INDIAN INSTITUTE OF MATERIALS MANAGEMENT

DEC 2023

Post Graduate Diploma in Materials Management - 2 years

PAPER No.17 ((enrolment code –CPM)
PAPER No. 15 (enrollment code - PMM, CMM) [OFFLINE EXAM]
WORLD CLASS MANUFACTURING

Date : 20.12.2023 **Max. Marks: 70**
Time : 10.00 a.m to 1.00 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. The value chain model was put forth by _____

(a) Haynes (b) Shigeo Shingo (c) Porter (d) Demmings

2. Mass customization is the preferred method of manufacturing when the product and process are ___

(a) Stable (b) Dynamic (c) Cyclic (d) Repetitive

3. _____ is the type of chart that shows the changes in process over a period of time

(a) Histogram (b) Frequency plot (c) Control chart (d) Pareto Chart

4. _____ is the method used to mistake proof an assembly and avoid accidental errors

(a) Kanban (b) Poka-yoke (c) Ishikawa diagram (d) All of these

5. Scatter diagram is a graphical plot to depict the _____ between two variables

(a) Graphical value (b) Relationship (c) Statistical value (d) None of these

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

1. Just-in-time is one of the best practices followed in _____
2. Management of uncertainty is one of the major challenges for business in the _____
3. Several tools are used by _____ to improve the manufacturing processes
4. Establishing pull is one of the steps in the _____ process
5. People development is one of the _____ of World Class Manufacturing

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

1. Route map to world class manufacturing is not one of the technical pillars of WCM
2. Customized products are the characteristics of economics for business in the information age
3. Value added manufacturing refers to the addition of value to the organization in the form of profit
4. Global manufacturers competing in local markets are Multinational companies
5. When an organization produces goods of higher quality it's productivity also improves

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

		COLUMN B	
Sr. No.		Sr. No.	
1	Dr. Shingo	A	Pillar of world class manufacturing
2	Environment and energy	B	Hall's framework
3	Over production – a waste	C	Porter's model
4	Support activities in WCM	D	Enterprise resource planning
5	Decision support system	E	Zero quality control

PART - B

[Total 30 marks]

Answer any THREE out of the following five questions:

Q5. (a) What is the environment in which organizations in information age compete with each other? **[5marks]**

(b) What are the strategic issues to be followed in order to be competitive in global environment? **[5marks]**

Q6. (a) Explain the process of lean manufacturing with a block diagram. **[5marks]**

(b) Explain the flexible manufacturing system with a diagram? **[5marks]**

Q7. (a) Explain briefly some of the SPC tools. Use diagrams were appropriate **[5marks]**

(b) What are the characteristics and objectives of world class manufacturing? **[5marks]**

Q8. (a) Explain some of the problems faced by the manufacturing industry? **[5marks]**

(b) What is the process for the development of manufacturing strategy? - Explain in brief**.** **[5marks]**

Q9. Explain briefly the 10 pillars of world class manufacturing. **[10marks]**

PART - C

[Total: 20 Marks]

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

Mr. Prakash is the owner of an industry making custom products for many customers. He started of as a small manufacturer and has grown into a little more than a medium scale manufacturer. He had been adding machineries (capacity) periodically to augment the needs for his customers. New customers are looking for new technology and this requires new machine tools. He has the resources required for making investments. The new products are required in large varieties and small to medium quantities.

He has embarked upon new activities like taking up design and engineering activities to support the manufacturing activities for his customers. He has decided that this activity will complement the new machining set up that is going to be installed.

Mr. Prakash is well aware that best machineries and facilities will not produce best products. He trained his shop floor personnel in process control to ensure zero defects. He decided to introduce the most basic form of process control in the shop floor after proper training.

Mr. Prakash wants to make sure that all the set up and practices that are implemented are sustained.

Questions:

1. What kind of investment would be suitable for this kind of requirement?
2. What kind of facility is going to be set-up for the design and engineering activities?
3. What is the simplest form of process control that is applicable for manufacturing?
4. What must be his approach to ensure the sustenance of his efforts?