

## IMT- 23

# INVENTORY CONTROL MANAGEMENT

### Notes:

- Write answers in your own words as far as possible and refrain from copying from the text books/handouts.
- Answers of I<sup>st</sup> Set (Part-A), II<sup>nd</sup> Set (Part-B), III<sup>rd</sup> Set (Part – C) and Set-IV<sup>th</sup> (Case Study) must be sent together.
- Submit the assignments in IMT CDL H.O. along with the assignments Question Papers for evaluation .
- Only hand written assignments shall be accepted.

#### A. First Set of Assignments

5 Questions, each question carries 1.5 marks.

#### B. Second Set of Assignments

5 Questions, each question carries 1.5 marks.

#### C. Third Set of Assignments

5 Questions, each question carries 1.5 marks. Confine your answers to 150 to 200 Words.

#### D. Forth Set of Assignments

Two Case Studies : 7.5 Marks. Each case study carries 3.75 marks.

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### SECTION - A

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- What are the different types of inventory? Why they are maintained?
- Explain different methods of demand forecasting.
- What is material planning? How do you manage independent demand in inventory control?
- Explain ABC analysis. What are its advantages and limitations?
- Explain the following terms in inventory control management:
  - Lead time
  - Re-order point
  - Safety stock
  - Buffer stock.

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### SECTION - B

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- What are the costs associated with inventory? Distinguish between deterministic and stochastic models in inventory theory.
- What is economic order quantity (EOQ)? Explain the EOQ model of inventory with its simplifying assumptions.
- Explain the three strategies used in aggregate planning to manage supply.
- "It is cheaper to have more raw materials or work-in-progress than finished goods in the supply chain." Explain this statement
- Give short description on the following:
  - Response Time.
  - Inventory Order Actions.
  - Bill of Materials.
  - Product Structure.

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### SECTION - C

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- Explain the different types of demand forecasting? Differentiate between validation and verification.
- Differentiate in brief between MRP-I and MRP-II. What are the principles of their operation?

3. What is non-productive finished goods inventory? How can one reduce the non-productive component of finished goods inventory?
4. What is a JIT system? Briefly explain single card Kanban system.
5. Discuss classification models. How would you use classification models to determine your spare parts stocking decision?
6. Define standardization. What are the different types of standards that have evolved over time? What are differences between these standard types?

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### **CASE STUDY - 1**

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ABC Ltd. has to supply his customers 1000 units of his product per year. Shortages are not allowed and the inventory carrying cost amount to Rs.12 per unit per year. The setup cost per run is Rs.200. Find:

- (a) The Economic Order Quantity
- (b) The optimum number of orders per year
- (c) The optimum period of supply per optimum order
- (d) The minimum average yearly cost
- (e) The increase in the total cost associated with ordering 25 percent more than EOQ.

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### **CASE STUDY - 2**

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A supply chain has two members, one buyer and other is seller. The buyer needs 10000 units of an item per year. The buyer's ordering cost is Rs.450 per order. The buyer's holding cost is Rs.100 per unit per year. The seller sets up a production run and produces the buyer's EOQ and dispatches it. His setup cost is Rs.2750. The seller does not hold any inventory. Calculate:

- (i) If the two operate independently, what are the buyer's inventory costs, and
- (ii) If they join together and operate as one unit, what will be the total system cost?