



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

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

PAPER No.14 (enrolment code –CPM, CPS)

PAPER No. 12 (enrolment code- PMM, PSM)

Inventory Management

Dec 2022

Date : 19.12.2022
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]

(Attempt all questions. Each sub question carries 1 mark.)

Q.1 State whether the following statements are True or false. (5 Marks)

- Price per unit is the criteria for ABC analysis
- EOQ is that quantity at which price paid by the buyer is minimum.
- Service level of 95% implies stock out level of 5%.
- Re order level of an item is always more than its min stock
- Nonmoving items should be excluded from ABC analysis.

Q.2 Fill in the blanks (Do not reproduce the Statement) : (5 Marks)

- Lead time for items manufactured at the home plant is usually-----than the lead time of similar items when purchased.
- Value analysis for C class items is usually _____
- Classification of items on the basis of their capital lock up is called-----
- EOQ decreases when the cost of an item-----
- _____is used where the final product is complex with several levels of assembly

Q.3 Expand the following (5 Marks)

- a) S&OP b) SOS c) ASN d)LTL e) SKU

Q.4. Match the following (5 Marks)

| Column A | | Column B | |
|----------|-----------------------|----------|--------------------------------|
| Sr no | Description | | Description |
| 1 | Follow up cost | A | Forecasting methods |
| 2 | HML analysis | B | Selective control of inventory |
| 3 | Exponential smoothing | C | Stock out cost |
| 4 | Pareto Analysis | D | Price of Items |
| 5 | Premium freight | E | Ordering cost |

PART B**[30 marks]****(Attempt any 3. Each question carries 10 marks)**

Q.5 Assume there are 2 companies A & B. They purchase same kind of item in same quantity and price in their store and also opening inventory in quantity and value and value & quantity of procurement is same for both the companies. Both the companies sell same quantity and same in monetary terms. One company A follows FIFO other company B follows LIFO method then justify with logic.

- Which company will have lower closing inventory at the end of the accounting year during inflation and why? Answer with logic **(5 Marks)**
- If there is inflation throughout in that financial year, then which company will be better off financially with their profit after tax? Answer with logic. **(5 Marks)**

Q.6 a) The forecast demand of an item for 8 periods are given as below.

| | | | | | | | | |
|-----------------|----|----|----|----|----|----|----|----|
| Period | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Forecast demand | 20 | 30 | 25 | 25 | 30 | 20 | 25 | 30 |

If supply is fixed at 25 units per period & the stock at hand at the beginning of the period 1 is 15 units, what is the projected inventory at the end of the period 8 ? **(5 Marks)**

- Economic order quantity in Rs value of an item X is 3 times that of Y. If the annual usage of item Y is Rs 800, what will be the annual usage of item X? **(5 Marks)**

Q.7 a) Explain in brief the working of perpetual inventory system. (5 Marks)

- What are the salient features of barcode inventory system and RFID Inventory system **(5 Marks)**

Q.8 a) Explain the salient features of JIT (5 Marks)

- Explain in brief the difference between inventory turnover rate and stock out rate. **(5 Marks)**

Q.9 Write short notes on any two (2X5=10 marks)

- Aggregate planning
- Independent demand
- Ordering cost
- Retail shrinkage
- Reverse logistics

PART C**[20 marks]**

Q. 10. Case study – Compulsory

A manufacturer of hand grinder requires a special roller bearing at the rate of 300 nos per year. Each bearing costs the company Rs 36. The procurement costs and inventory carrying costs have been calculated at Rs30 and 20% respectively.

The supplier is interested in offering a discount of Rs 2 per bearing on an order of 200 and above:

Questions:

- Calculate EOQ
- Calculate annual Ordering cost at EOQ
- Calculate Annual Material cost at EOQ Purchase
- Calculate Annual material cost if you decide to avail quantity discount.
- Should higher quantity be purchased in view of quantity discount offered by the supplier.. answer with facts and figure..