



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

Post Graduate Diploma in Materials Management - 2 years

Dec 2022

PAPER No. 17 (enrolment code –CPM)

PAPER No. 15 (enrolment code- PMM)

World Class Manufacturing

Date : 22.12.2022

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

Max. Marks : 70

Duration : 3 Hrs.

Instructions:

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

Part – A

[20 Marks]

Q.1. Select appropriate answer

[5 marks]

1.1. Lean manufacturing is referred to

- (a) Value added manufacturing (b)Value engineering (c)Value analysis (d)none

1.2. Six sigma was introduced by Bill Smith, at Motorola in the year

- (a)1996 (b) 1986 (c)1984 (d) 1975

1.3.The process which eliminates restrictions at national boundaries, integrates and connect people at global level

- (a)Globalization (b) Integration (c)world class (d) None of these

1.4. Poke Yoke meaning

- (a) fool proofing (b)SPC tool (c)value stream mapping (d)Control chart

1.5.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]

- SCATTER diagram is also known as _____
- CNC machines provide a mix of _____ repeatability, speed and flexibility
- SMED is a lean tool means _____
- CAPP means, _____,
- According to Schonberger, the objective of WCM is a continual and _____ improvement

Q. 3 Mention True or False

[5 marks]

- There are ten pillars of MBNQA which are also known as Baldrige criteria for performance excellence
- Maskell's model advocates about redesign of shopfloor layout for minimizing movement
- In the global mfg. environment, time-based competition becomes highest priority for responsiveness
- Domestic companies are forced to compete with world class brands due to globalization
- The transformation of India's Mfg. sector has made India emerge as one the fastest growing economy

Q.4. Match the following

[5 marks]

COLUMN A		COLUMN B	
Sr.No.		Sr. No.	
1	Mr. Ohno	A	PDCA
2	Mr. Deming	B	Mr. Shingo & Mr. Ohno
3	JIT	C	WCM (Order to cash Cycle reduction)
4	Visual control	D	Material flow
5	Kanban	E	Problem eradication

PART-B

(30 Marks)

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

Q.5 a) What is the concept / principles of the world class Manufacturing. (5 Marks)

b) Explain Ohno's view on world class manufacturing (5 Marks)

Q.6 a) Describe globalization and international business. (5 Marks)

b) State manufacturing challenges to meet international competition. (5 Marks)

Q.7(a) Describe Hall's framework in achieving waste reduction (5 Marks)

b) Explain value added manufacturing. (5 Marks)

Q. 8(a)How to accomplish world class manufacturing? (5 Marks)

(b) how lean manufacturing will help in reaching global standards (5 Marks)

Q. 9(a) Explain the information management tools [10 marks]

(b)list the difference between ERP and SCM [10 marks]

PART- C(Compulsory)

(20 marks)

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

One of the clients of PALMS (a consulting firm), Excel Enterprises, faced issues related to UV light curing equipment that they are manufacturing. Issues are defective or machine not working. Workers not following the instructions. Excel enterprises used to manufacture products at a pace which would not meet the sales forecast. Senior management had suggested to increase the manpower to meet the demand. Quality defects were high and also WIP inventory levels also high beyond the estimated levels

Top management decided to take help from PALMS, the premier consulting firm in the area of Lean Manufacturing

PALMS suggested implementation of lean manufacturing and developed a set of standard operating procedures (SOP) to ensure quality and enhance productivity. They identified various MUDA , MURI and MURA in all the associated areas of manufacturing.

5S introduced in all the departments and Statistical Process control introduced for quality improvements, Total Productive maintenance introduced throughout the plant. JIT , Milk van concept and KANBAN introduced to control WIP and Finished goods stocks. Cellular layout introduced for the smooth production with improved "takt time"

The positive outcome of implementing lean was shared with other stakeholders like Vendors and ancillary units

Excel enterprises increased the production 4 times with existing manpower and quality problems solved

Questions:

1. What was the problem faced by Excel Enterprises
2. Please elaborate on 5S and KANBAN
3. Briefly explain the countermeasures suggested by the consulting firm
4. What is the impact of inventory on the profitability of the organisation
5. Results of implementing lean
