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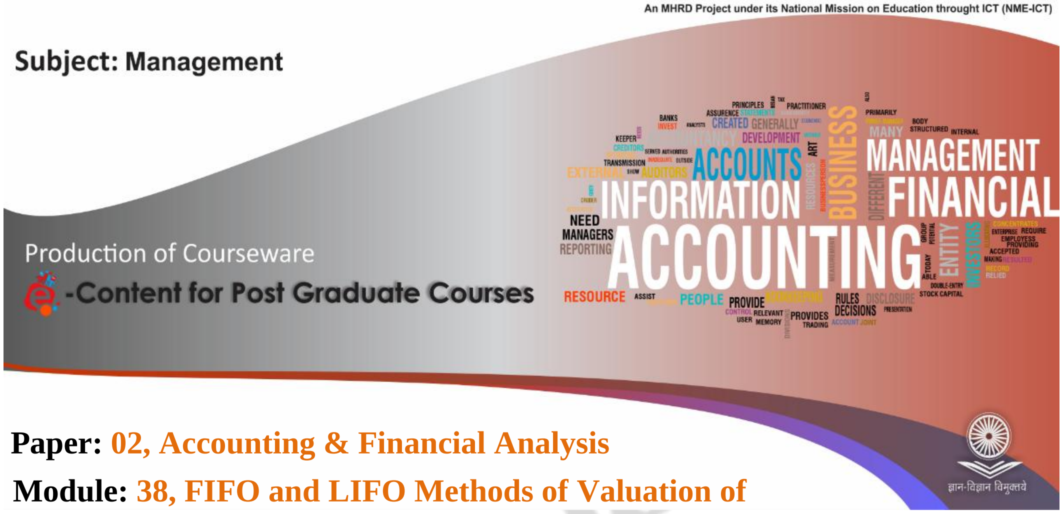

Paper: **02, Accounting & Financial Analysis**

Module: **38, FIFO and LIFO Methods of Valuation of Inventory**

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Items	Description of Module
Subject Name	Management
Paper Name	Accounting & Financial Analysis
Module Title	FIFO and LIFO Methods of Valuation of Inventory
Module Id	Module No-38
Pre- Requisites	Basis of Valuation of Inventories
Objectives	Methods of Valuation of Inventories
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QUADRANT-I

Module 38 FIFO and LIFO Methods of Valuation of Inventories
1. Learning objectives
2. Introduction
3. Basis of valuation of inventories
4. Methods of valuation of inventories
5. Specific Identification Method
6. First In First Out (FIFO) Method
7. Last In First Out (LIFO) Method
8. Weighted Average Price Method
9. Selection of Best Method
10. Summary

LEARNING OBJECTIVES:

This module will help the students to:

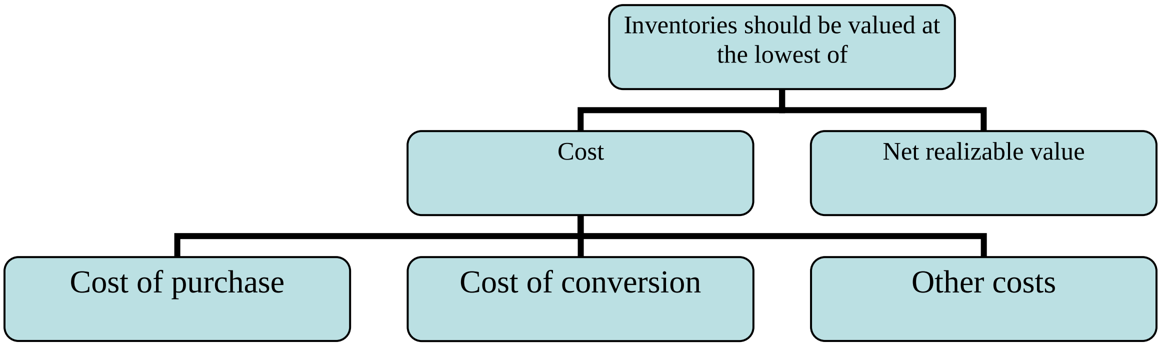
- Understand the basis of Inventory Valuation
- Classification of methods of valuation of inventory
- Understand the Specific Identification Costs Method
- Understand the Meaning and Features of First-In-First-Out (FIFO) Method
- Explain the Meaning and Features of LIFO Method
- Discuss Weighted Average Price Method
- Compare different methods of valuation of inventory

INTRODUCTION

Inventory is one of the most important assets possessed by a business. Preparation of accurate income statement and balance sheet of a concern depends on correct valuation of its inventory. There are different methods for assigning historical costs to inventory and goods sold. Choosing the correct inventory valuation method depends largely on the characteristics and need of the business.

BASIS OF VALUATION OF INVENTORIES

According to Accounting Standard 2 (Revised), the inventories should be valued at the lowest of “cost” and “net realisable value”.



Cost of Inventories

Cost of inventories includes not only the price paid for acquisition of inventories but also all costs incurred for bringing and making them fit for use in production or for sale, e.g.,

- transportation costs,
- duties paid,
- insurance-in-transit,
- manufacturing expenses,
- wages paid or
- Manufacturing expenses incurred for converting raw materials into finished products, etc.

Simply it can be concluded that Cost of inventories is the aggregate of

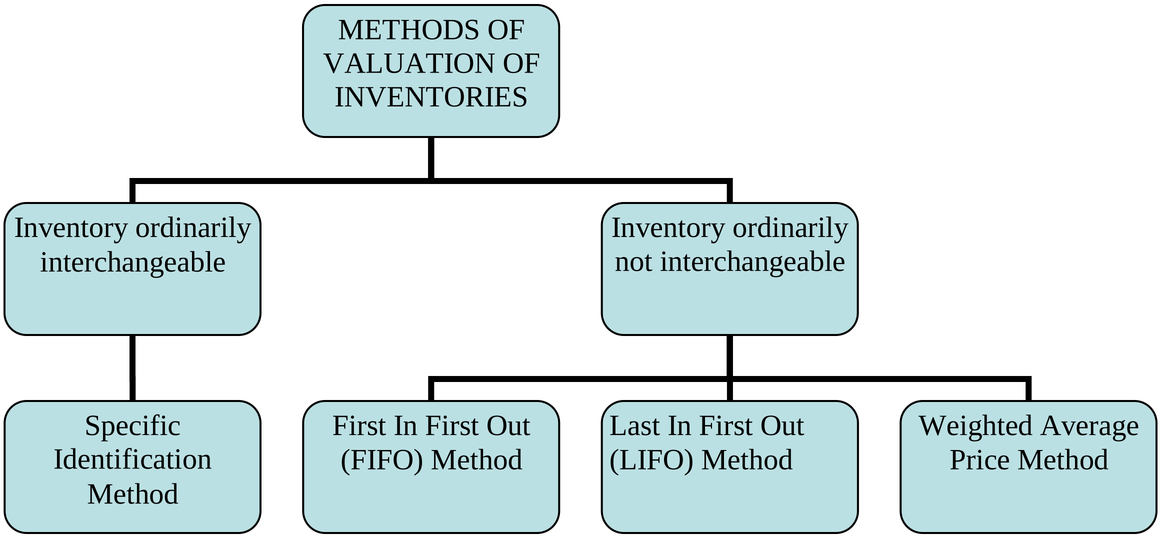
- cost of purchase,
- cost of conversion, and
- Other costs incurred in bringing the inventories to their present location and condition.

Net realisable value

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

METHODS OF VALUATION OF INVENTORIES

The main objective of valuation of inventories is the proper determination of income through the process of matching appropriate costs against revenues. It requires assigning of proper costs to inventory as well as goods sold. Some of methods for assigning historical costs to inventory and goods sold are being given as below.



1. SPECIFIC IDENTIFICATION METHOD

Specific Identification Method is the simplest method used for valuation of inventories. Specific identification method is suitable in situations where it is possible to physically separate different purchases and each item sold and each item remaining in the inventory can be identified. The cost of specific items that are sold during a period is included for calculating the cost of goods sold for that period. Further, the cost of specific items remaining at the end of a period is included for calculating inventory at the end of that period. This method can be practiced in businesses such as car dealerships, jewelers, and art galleries

This method can applied only

- when a company knows the cost of every individual item that is sold,
- the quantity of inventory is limited and
- Each inventory item is unique.

Example of Specific Identification Method

The working of the system can be understood with the help of the following illustration.

Illustration1. The following is the record of receipts of certain materials during Jan, 2015:

- Jan. 02 Received 800 units for Job No. 2 @ 10 per unit.
- Jan. 03 Received 600 units for Job No. 3 @ 11 per unit.
- Jan. 18 Received 400 units for Job No. 4 @ l2 per unit.

During Jan. 2015, the following issues of materials are made:

- Jan.. 10 Issued 400 units to Job No. 2.
- Jan.. 14 Issued 200 units to Job No. 3.
- Jan.. 19 Issued 400 units to Job No. 2.
- Jan.. 20 Issued 400 units to Job No. 4.

Show how these transactions will appear in the Stores Ledger and state the amount of inventory of Jan. 31, 2015.

Solution **Stores Ledger**

Date	Receipt				Issues						Balance	
	Job No.	Qty.	Rate	Amt	Date	Job No.	Qty.	due	rate	Amt	Qty	Amt
Jan.2	2	800	10	8000							800	8000
Jan.3	3	600	11	6600							1400	14600
					Jan.10	2	400	400	10	4000	1000	10200
					Jan.14	3	200	400	11	2200	800	8400
Jan.18	4	400	12	4800							1200	13200
					Jan.19	2	400	….	10	4000	800	9200
					Jan.20	4	400	…..	12	4800	400	4400

Suitability

- When the materials or goods have been purchased for a specific job or customer.
- When a company is handling a small number of items.

ADVANTAGES OF SPECIFIC IDENTIFICATION METHOD:

In this method actual costs are matched against revenues. An important advantage of specific identification method that, in this method flow of cost is corresponding to the physical flow of inventory.

DISADVANTAGES OF SPECIFIC IDENTIFICATION METHOD

This method is inappropriate in most cases due to practical considerations. Some of the limitations of this method are as below

(i) **Manipulation of Income**: The biggest limitation of using this method is that it opens doors to income manipulation and the net income can be easily manipulated under this method.

(ii) **Incase of number of inventory items**: In case of a manufacturing concern have number of inventory items. Then, then this method will fail as it is almost impossible to identify the cost of each individual item of inventory.

STOP Quick Revision
SPECIFIC IDENTIFICATION METHOD • Specific identification method is suitable in situations where it is possible to physically separate different purchases a each item sold and each item remaining in the inventory can be identified.

2. FIRST IN FIRST OUT (FIFO) METHOD

According to this method inventory is used/ sold in the order they have been purchased and older inventory is issued first. It is based on the principle that cost should he charged to revenue in the order in which these have been incurred.

Simply:

- Goods or materials received first are issued first.
- ‘First come- first serve’ is the basis of issuing goods or materials.

Example of FIFO Method

The working of this method can be understood with the following illustration. The following are purchases of material during the month Jan. 2015:

- Jan. 1, 2011 Opening Balance 1,000 units @ Rs 2
- Jan. 6 Received from vendor 400 units @ Rs 3
- Jan. 11 Received from vendor 300 units @ Rs 2
- Jan. 20 Received from vendor 600 units @ 'Rs 3
- Jan. 26 Received from vendor 800 units @ 'Rs 2

Issues of materials were as follows:

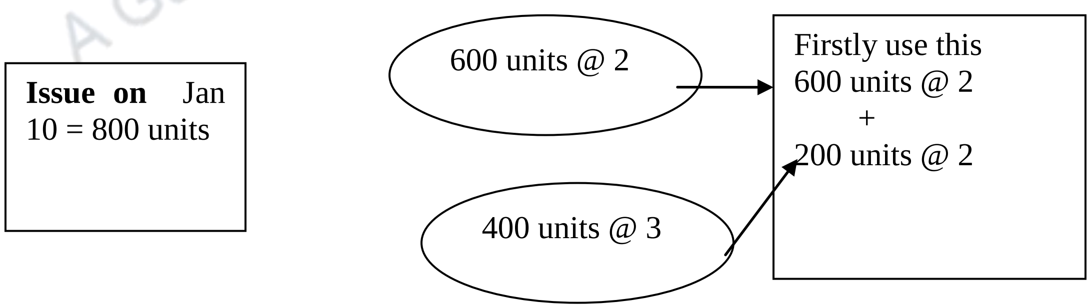
- Jan. 5- 400 units,
- Jan 10 – 800 units
- Jan.18- 200 units

Prepare store ledger accounts showing how the value of the issues would be recorded under FIFO method

Store ledger accounts

Date	**Receipts**			**Issue**			**Balance**		
	Qty	**Rate**	**Amt**	**Qty**	**Rate**	**Amt**	**Qty**	**Rate**	**Amt**
Jan. 1							1000	2	2000
Jan. 5				400	2	800	600	2	1200
Jan. 6	400	3	1200				600 400	2 3	1200 1200
Jan. 10				600 200	2 3	1200 600	200	3	600
Jan. 11	300	2	600				200 300	3 2	600 600
Jan. 18				200	3	600	300	2	600
Jan. 20	600	3	1800				300 600	2 3	600 1800
Jan. 26	800	2	1600				300 600 800	2 3 2	600 1800 1600

Note: For making clear issue on dated Jan.10 is shown below in the figure:



FEATURES OF FIRST IN FIRST OUT (FIFO) METHOD

Some of features of First In First out (FIFO) Method are explained as below

1. Assumption of method: Under this method, it is assumed that

- the materials/goods that are sold or used first are those are bought first. Or
- the first inventory item that arrives is the first inventory item to go out. Or
- the goods that arrive first are the first to be used. Or

2. Value of Inventory: According to FIFO method, inventory in hand will always be the most recently purchased items and valued at most recent or current prices.

3. Cost of goods sold

The cost of goods purchased first (first-in) is the cost of goods sold first (first-out). This means the cost of goods sold is taken on older prices.

4. Suitability

The FIFO method suitable in the following circumstances:

- When nature of materials/goods are perishable.
- Purchases are not made frequently.
- When the prices in market show declining trend.
- Incase inventory items are bulky, slow moving and costly.

5. Impact of Fluctuations in Prices: These can be divided in to two parts

- In periods of rising prices
- In periods of falling prices

In periods of rising prices: In periods of rising prices in FIFO method

- inventory will be valued at a higher prices
- Cost of goods sold will also be relatively deflated.
- profits will be inflated
- Increase in liability for payment of taxes.

In periods of falling prices: In periods of falling prices in FIFO method

- inventory will be valued at a lower prices
- resulting in deflating the profits,
- Reducing the income tax liability.

6. Effect on Balance sheet and Income statement: These can be divided in to two parts

- In normal circumstances
- Incase Fluctuation in Prices

In normal circumstances: In normal circumstances in FIFO method balance sheet shows a more correct and fair picture since the inventories at end is valued at the recent or current marked price.

Incase Fluctuation in Prices:

These can further be divided in to two parts:

- In periods of rising price FIFO method gives
- In periods of falling price FIFO method gives

In periods of falling price FIFO method gives

- a more correct, fair and meaningful balance sheet
- a less realistic income statement.

In periods of rising price FIFO method gives

- a less correct, fair and meaningful balance sheet
- a more realistic income statement.

ADVANTAGES OF FIFO METHOD:

The FIFO method has the following advantages

(i) **Simple and Easy:** FIFO method is easy to operate and it is easy to calculate value of inventory. Further, this method is also simple to understand.

(ii) **Realistic:** FIFO method is realistic method as it is based on assumption that inventory is issued in the normal order they were received. Because it is logical that materials purchased earlier are used in earlier jobs.

(iii) **Inventory at current prices:** Under FIFO method value of inventory reflects actual price paid. Further, I under this method inventory valued at most recent prices.

(iv) **Reduces the risk**: Under FIFO method inventory is issued in the normal order they were received. Thus, this method reduces the risk of inventory to become outdated or to perish.

(v) **Acceptable by tax authorities and IAS**: This method of valuation of inventories also recommended and acceptable by tax authorities and IAS 2.

(vi) **No unrealized profit:** FIFO method is based on cost. Therefore, no unrealized profit enters into the financial accounts of the company.

DISADVANTAGES OF FIFO METHOD:

The method suffers from the following disadvantages:

(i) **Cost of goods of sold not on recent prices**: In this method older items are issued, cost of production not reveal recent prices. Due to this price of products manufactured may not reflect current market prices.

(ii) **Create problems incase of price fluctuation**: Incase of prices fluctuate a lot this method becomes time consuming and calculation becomes complicated.

(iii) **Possibility of clerical errors**: In this method calculations are complicated and due to this the possibility of clerical errors increases.

(iv) **Difficult to make Comparison between jobs**: In this method a job started a few minutes after another job may have totally different charge for materials. Thus, comparison between different jobs even using the same type of material becomes sometimes difficult.

(v) **Higher tax liability** In case of inflation, the value of cost of goods sold will be lowest and it will maximize net income and tax liability. Thus, this method results in a higher tax liability.

STOP **Quick Revision**
FIRST IN FIRST OUT (FIFO) METHOD According to this method inventory is used/ sold in the order they have been purchased and older inventory is issued first.
ADVANTAGES OF FIFO METHOD • Simple and Easy • Realistic • Inventory current price • Reduces the risk • Acceptable by tax authorities and IAS • No unrealized profit

DISADVANTAGES OF FIFO METHOD

- Cost of goods of sold not on recent prices
- Create problems incase of price fluctuation
- Possibility of clerical errors
- Difficult to make Comparison between jobs
- Higher tax liability .

3. LAST IN FIRST OUT (LIFO) METHOD

Under LIFO method the newest inventory is recorded as sold or used first. According to this method the last items of materials/goods purchased are the first to be issued/sold.

Example of Last In First Out (LIFO) Method

The working of this method can be understood with the following illustration. The following are purchases of material during the month Jan. 2015:

- Jan. 1, 2011 Opening Balance 1,000 units @ Rs 2
- Jan. 6 Received from vendor 400 units @ Rs 3
- Jan. 11 Received from vendor 300 units @ Rs 4
- Jan. 20 Received from vendor 600 units @ ‘Rs 3
- Jan. 26 Received from vendor 800 units @ ‘Rs 2

Issues of materials were as follows:

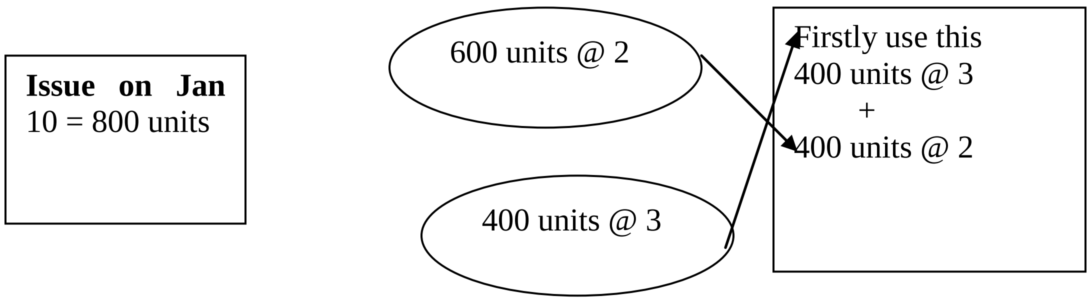
- Jan. 5- 400 units,
- Jan 10 – 800 units
- Jan.18- 200 units

Prepare store ledger accounts showing how the value of the issues would be recorded under LIFO method

Store ledger accounts

Date	**Receipts**			**Issue**			**Balance**		
	Qty	**Rate**	**Amt**	**Qty**	**Rate**	**Amt**	**Qty**	**Rate**	**Amt**
Jan. 1							1000	2	2000
Jan. 5				400	2	800	600	2	1200
Jan. 6	400	3	1200				600 400	2 3	1200 1200
Jan. 10				400 400	3 2	1200 800	200	2	400
Jan. 11	300	4	1200				200 300	2 4	400 1200
Jan. 18				200	4	800	200 100	2 4	400 400
Jan. 20	600	3	1800				200 100 600	2 4 3	400 400 1800
Jan. 26	800	2	1600				200 100 600 800	2 4 3 2	400 400 1800 1600

Note: For making clear issue on dated Jan.10 is shown below in the figure:



FEATURES OF LIFO METHOD

Some of Features of LIFO Method are explained as below

1. Assumption of method: LIFO is based on the principle that

- the last inventory goods received will be the first inventory goods sold or used.
- arrive last are the first to be used.

2. Value of Inventory

When the LIFO method is used, the inventory at the end of a year consists of the goods placed in inventory at the beginning of the year. Thus, under this method, inventory valued at the earliest cost.

3. In circumstances of Fluctuations in Prices: These can be divided in to two parts

- In periods of rising prices
- In periods of falling prices

In periods of rising prices: In periods of rising prices, LIFO will

- result in the lowest ending inventory,
- highest cost of goods sold,
- Lowest net income.
- Reduction in liability for payment of taxes.

In periods of falling prices: In periods of falling prices, LIFO method will result in

- inventory will be valued at a higher prices
- resulting in increase the profits,
- Increasing the income tax liability.

4. Effect on Balance sheet and Income statement

These can be divided in to two parts

- In normal circumstances
- Incase Fluctuation in Prices

In normal circumstances: In normal circumstances when this method is used balance sheet shows a distorted picture since the inventory at end is shown at old costs

Incase Fluctuation in Prices: These can further be divided in to two parts:

In periods of rising price LIFO method gives

- a more meaningful, true and fair view of balance sheet
- a less realistic income statement.

In periods of falling price LIFO method gives

- a less meaningful balance sheet
- a more realistic income statement.

ADVANTAGES OF LIFO METHOD:

The method has the following advantages:

- **(i) Valuation of issues at current prices:** Under LIFO method current market prices are used for valuing materials issued to different jobs or calculating the cost of goods sold.
- **(ii) No unrealized profit or loss**: LIFO method is based on cost and no unrealized profit or loss recorded under this method.
- **(iii) Suitability** LIFO method is suitable for materials non-perishable type.
- **(iv) Lower a business's tax liability:** When LIFO method used in the times of growing inflation it can reduce a company’s tax responsibility.

DISADVANTAGES OF LIFO METHOD:

The method suffers from the following disadvantages:

- **(i) Not appropriate for some businesses:** This method is not appropriate for businesses with perishable inventory items because those businesses have to sell the oldest inventory items first.
- **(ii) Create obsolete inventory:** LIFO can incur obsolete inventory. This is because older inventory will remain on the shelves and may become obsolete over time.
- **(iii) IFRS prohibit the use of LIFO:** Finally, International Financial Reporting Standards not recommend the use of LIFO and it has been heavily regulated under the International Financial Reporting Standards

STOP   **Quick Revision**
LAST IN FIRST OUT (LIFO) METHOD • Under LIFO method the newest inventory is recorded as sold or used first.
ADVANTAGES OF LIFO METHOD • Lower a business's tax liability • Valuation of issues at current prices • No unrealized profit or loss
DISADVANTAGES OF LIFO METHOD • Not appropriate for some businesses • Create obsolete inventory • IFRS prohibit the use of LIFO

DIFFERENCE BETWEEN FIFO AND LIFO

The difference between LIFO and FIFO method are given as below:

Point of difference	**FIFO**	**LIFO**
1. Assumption	goods or material • received first • issued first	goods or material • received last • issued first
2.Valuation of Cost of goods sold	cost of goods sold does not reflect current market price	cost of goods sold reflect current market price
3. Value of inventory	Closing inventory reflect current market price.	Closing inventory does not reflect current market price.
4. Effect on profit and tax	During the periods of	During the periods of

liability	falling prices, • lower income is reported • Reducing the tax liability. During the periods of rising prices, • higher income is reported • Increasing the tax liability.	falling prices, • higher income is reported • Increasing the tax liability. During the periods of rising prices, • Lower income is reported • Reducing the tax liability.
5. Effect on balance sheet	Balance sheet shows a more correct picture since the closing inventories is valued nearer to the current marked price.	balance sheet shows a distorted picture since the closing inventory is shown at old costs

4. WEIGHTED AVERAGE PRICE METHOD

Weighted Average Price Method is based on the assumption that materials or goods which are purchased are combined into a common bin, after that they lose their separate identity. The inventory does not consist of specific batch of goods. The inventory is thus priced on the basis of Weighted Average prices. These are weighted according to the quantity purchased at each price. Weighted Average cost is calculated given as below:

$$\text{Average cost} = \frac{\text{value of inventory at beginning of year} + \text{purchases during the year}}{\text{Number of units at the beginnning of year} + \text{number of units purchased during year}}$$

Example of Weighted Average Price Method:

The working of this method can be understood with the following illustration. The working of this method can be understood with the following illustration. The following are purchases of material during the month Jan. 2015:

- Jan. 1, 2011 Opening Balance 1,000 units @ Rs 2
- Jan. 6 Received from vendor 400 units @ Rs 3
- Jan. 11 Received from vendor 300 units @ Rs 2

Issues of materials were as follows:

- Jan. 5- 400 units,
- Jan 10 – 800 units
- Jan.18- 200 units

Prepare store ledger accounts showing how the value of the issues would be recorded under LIFO method

Store ledger Account

Date	**Receipts**			**Issue**			**Balance**	
	Qty	**Rate**	**Amt**	**Qty**	**Rate**	**Amt**	**Qty**	**Amt**
Jan. 1							1000	200
Jan. 5				400	2	800	600	1200

Jan. 6	400	3	1200				1000	2400
Jan. 10				800	2.40	1920	200	480
Jan. 11	300	2	600				500	1080
Jan. 18				200	2.16	432	300	648

ADVANTAGES OF WEIGHTED AVERAGE PRICE METHOD:

The main advantages of this method are as below:

- **(i)** **Logical**: Weighted Average Price Method logically recognizes that identical items of inventory, even purchased at different intervals, have equal value.
- **(ii)** **Minimizes fluctuations and ease the pricing process**: Weighted Average Price Method minimizes fluctuations in costs of materials issued. Further, it eases the pricing process.
- **(iii)** **Smoothes out fluctuations in profits**: Weighted Average Price Method smoothes out fluctuations in profits that have occurred due to price fluctuations.
- **(iv)** **Computerized system can be applied**: Weighted Average Price Method is easier to be computerized than other methods of valuation of inventories.
- **(v)** **Acceptable by tax authorities and IAS**: This method of valuation of inventories also recommended and acceptable by tax authorities and IAS 2.
- **(vi)** **Popular method**: Weighted Average Price Method is very popular on account of its being based on the total quantity and value of materials purchased.

DISADVANTAGES OF WEIGHTED AVERAGE PRICE METHOD:

Some of the limitations of this method are given as below:

- **(i)** **Does not reflect actual price**: Weighted Average Price Method does not reflect actual price paid for as it based on average price. Therefore, it values inventory at average prices not on actual prices.
- **(ii)** **Rounding off create problems**: Calculations in Weighted Average Price Method results in figures with several decimal places. Rounding off results in slightly inaccurate figures.
- **(iii)** **Not suitable**: In period of rising prices, Weighted Average Price Method does not reflect current prices.

STOP   **Quick Revision**
WEIGHTED AVERAGE PRICE METHOD • Weighted Average Price Method is based on the assumption that materials or goods which are purchased are combined into a common bin, after that they lose their separate identity. • Inventory is thus priced on the basis of Weighted Average prices.
ADVANTAGES OF WEIGHTED AVERAGE PRICE METHOD: • Logical • Minimizes fluctuations and ease the pricing process • Smoothes out fluctuations in profits • Computerized system can be applied • Acceptable by tax authorities and IAS • Popular method

DISADVANTAGES OF WEIGHTED AVERAGE PRICE METHOD
• Does not reflect actual price • Rounding off create problems • Not suitable

COMPARISON OF FIFO AND WEIGHTED AVERAGE PRICE METHOD

FIFO and Weighted Average Price Method provide different results in different circumstances and some of these are explained below in table:

Situation	FIFO	Weighted Average Price Method
If prices are showing rising trend		
Value of inventory at the end	Higher	Lower
Net Income	Higher	Lower
Valuation of Assets	Higher	Lower
If prices are showing rising trend		
Value of inventory at the end	Lower	Higher
Net Income	Lower	Higher
Valuation of Assets	Lower	Higher

SELECTION OF BEST METHODS

There are several methods to value and cost inventory. Inventories represent important current assets of a concern. Selection of the right inventory valuation method depends on the specific characteristics and objectives of the valuation. Below are the recommendations of Indian accounting standard and International Financial Reporting Standard about selection of valuation method of inventory.

Recommendation from Accounting Standard 2 (Revised)

Accounting Standard 2 (Revised) provides

- First in First out (FIFO) or Weighted Average method for computing the cost of inventories.
- It has recommended the use of specific Identification Method only in case of goods or services which are meant for specific projects.

Recommendation from IFRS

Under IFRS, entities are permitted to employ one of three cost formulas when reporting inventory expense. These methods are:

- Specific Identification
- First-in, First-out ("FIFO")
- Weighted-Average Cost

So, it can be concluded that generally FIFO and Weighted Average method are popular and recommended methods.

STOP	**Quick Revision**
• Generally FIFO and Weighted Average method are popular and recommended methods.	

SUMMARY

Preparation of accurate income statement and balance sheet of a concern depends on correct valuation of its inventory. According to Accounting Standard 2 (Revised), the inventories should be valued at the lowest of "cost" and "net realisable value". There are different methods for assigning historical costs to inventory and goods sold. These mainly include Specific Identification Method, FIFO,LIFO and Weighted Average Price Method. Generally FIFO and Weighted Average method are popular and recommended methods.