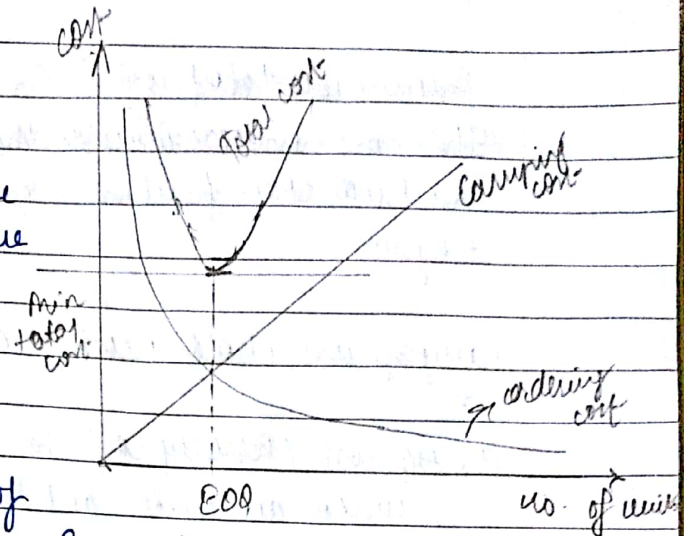


Inventory control

- The inventory means a stock of any kind of resource having an economic value that fulfil the present and future needs of an organization.



- It is physically the stock of goods kept for future use. In a factory the inventory may be in the form of raw materials, parts, semi-finished goods etc.
- Inventory also includes furniture and machinery.

Inventory control is the process of deciding: what & how much of various items are to be kept in the stock.

It also determines the time & quantity of various items to be purchased. The basic objective of inventory control is to reduce investment in inventories and ensuring that production process does not suffer at the same time.

Basic decision points:

- How much to order?
- When should the order be placed?

→ Determine the economic order quantity (EOQ) by minimizing the total inventory cost.

fixed ← Total inventory cost depends upon:
Purchase cost + carrying cost + Ordering cost (setup cost) + shortage cost
→ represented by C_3

Variable cost (variable portion of inventory cost)
= Ordering cost + Carrying cost + shortage cost

Ordering cost (setup cost) - C_3 : \rightarrow for all items together

This cost associated with ordering of raw materials for production purpose. Ex - Rent, telephone, telegram

Carrying cost (holding cost - C_1) : \rightarrow represented for per unit cost

Shortage cost (Penalty cost - for running out of stock - C_2)
i.e., when an item can't be supplied on the customer demand.

- Loss of money
- Loss of goodwill (loyal customers will go elsewhere)

Demand

It refers to the no. of units required per period.

Demand may 2 patterns-

• Deterministic pattern - Demand is exactly known.

• Probabilistic pattern - Not known from before.

Lead time - The time gap b/w placing an order and its actual arrival in the inventory.

Order cycle - The time period b/w placement of two successive orders is referred to as the order cycle.

Re-order level - The level b/w max & min stock at which purchasing activity must start.

The inventory problem in which demand is assumed to be fixed & completely predetermined are usually referred to as the lot size problem.