CLASS 11

Purpose of A-B-C Analysis:

The objective of carrying out A-B-C analysis is to develop policy guidelines for selective control. Normally, once A-B-C analysis has been done, the following broad policy guidelines can be established in respect of each category:

Table: Broad Policy Guidelines for the Control of Items as Per A-B-C Classification

A Items **High Consumption Value**	**B Items** **Moderate Consumption Value**	**C Items** **Low Consumption Value**
Very strict control	Moderate control	Lose control
No safety stocks (or very low)	Low safety stocks	High safety stocks
Frequent ordering or weekly deliveries	Once in three month	Bulk ordering once in six months
Weekly control statements	Monthly control reports	Quarterly control reports
Maximum follow-up and expediting	Periodic follow-up	Follow-up and expediting in exceptional cases
Rigorous value analysis	Moderate value analysis	Minimum value analysis
As many sources as possible for each item	Two or more reliable sources	Two reliable sources for each item
Accurate forecasts in materials planning	Estimates based on past data on present plans	Rough estimates for planning
Minimization of waste, obsolete and surplus (review every 15 days)	Quarterly control over surplus and obsolete items	Annual review ova surplus and obsolete material
Individual postings	Small group postings	Group postings
Central purchasing and storing	Combination purchasing	Decentralized purchasing
Maximum efforts to reduce lead time	Moderate clerical efforts	Minimum clerical efforts
Must be handled by senior officers	Can be handled by middle management	Can be fully delegated

Question 3:

A company has 5 inventory items with the following annual consumption values:

Item	Annual Consumption (Units)	Unit Cost (Rs)
P	200	50
Q	500	10
R	100	100
S	1000	2
T	300	20

Tasks:

i) Calculate the **annual consumption value** for each item.
ii) Arrange the items in **descending order of consumption value**.
iii) Calculate the **percentage of total consumption value** for each item.
iv) Classify the items into **A, B, and C categories** based on the standard ABC analysis principle (approximately 70% of value → A items, next 20% → B items, remaining 10% → C items).
v) Suggest which items the company should focus most on for inventory control.

Solution 3:

Given that a company has 5 inventory items with the following inventory data:

Item	Annual Consumption (Units)	Unit Cost (Rs)
P	200	50
Q	500	10
R	100	100
S	1000	2
T	300	20

Step 1: We compute Annual Consumption Value (ACV)

ACV= Annual Usage × Unit Cost

Item	Annual Consumption (Units)	Unit Cost (Rs)	ACV (Rs)
P	200	50	$200 \times 50 = 10{,}000$
Q	500	10	$500 \times 10 = 5000$
R	100	100	$100 \times 100 = 10000$
S	1000	2	$1000 \times 2 = 2000$
T	300	20	$300 \times 20 = 6000$

Step 2: We arrange the items in descending order of ACV as follows:

Item	ACV (Rs)
P	10,000
R	10,000
T	6000
Q	5000
S	2000

Step 3: We first calculate the total ACV and then calculate the percentage of Total Consumption Value

Total ACV= $(10{,}000 + 10{,}000 + 6000 + 5000 + 2000) = 33{,}000$ Rs

Now, we use the formula for the percentage of total consumption value:

Percentage (%) of the total ACV= $\left(\frac{\text{AVC of the item}}{\text{Total AVC}} \times 100\right)\%$

Item	ACV (Rs)	Percentage (%) of the total ACV
P	10,000	$\left(\frac{10{,}000}{33{,}000} \times 100\right)\% = 30.3\%$
R	10,000	$\left(\frac{10{,}000}{33{,}000} \times 100\right)\% = 30.3\%$
T	6000	$\left(\frac{6000}{33{,}000} \times 100\right)\% = 18.2\%$
Q	5000	$\left(\frac{5000}{33{,}000} \times 100\right)\% = 15.2\%$
S	2000	$\left(\frac{2000}{33{,}000} \times 100\right)\% = 6.1\%$

Step 4: We classify Items into A, B, and C Categories as follows:

- **A items:** High-value items contributing ~70–80% of the total ACV → P, R, T (30.3 + 30.3 + 18.2 ≈ 78.8%).
- **B items:** Moderate-value items contributing next ~15–20% of the total ACV → **Q** (15.2%).
- **C items:** Low-value items contributing remaining ~5–10% of the total ACV → S (6.1%)

Step 5: We identify the items requiring the most careful inventory control

- **Most Careful Control (A items): P, R, T**

  These items are high in consumption value and should be closely monitored to prevent stock outs and reduce capital tie-up.

- **Moderate Control (B items): Q**
- **Minimal Control (C items): S**

The final ABC classification is given as follows:

Item	ABC Category
P	A
R	A
T	A
Q	B
S	C

Conclusion: The company should focus most on items **P, R, and T** for inventory control.

ADVANTAGES OF ABC ANALYSIS:

The advantages of ABC analysis are listed as follows:

I. **Prioritizes Inventory Control** – focuses on high-value items, which is different from reducing costs.
II. **Reduces Inventory Costs** – directly lowers holding and overstocking costs, distinct from prioritization.
III. **Improves Resource Allocation** – emphasizes optimal use of management effort, separate from ordering or cost.
IV. **Supports Efficient Ordering** – helps decide order frequency for important items, which is different from cost reduction or resource allocation.
V. **Simplifies Inventory Management** – categorizes items to make monitoring easier, which is distinct from all above points.

LIMITATIONS OF ABC ANALYSIS:

The limitations of ABC analysis are listed as follows:

(a) **Ignores Item Criticality** – highlights that ABC focuses on monetary value but may miss items that are operationally vital, which is different from just data accuracy or demand issues.

(b) **Based on Monetary Value Only** – emphasizes the limitation of using cost/value as the only criterion, distinct from criticality or data accuracy.

(c) **Requires Accurate Data** – points out that errors in inventory or cost data can distort classification, which is different from how categories can become outdated.

(d) **Static Classification** – indicates that the A/B/C categories don't automatically adjust to changes in usage patterns or costs, distinct from monetary focus or data accuracy.

(e) **Does Not Handle Demand Variability** – shows the model assumes consistent demand and ignores fluctuations, which is a separate limitation from data or classification issues.