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CHAPTER NO. 4 : INVENTORY MANAGEMENT

Points to be discussed

- Introduction
- Costs involved in case of inventory
- Economic Order Quantity
- Stock Levels
- ABC Technique of Managing inventory

→ Introduction

Lower inventory : Chances of stock out situation

Higher inventory : Higher storage cost / opportunity cost.

→ Types of costs involved in inventory

Purchase cost

Calculation

= No. of units purchased × cost per unit.

Ordering cost

Calculation

= No of orders × ordering cost per order

$$\text{No. of orders} = \frac{\text{Annual Requirement}}{\text{ordering quantity}}$$

Holding cost / storage cost / interest cost

Calculation

$$= \frac{1}{2} \times \text{ordering quantity} \times \text{carrying cost per unit per annum}$$

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Relationship between ordering cost and carrying cost

↑ ordering cost ⟶ ↓ carrying cost

↓ ordering cost ⟶ ↑ carrying cost

INVERSE RELATIONSHIP

→ **Economic order Quantity**

How much quantity should be ordered by a firm ?

Model developed by Harris Wilson and hence, also called as WILSON EOQ MODEL

Formula :

$$EOQ = \sqrt{\frac{2 \times A \times O}{C \cdot C \cdot p \cup p \cdot a}}$$

where —

EOQ = Economic order Quantity
A = Annual requirement
O = ordering cost per order
CCpupa = carrying cost per unit per annum

At EOQ, Total ordering cost and Total carrying cost will be the same. Also, at EOQ, the Total of ordering cost and carrying cost will be the LEAST.

→ Stock Levels

Reorder Level	Minimum Level	Maximum Level	Average Level	Danger Level
At what no of units should an order be placed ?	Minimum stock maintained by a firm	Maximum stock maintained by a firm	Average stock maintained by a firm	Stock level going below the minimum level.

Formulae :

1. Reorder Level

$$= \left[\text{Maximum consumption} \times \text{Maximum Lead Time}\right] + \text{Safety stock}$$

2. Minimum Level

$$= \text{Re-order level} - \left[\text{Average consumption} \times \text{Average Lead Time}\right]$$

3. Maximum Level

$$= \text{Re-order level} + \text{Re-order Quantity} - \left[\text{Minimum consumption} \times \text{Minimum Lead Time}\right]$$

4 Average Level

$$= \text{Minimum stock level} + \left[\frac{1}{2} \times \text{Re-order Quantity}\right]$$

5. Danger Level

= Average consumption x Lead time for Emergency purposes

→ **ABC Technique of Inventory Control**

A category	High value	Low in no.	Special control
B category	Moderate value	Moderate no.	Normal control
C category	Low value	High in no.	Minimum control