CLASS 9

ADVANTAGES OF ECONOMIC ORDER QUANTITY (EOQ) MODEL

The advantages of the EOQ model are summarized as follows:

(i) **Minimizes Total Inventory Cost**

EOQ determines the optimal order quantity that minimizes the combined total of ordering costs and carrying (holding) costs.

(ii) **Provides a Scientific Basis for Inventory Decisions**

It replaces guesswork with a mathematical formula, ensuring rational and objective decision-making.

(iii)**Balances Ordering and Holding Costs**

The model identifies the exact point where ordering cost equals carrying cost, achieving cost equilibrium.

(iv)**Ensures Optimal Use of Storage Space**

By avoiding excessive stock levels, EOQ helps prevent overcrowding and inefficient warehouse utilization.

(v) **Improves Working Capital Efficiency**

It prevents unnecessary funds from being tied up in excess inventory, leading to better capital management.

(vi) **Reduces Risk of Inventory Obsolescence and Deterioration**

Optimal order quantities lower the chances of spoilage, damage, or products becoming outdated.

(vii) **Facilitates Better Purchase Planning**

EOQ helps management determine a consistent and systematic order size for regular procurement.

(viii) **Simplifies Cost Control**

Since ordering frequency and quantity are predetermined, monitoring and controlling inventory-related costs becomes easier.

(ix) **Applicable to Production and Purchasing**

The model can be used both for raw material purchasing and for determining optimal production lot sizes.

(x) **Forms the Basis for Advanced Inventory Models**

EOQ serves as a foundational concept for more complex inventory control techniques and systems.

LIMITATIONS OF ECONOMIC ORDER QUANTITY (EOQ) MODEL

The limitations of the EOQ model are summarized as follows:

i. **Assumes Constant and Known Demand**

The model is based on the assumption that demand remains uniform and predictable throughout the period.

ii. **Assumes Constant and Known Lead Time**

It presumes that the time between placing and receiving an order does not vary.

iii. **Assumes Constant Ordering Cost**

EOQ assumes ordering cost per order remains fixed regardless of order size or frequency.

iv. **Assumes Constant Holding (Carrying) Cost per Unit**

The model treats holding cost per unit as stable, though in practice storage and financing costs may fluctuate.

v. **Ignores Quantity Discount Opportunities**

The basic EOQ formula does not account for price reductions available for bulk purchases.

vi. **Does Not Consider Demand Variability**

The model does not incorporate uncertainty or fluctuations in demand unless modified.

vii. **Assumes No Shortages or Stockouts**

Traditional EOQ does not allow for planned shortages or backordering situations.

viii. **Assumes Instantaneous Replenishment**

It assumes that the entire order quantity arrives at once, which may not apply in gradual production systems.

ix. **Independent Item Analysis**

EOQ treats each inventory item separately and does not consider constraints like limited capital, space, or interrelated demand.

x. **Static in Nature**

The model does not automatically adjust to changes in cost structures, demand patterns, or business conditions unless recalculated.