]**

1. LEED is an internationally recognized certification system for the promotion of green building
2. According to Porter inbound and outbound logistics are a part of the secondary activities
3. MRP II is the advanced version of Material Requirement Planning
4. Innovation in manufacturing is the result of Frequent product and process changes
5. According to JIT philosophy plant layout must facilitate “Flow” manufacturing

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

COLUMN A		COLUMN B	
Sr. No.		Sr. No.	
1	Fish bone diagram	A	Statistical process control
2	Shewhart cycle	B	Cause and effect relationship
3	Unified processing workstations	C	Plan-Do-Check-Act
4	Continual and Rapid improvement	D	Flexible manufacturing systems
5	Control chart	E	Schonberger's framework

PART - B

[Total 30 marks]

Answer any THREE out of the following five questions:

Q5. (a) Explain with a diagram the characteristic and objectives of World Class Manufacturing **[5 marks]**

(b) Information age has brought challenges for the manufacturing sector. What are the strategies that are relevant in the information age? **[5 marks]**

Q6. (a) Cross functional teams are formed to achieve a goal. Name the steps in formation of CFT. **[5 marks]**

(b) What is a balanced scorecard? What are its uses? Explain the balance scorecard **[5 marks]**

Q7. (a) What is the Ishikawa diagram. Draw it and explain the use of this process **[5 marks]**

(b) What are the technical and managerial pillars essential for achieving the best in WCM **[5 marks]**

Q8. (a) PO - P is a system to measure productivity. Explain the steps to use the PO – P system **[5 marks]**

(b) Explain with a diagram the characteristic and objectives of WCM **[5 marks]**

Q9. (a) Identify & explain management practices for optimizing the management processes **[5 marks]**

(b) Many management tools & techniques support manufacturing. Identify & explain briefly **[5 marks]**

PART - C

[Total: 20 Marks]

Q.10 **CASE STUDY (Compulsory)**

M/s Engineering Component Manufacturers (M/s ECM) are suppliers of components for a multitude of engineering industries. Recently there has been pressure to reduce cost from almost all the customers due to the intense competition. They analyzed and discussed on the various methods to reduce cost and finally decided on one method. This helped them to reduce cost as well as the cycle time. Demand from new and old customers were for more product varieties, flexible quantity and reduced cycle time. M/s ECM understood that this was possible only with computer aided manufacturing systems. They finally zeroed in on a manufacturing system that fully met their requirements. Implementation helped them to add product varieties and customers. Since the vision of M/s ECM was to setup a world class facility they were identifying opportunities for improvement. One area identified for improvement was the workplace. Organizing the workplace could lead to increased efficiency of operations. It was decided that all persons in the organization must undergo training in this area. In order to sustain the production and improve the integrity of production, well maintained equipment and smooth processes are required. M/s ECM appointed a new expert to ensure smooth operations of equipment and processes. All these improvements made helped them to achieve and run a WCM unit

Questions:

1. What is the method identified by M/s WCM to reduce cost. Explain the process **[5 marks]**
2. What system was identified by M/s ECM for flexibility. Explain the capabilities with a fig. **[5 marks]**
3. Identify & explain the system identified for organizing and improving workplace efficiency **[5 marks]**
4. Identify the procedure that will be implemented by the expert for smooth operations **[5 marks]**