3) From the following data for an accounting year calculate the inventory turnover **and** express the *same* in number of days the average inventory is consumed for each material

	Material X Rs.	Material Y Rs.
Opening stock	1,000	1,200
Purchases during the year	**5,200**	4,600
Closing stock	**600**	1,600

(**Answer:** Inventory turnover ratio X = 7 times Y = 3 times
Number of days average inventory is consumed X = **52** days,
Y = **122** days)

Note: These questions will help you to understand the unit better. Try to write answers for them. But do not send your answers to the University. These are for your practice only.

UNIT 5 PRICING THE ISSUE OF MATERIALS

Structure

5.0 OBJECTIVES

· After studying this unit you should be able to:
- ascertain the cost of materials issued for production
- identify the problems associated with pricing the issue of materials
- list the various methods of pricing
- assess the pros and cons of FIFO, LIFO and weighted average methods of pricing
- prepare the stores ledger under FIFO, LIFO and weighted average 'methods.

5.1 INTRODUCTION

You have learnt that the stores ledger is one of the important store records which is maintained by the costing department and that in addition to quantities it also records the prices at which the materials have been received and issued. As for the receipts of materials, they may be recorded at prices at which they are purchased after making necessary adjustment for discounts, transportation charges, cost of containers, etc. But, when it comes to the issues of materials, the problem arises with regard to the price at which each issue: should be recorded because different consignments of materials might have been purchased at different prices. For this ,purpose, accountants have developed a number of methods based on various materials flow assumptions. In this uniit, you will learn about these methods of pricing the issue of materials and also the preparation of stores ledger account according to some of the prominent methods.

5.2 ASCERTAINING TIHE COST QF MATERIALS .

The basic document used for ascertaining the cost of materials received is invoice. It contains the basic price as well as the items like discount, freight, insurance, sales tax, cost of containers, etc. The organisation also incurs some expenditure of cartage, receiving, inspecting and storage of materials. Now the question arises as to which of these items should be taken into account in arriving at the cost of materials. Let us discuss them one by one.

Cash Discount: Cash discount represents an allowance made by the supplier if the payments of bills are made within the specified period. Opinions differ as regards the

method of treatment of such discount in cost accounts. One view is that cash discount, being in the nature of purely a financial transaction, should be completely excluded from cost accounts. The other view is that if cash discount is always earned for prompt payments, it may be considered in finding out the final rate for materials in cost accounts.

Trade Discount: Trade discount is shown in the invoice as a deduction from the purchase price. If the consignment consists of one item only, the entire trade discount is deducted from purchase price. Hence, no difficulty arises with regard to its treatment. If, however, the consignment consists of a number of items, the amount of discount should be apportioned among all the items covered by the consignment on the basis of the purchase price of each item. In any case, **the net amount after deduction of trade discount is taken as the purchase price.**

Quantity Discount: Quantity discount is allowed as an incentive for bulk purchasing. The rate of discount varies with the quantity purchased. From the point of view of the supplier, an order for a large quantity reduces his selling and distribution cost. Thus, a part of the savings enjoyed by a supplier out of the large orders is passed on to the purchaser by means of quantity discount. From the point of view of the buyer, quantity discount is in the nature of a price reduction. Hence, the amount of discount may be adjusted in the same manner as the trade discount.

Transportation Charges: Sometimes, the terms of supply provide for free delivery at the premises of the purchaser. In that case, the price is inclusive of the transportation charges. But, in most cases, the transport costs are paid by the purchaser. These. should be added to the invoice price in order to arrive at the cost of materials. But, for the sake of convenience, the transportation charges may be regarded as an item of factory overheads and absorbed accordingly.

Custom, excise duty, sales tax, etc.: As stipulated in the contracts, the supplier adds several items such as sales tax, excise duty, custom duty, octroi, etc. to the invoice price. These expenses should be added to the cost of purchases, if they can be directly allocated to the particular materials.

Receiving, inspection, storage, material accounting and purchase department expenses: These expenses cannot be easily allocated to the materials. Hence, they are treated as factory overheads and recovered on the basis of the value of direct materials issued or as general overheads to be apportioned to the various cost-centres on the basis of the value of materials issued.

Cost of Containers

Materials are normally supplied by the suppliers in containers. They may or may not make a separate charge for them. Then, these containers may be either returnable or non-returnable. The cost of the containers can be treated in any of the following ways:

a) If the supplier has not charged the cost of containers in which materials have been supplied, there is no need to add any amount in this regard to the cost of materials. But, if the containers have some realisable value, the same should be estimated and deducted from the cost of materials. Alternatively, it may be deducted from factory overheads.

b) If the supplier has charged the cost of containers and these containers are non-returnable, their cost (minus realisable value, if any,) should be included in the cost by materials.

c) Where the cost of the containers has been charged by the supplier and these containers can be returned to the supplier, the difference between the cost of the containers and the amount credited by the supplier on the return, will be added to the purchase price of the materials.

d) where the supplier agrees to give full credit for the cost of the containers charged by him on their return, the cost of these containers will not be added to the purchase price of the materials on the assumption that the containers will be returned to the supplier and their amount recovered fully.

Illustration 1 will explain to you the calculation of purchase price of materials.

Illustration 1

From the following invoice received from a supplier, calculate the material cost per unit:

Quantity	Particulars	Rate Rs,	Amount Rs.
150 kgs	Material x	10.00 per kg	1,500
100 kgs	Material y	12.00 per kg	` 1,200
			2,700
	Less trade discount		90
			2,610

Add:

Cost of containers (capacity of each 50 kgs)	60
Cartage and carriage	75
Octroi duty @ 1%	27
	2,772

Terms

i) 5% cash discount for payment within a week

ii) Return value of containers Rs.9 each

Solution

Statement showing the calculation of material cost:

		Material x Rs.	Material y Rs.
Invoice price		1,500	1,200
Less: Trade Discount (divided in the ratio of invoice price i.e., 5:4)		50	40
		1,450	1,160
Add i) Cost of containers (divided in the ratio of quantity i.e., 150:100)		9	6
,Actual cost	60		
. Return value	45		
	15		
ii) Cartage and carriage (in the ratio of quantity i.e. 150:100)		45	30
iii) Octroi duty (in the ratio of invoice price)		15	12
		1,519	1,208
Cost per kg.		1,519	1,208
		150 kgs.	100 kgs.
		= Rs. 10.13	= Rs. 12.08

Notes:

i) Cash discount being a financial item, has been ignored.

ii) It has been assumed that containers have been returned.

5.3 PROBLEM IN PRICING THE ISSUE OF MATERIALS

The fixation of the price at which issues of materials are to be charged to production is important from the point of view of ccst accounting. If prices remain constant for a long time, there is little difficulty in pricing the issue of materials. But, in practice, we find that the prices of materials continue to fluctuate on account of changes in the value of money, changes in the world commodity prices, buying from different sources, and differences in the quantity discounts. Hence, different consignments of materials may be bought at different prices during an accounting period. The problem, therefore, is that which of these prices should be used for pricing the materials issued to production from time to time. Is it the price of the first, or the second consignment or the average of the two?

Fot example, 200 kg. of materials K was bought at Rs. 30 per kg. On January 10 and 300 kg. was bought at Rs 32 per kg. on January 16. On January 18,250 kg. was issued to production. Now the question arises as to whether the 250 kg. of material K be charged to production at Rs.30 or Rs.32 or Rs.31, the average price. To solve this problem, a number of methods based on certain materials flow assumptions, have been developed. You will study these methods in detail in Section 5.4 of this unit. However, a good method of valuing material issues should satisfy the following conditions:

a) The issue price should recover the cost of materials.

b) The issue price must reflect the current market price.

c) The issue price should not cause any significant variation in cost from period to period and from job to job.

d) The issue price should not necessitate heavy adjustments at the time of valuation of closing stock.

e) It should be simple and easy to operate.

5.4 METHODS OF PRICING

The various methods used for the pricing of the material issues can be classified as follows:

I) Actual Cost Methods
   a) First in First out (FIFO)
   b) Last in First out (LIFO)
   c) Specific price
   d) Highest in First out (HIFO)
   e) Base stock method

II) Average cost methods
   a) Simple average
   b) Weighted average
   c) Periodic simple average
   d) Periodic weighted average
   e) Moving simple average
   f) Moving weighted average

III) Notional cost methods
   a) Standard price
   b) Inflated price

IV) Market price methods
   a) Replacement price
   b) Net Realisable price

Of the methods listed above, FIFO, LIFO and weighted average are the most common methods. Hence we shall discuss them here in detail.

5.4.1 First in First *Out* Method

This method assumes that materials received first are to be issued first. Under this method the price of the earliest consignment is taken first and when that consignment is exhausted, the price of the next consignment is adopted, and so on. In other words, when a requisition for a certain type of materials is presented to the storekeeper, he will apply the cost price of the first lot of materials received, provided the same is still on hand. If the quantity required is more than the units remaining from the first lot, he uses the cost price of the second lot, then the third and fourth until the total quantity requisitioned is issued. **This method is based on the principle that materials should be issued in the order of receipts and at the actual cost.**

It should be noted that the physical issue of stores need not be in the above order, as generally it is neither possible nor necessary to do so. This arrangement is only for the purpose of accounting. As the materials purchased first are charged off first, the value of closing stock conforms, more or less, to the current market price.

Solution ,

STORES LEDGER ACCOUNT
(Under weighted average method)

Name ....

Description ....:...................

Location code ....

Maximum level ························

Minimum level ....

Ordering level ....

Re-order quantity ....

Date	Receipts				Issues				Balance		
	G.R.N. No.	Qty.	Rate Rs.	Amount Rs.	R.S. No.	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate Rs.	Amount Rs.
Jan 1	—	500	5.00	2,500	—	—	—	—	500	5.00	2,500
Jan. 8	—	300	5.10	1,530	—	—	—	—	800 {500 300}	5.00 5.10	4,030
Jan. 13	—	—	—	—	—	600 {500 100}	3,010	3,023	200	5.10	1,020
Jan. 18	—	400	5.20	2,080	—	—	—	—	600 {200 400}	5.10 5.20	3,100
Jan. 23	—	—	—	—	—	300 {200 100}	1,540	1,544	300	5.20 ·	1,560
Jan. 25	—	500	5.10	2,550	—	—	—	—	800 {300 500}	5.20 5.10	4,110
Jan. 31	—	—	—	—	—	200	1,040	1,023	600 {100 500}	5.20 5.10	3,070
		1,700		8,660		1,100		5,590	600		3,070

This method is suitable in times of falling prices because the materials charge to production will be high while the cost of stock replacement will be low. But in case of rising prices, if this method is followed, the charge to production will be low leading to higher profits and higher tax liability.

Illustration 2 will explain to you as to how the issue of the materials are priced under this method.

Illustration 2

In a factory, the following purchase and issues were made during the month of Account January, 1988. Prepare the stores Ledger Account under FIFO method.

Date	Purchases		Issues
	Units	Rate (Rs.)	
Jan.1	500	5.00	—
Jan. 8	300	5.10	—
Jan. 13	—	—	600
Jan. 18	400	5.20	—
Jan. 23	—	—	300
Jan. 25	500	5.10	—
Jan. 31	—	—	200

Advantages

The following are the advantages of FIFO Method:

1) It is simple to understand and easy to operate.

2) Since materials are charged to production at actual cost, no profit or loss arises by reason of adopting this method.

3) It is a good inventory management system since the oldest units are used first and inventory consists of latest stock.

4) Closing stock generally represents fair valuation of stock, as it would consist of recent purchases of materials.

Disadvantages

This method suffers from the following disadvantages:

1) The number of calculations complicates the accounts if the prices of material purchased fluctuate considerably and increases the possibilities of errors.

2) Usually more than one price has to be adopted for each issue.

3) Comparison of one job with another may be difficult because issues to one job may be charged at prices different from the other.

4) In a fluctuating market, the effect of the current market price is not revealed in the cost of issues.

5.4.2 Last in First Out Method

Under this method, the price of the latest consignment is taken into consideration for pricing the issues of materials. This method is based on the assumption that materials received last are issued first. Thus, when a requisition is received for certain materials, the storekeeper will charge the cost price of the latest consignment. If the quantity required is more than the units remaining from the latest consignment, he will apply the cost price of the consignment immediately preceding the last lot and so on.

This method is suitable in-times of rising prices because the materials charged to production will be higher leading to lower profits and lower tax liability. The cost of production will also be closer to current prices.

Look at Illustration 3 and see how issues of materials are priced under LIFO method.

Solution

Name ....

Description ....

Location code ....

Maximum level ....

Minimum level ....

Ordering level ....

Re-order quantity ....

Date	Receipts				Issues				Balance		
	G.R.N. No.	Qty.	Rate Rs.	Amount Rs.	R.S. No.	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate Rs.	Amount Rs.
Jan. 1	—	500	5.00	2,500	—	—	—	—	500	5.00	2,500
Jan. 8	—	300	5.10	1,530	—	—	—	—	800 {500 / 300}	5.00 / 5.10	4,030
Jan. 13	—	—	—	—	—	600 {300 / 300}	5.10 / 5.00	3,030	200	5.00	1,000
Jan. 18	—	400	5.20	2,080	—	—	—	—	600 {200 / 400}	5.00 / 5.20	3,080
Jan. 23	—	—	—	—	—	300	5.20	1,560	300 {200 / 100}	5.00 / 5.20	1,520
Jan. 25	—	500	5.10	2,550	—	—	—	—	800 {200 / 100 / 500}	5.00 / 5.20 / 5.10	4,070
Jan. 31	—	—	—	—	—	200	5.10	1,020	600 {200 / 100 / 300}	5.00 / 5.20 / 5.10	3,050
		1,700		8,660		1,100		5,610	600		3,050

Illustration **3**

Based on data given in Illustration 2, prepare the Stores Ledger Account under the LIFO method.

Advantages

The following are the advantages of pricing the material issues under LIFO method.

1) It is simple and useful when transactions are few.

2) Since issues are based on the actual cost, no profit nor loss arises by using this method.

3) Production is charged at most recent prices so that cost of production reflects current price levels.

4) During the period of rising prices, profits ace lowered down since production is charged at current prices. The tax liability is thus reduced.

5) This method will iron out fluctuations in profits over a period of changing price levels.

Disadvantages

1) Sometimes more than one price has to be adopted for pricing a single requisition.

2) As in the case of FIFO method, calculations become complicated and cumbersome when rates of receipts are highly fluctuating.

3) When prices are falling, it will lead to low charge to production.

4) As in the case of FIFO method, a substantial difference is likely to be shown in the cost of two jobs, solely because the stock of one happened to be drawn a few minutes before those for the other. Thus it makes the comparison between different jobs very difficult.

5) Closing stock is valued at a cost which does not represent current conditions.

5.4.3 Weighted Average Price Method

Under actual cost methods whether it is FIFO or LIFO, you have to assume certain order of the outflow of materials which may or may not be observed in actual practice. Hence, it is advocated that the issue of materials should be valued at. average price. This average may be a simple average or a weighted average. The weighted average is considered more desirable as it also takes into account the quantities bought at each price. The weighted average price is calculated by dividing the total cost of materials in stock by the total quantity in stock prior to each issue. Thus,

$$\text{Weighted average price} = \frac{\text{Value of material in stock}}{\text{Quantity in stock}}$$

It is important to note the average price under weighted average method has to be calculated each time materials are received in stores and not when they are issued. Thus, under this method, as soon as a fresh lot is received, a new price is calculated and all the issues are then taken at this price until the next lot of material is received.

In periods of heavy fluctuations in prices, the weighted average method gives' better results because it tends to smooth out the fluctuations in prices by taking the average of the prices of various lots in stock. This method of pricing of material also recovers the cost price of materials from production.

. Illustration 4 should help you to understand the pricing of issues of materials at weighted avenge price.

Illustration 4

Based on the data given in Illustration **2,** prepare the stores Ledger Account on weighted average price method. .

Solution·

Name ....

Description ....·

Location code ....

Maximum level .... ·.

Minimum level ....,................

Ordering level ....

Re-order quantity ....

Date	Receipts				Issues				Balance		
	G.R.N. No.	Qty.	Rate Rs.	Amount Rs.	R.S. No.	Qty.	Rate Rs.	Amount Rs.	Qty.	Kate Rs.	Amount Rs.
Jan. 1	—	500	5.00	2,500	—	—	—	—	500	5.000	2.500
Jan. 8	—	300	5.10	1,530	—	—	—	—	800	5.0375 5.0375	4,030
Jan. 13	—	—	~	—	—	600	5.0375	3,023	200	5.1458	1,007
Jan. 18	—	400	5.20	2,080	—	—	—	—	600	5.1458	3,087
Jan. 23	—	—	~	—	—	300	5.1458	**1,544**	300		1,543
Jan. 25	—	500	**5.10**	2,550	—	—	—	—	800		4,093
Jan. 31	—	~	—	—	—	200	5.1172	1,023	600	5.1178 5.1178	3,070
		1.700		8.660		1.100		5,590	600		3.070

Advantages

1) It is logical and consistent.

2) Cost comparisons are rendered easier.

3) When prices fluctuate considerably, it will smooth out fluctuations.

4) Calculation of the new price arises only with the new receipt in stock, all subsequent issues are then charged at this price until the next Lot is received.

Disadvantages

1) This method requires tedious calculations. For instance to get the benefit of the method, average prices are to be calculated upto four or five decimal points which is very much laborious.

2) Material cost does not represent the current prices.

3) Closing stock also may not represent current market prices.

4) Fresh calculations will have to be made every time fresh purchases are made. This will mean much of arithmetical work and is likely to cause error.

It is the weighted average cost method which is mostly used by different organisations because it satisfies most of the conditions of a good method of valuing material issues.

5.4.4 Pricing of Materials Returned to Vendors

Materials which are not according to specifications or are found to be of substandard quality, are returned to the vendor. If such materials are not sent to the stores and are returned to the vendor by the receiving section itself, a debit note is sent to the vendor after making the necessary adjustments in the invoice value of the goods. However, if such goods have been included in stock, the returns have to be recorded in the issue column of the stores ledger account and valued at the price at which they were received. Alternatively, they may be treated as a normal issue of materials and valued according to the method of pricing used. Thus,

i) If FIFO method is followed, the price will be that of the oldest stock on the date of return.

ii) If LIFO method is followed, the materials will be valued at the price of the latest receipt.

iii) If the average price is followed, the returns should be valued at the average price.

5.4.5 Pricing of Materials Returned to Stores

Some materials issued to a job may become surplus. These should be returned to the stores. The materials so returned are recorded in the bin card as well as in the stores ledger. The general rule for recording such returns in stores ledger account is to value them at the price at which they were originally issued and then they should be included in the next requisition and issued at the same price, unless given otherwise. However, if the company is following the weighted average price method, the returned materials should be recorded at the price at which they were originally issued and then a new average cost should be worked out as if the materials returned were a new purchase. Sometimes, the rate of original issue is not given. In such a situation, it should be taken as belonging to the latest issue of materials and recorded accordingly.

5.4.6 Treatment of Shortage of Materials

If any shortage of materials is noted on making a physical verification of stock of materials, it should be entered in the issue column of stores ledger and valued in accordance with the method adopted for pricing material issues.

Look at Illustration 5 and study how returns and shortage are recorded in the stores Ledger Account.

Illustration 5

The particulars of receipts and issues of materials in a factory in August 1987 are as under:

August 01 Opening balance 1,500 kgs. @ Rs. 12 per kg.
" 02 Issued 100 kgs.
" 03 Issued 250 kgs.
" 04 Issued 300 kgs.
" 05 Purchased 400 kgs. @ Rs 12.50 per kg.
" 09 Issued 300 kgs.
" 10 Purchased 200 kgs @ Rs. 12.50 per kg.
" 11 Issued 300 kgs.
" 12 Returned from workshop issued on 3rd August 20 kgs.
" 13 Issued 450 kgs.
" 16 Purchased 500 kgs. @ Rs. 13.00 per kg.
" 18 Issued 400 kgs.
" 20 Returned from workshop issued on 9th August 60 kgs.
" 22 Issued 300 kgs.
" 26 Purchased 400 kgs. @ Rs. 12.00 per kg.
" 29 Issued 200 kgs.

Pricing of issues is to be done on FIFO basis. A shortage of 10 kgs. was noticed on 16th August. Prepare the Stores Ledger Account for the month of August, 1987.'

NOTES: Returned from Workshop: The returns from workshop are entered in the receipt column and valued at the rate at which they were originally issued. In this illustration, there are two returns from workshop on 12th and 20th August respectively. These are to be valued at the rates at which they were originally issued, that 'is, rates charged (Rs. 12) on 3rd and 9th August respectively. Further, the 20 units returned on 12th August have been included in the issue made on 13th August; and 60 units returned on 20th August have been included in the issue made on 22nd August.

2) **Shortage:** Shortage has been entered in the issue column and has been treated just like other issues. It is to be valued at the rate as per the method adopted, the FIFO, LIFO etc. treating the shortage as one of the issues,

Illustration 6

From the following record of the receipt and issues of coal and stores verification report, calculate the prices of issues charged out under weighted average method.

1990
April 1 Opening balance: 100 tons @ Rs. 50 per ton
" 5 Issued 60 tons
" 6 Received 120 tons @ Rs. 50.50 per ton
" 7 Issued 50 tons (the stock verification report reveals a loss of 1 ton)
" 8 Received back from completed job 2 tons previously issued @ Rs. 50.25 per ton.
" 9 Issued 80 tonnes.

Check Your Progress A

1) State whether the following statements are True or False.
First in First Out method of valuing materials issues is suitable in times of rising prices.   ....
According to LIFO method of pricing, issues are close to current economic values. .   ...
Weighted-average method of pricing stores involves adding ill the different prices and dividing by the number of such prices.   ....

2) Fill in the blanks.

i) First in First Out method of valuing material issues is suitable in times of ...., prices.
ii) Last in First Out method is suitable in times of ....prices.
iii) Weighted average method of valuing material issues is suitable when prices ....

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Advantages

1) It is logical and consistent.

2) Cost comparisons are rendered easier.

3) When prices fluctuate considerably, it will smooth out fluctuations.

4) Calculation of the new price arises only with the new receipt in stock, all subsequent issues are then charged at this price until the next lot is received.

Disadvantages

1) This method requires tedious calculations. For instance to get the benefit of the method, average prices are to be calculated upto four or five decimal points which is very much laborious..

2) Material cost does not represent the current prices.

3) Closing stock also may not represent current market prices.

4) Fresh calculations will have to be made every time fresh purchases are made. This will mean much of arithmetical work and is likely to cause error.

It is the weighted average cost method which is mostly used by different organisations because it satisfies most of the conditions of a good method of valuing material issues.

5.4.4 Pricing of Materials Returned to Vendors

Materials which are not according to specifications or are found to be of substandard quality, are returned to the vendor. If such materials are not sent to the stores and are returned to the vendor by the receiving section itself, a debit note is sent to the vendor after making the necessary adjustments in the invoice value of the goods. However, if such goods have been included in stock, the returns have to be recorded in the issue column of the stores ledger account and valued at the price at which they were received, Alternatively, they may be treated as a normal issue of materials and valued according to the method of pricing used. Thus,

i) If FIFO method is followed, the price will be that of the oldest stock on the date of return.

ii) If LIFO method is followed, the materials will be valued at the price of the latest receipt.

iii) If the average price is followed, the returns should be valued at the average price.

5.4.5 Pricing of Materials Returned to Stores

Some materials issued to a job may become surplus. These should be returned to the stores. The materials so returned are recorded in the bin card as well as in the stores ledger. The general rule for recording such returns in stores ledger account is to value them at the price at which they were originally issued and then they should be included in the next requisition and issued at the same price, unless given otherwise. However, if the company is following the weighted average price method, the returned materials should be recorded at the price at which they were originally issued and then a new average cost should be worked out as if the materials returned were a new purchase. Sometimes, the rate of original issue is not given. In such a situation, it should be taken as belonging to the latest issue of materials and recorded accordingly.

5.4.6 Treatment of Shortage of Materials

If any shortage of materials is noted on making a physical verification of stock of materials, it should be entered in the issue column of stores ledger and valued in accordance with the method adopted for pricing material issues.

Look at Illustration 5 and study how returns and shortage are recorded in the stores Ledger Account,

Illustration 5

The particulars of receipts and issues of materials in a factory in August 1987 are as under:

August 01 Opening balance 1,500 kgs. @ Rs. 12 per kg.
" 02 Issued 100 kgs.
" 03 Issued 250 kgs.
" 04 Issued 300 kgs.
" 05 Purchased 400 kgs, @ Rs 12.50 per kg.
" 09 Issued 300 kgs.
10 Purchased 200 kgs @ Rs. 12.50 per kg.
" 11 Issued 300 kgs.
" 12 Returned from workshop issued on 3rd August 20 kgs.
" 13 Issued 450 kgs.
" 16 Purchased 500 kgs. @ Rs. 13.00 per kg.
" 18 Issued 400 kgs.
" 20 Returned from workshop issued on 9th August 60 kgs.
" 22 Issued 300 kgs.
" 26 Purchased 400 kgs. @ Rs. 12.00 per kg.
" 29 Issued 200 kgs.

Pricing of issues is to be done on FIFO basis. A shortage of 10 kgs. was noticed on 16th August. Prepare the Stores Ledger Account for the month of August, 1987.'

NOTES: Returned from Workshop: The returns from workshop are entered in the receipt column and valued at the rate at which they were originally issued. In this illustration, there are two returns from workshop on 12th and 20th August respectively. These are to be valued at the rates at which they were originally issued, that 'is, rates charged (Rs. 12) on 3rd and 9th August respectively. Further, the 20 units returned on 12th August have been included in the issue made on 13th August; and 60 units returned on 20th August have been included in the issue made on 22nd August.

2) **Shortage:** Shortage has been entered in the issue column and has been treated just like other issues. It is to be valued at the rate as per the method adopted, the FIFO, LIFO etc. treating the shortage as one of the issues.

Illustration 6

From the following record of the receipt and issues of coal and stores verification report, calculate the prices of issues charged out under weighted average method.

1990
April I Opening balance: 100 tons @ Rs. 50 per ton
" 5 Issued 60 tons
" 6 Received 120 tons @ Rs. 50.50 per ton
" 7 Issued 50 tons (the stock verification report reveals a loss of 1 ton)
" 8 Received back from completed job 2 tons previously issued @ Rs. 50.25 per ton.
" 9 Issued 80 tonnes.

Check Your Progress A

1) State whether the following statements are True or False.
   First in First Out method of valuing materials issues is
   suitable in times of rising prices.   ....
   According to LIFO method of pricing, issues are close to
   current economic values.   ....
   Weighted-average method of pricing stores involves
   adding all the different prices and dividing by the number of such
   prices.   ....

2) Fill in the blanks.

   i) First in First Out method of valuing material issues is suitable in times of
      .... prices.
   ii) Last in First Out method is suitable in times of .... prices.
   iii) Weighted average method of valuing material issues is suitable when
      prices ....

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Solution

STORES LEDGER ACCOUNT
(Under FIFO Method)

Name ....

Description ....

Location code ....

Maximum level ....

Minimum level ....

Ordering level ....

Re-order quantity ....

Date	Receipts				Issues				Balance		
	G.R.N. No.	Qty.	Rate Rs.	Amount Rs.	R.S. No.	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate Rs.	Amount Rs.
August 1	—	1,500	12.00	18,000	—	—	—	—	1500	12.00	18,000
August 2	—	—	—	—	—	100	12.00	1,200	1400	12.00	16,800
August 3	—	—	—	—	—	250	12.00	3,000	1150	12.00	13,800
August 4	—	—	—	—	—	300	12.00	3,600	850	12.00	10,200
August 5	—	400	12.50	5,000	—	—	—	—	1250 {850 {400	12.00 12.50	15,200
August 9	—	—	—	—	—	300	12.00	3,600	950 {550 {400	12.00 12.50	11,600
August 10	—	200	12.50	2,500	—	—	—	—	1150 {550 {400 {200	12.00 12.50 12.50	14,100
August 11	—	—	—	—	—	300	12.00	3,600-	850 {250 {400 {200	12.00 12.50 12.50	10,500

Date	Receipts				Issues				Balance		
	G.R.N. No.	Qty.	Rate Rs.	Amount Rs.	R.S. No.	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate Rs.	Amount Rs.
August 12	—	20	12.00	240	—	—	—	—	870 {20, 250, 400, 200}	12.00, 12.50, 12.50, 12.50	10,740
August 13	—	—	—	—	—	450 {20, 230, 200}	12.00, 12.00, 12.50	240, 2,760, 2,500 } 5,500	420 {20, 200, 200}	12.00, 12.50, 12.50	5,240
August 16	—	500	13.00	6,500	—	—	—	—	920 {20, 200, 200, 500}	12.00, 12.50, 12.50, 13.00	11,740
August 18	—	—	—	—	—	400 {10, 200, 190}	12.00, 12.50, 12.50	120, 2,500, 2,375 } 4,995	910 {20, 200, 200, 500}	12.00, 12.50, 12.50, 13.00	11,620
August 20	—	60	12.00	720	—	—	—	—	510 {10, 500}	12.50, 13.00	6,625
									570 {60, 10, 500}	12.00, 12.50, 13.00	7,345
August 22	—	—	—	—	—	300 {60, 10, 230}	12.00, 12.50, 13.00	720, 125, 2,990 } 3,835	270	13.00	3,510
August 26	—	400	12.00	4,800	—	—	—	—	670 {270, 400}	13.00, 12.00	8,310
August 29	—	—	—	—	—	200	13.00	2,600	470	13.00	5,710
		3,080		37,760		2,610		32,050	470		5,710

Solution

Name ....

Description ....

Location code ....

Maximum level ....

Min'num level ....

Ordering level ....

Re-order quantity ....

STORES LEDGER ACCOUNT
(Under weighted average method)

Date	Receipts				Issues				Balance		
	G.R.N. No.	Qty.	Rate Rs.	Amount Rs.	R.S. No.	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate Rs.	Amount Rs.
1990											
April 1	—	100	50.00	5,000.00	—	—	—	—	100	50.0000	5,000.00
April 5	—	—	—	—	—	60	50.0000	3,000.00	40	50.0000	2,000.00
April 6	—	120	50.50	6,060.00	—	—	—	—	160	50.3750	8,060.00
April 7	—	—	—	—	—	50	50.3750	2,518.75	110	50.3750	5,541.25
April 7	—	—	—	—	—	1 (loss)	50.3750	50.38	109	50.3750	5,490.87
April 8	—	2	50.25	100.50	—	—	—	—	111	50.3727	5,591.37
April 9	—	—	—	—	—	80	50.3727	4029.81	31	50.3727	1,561.56
		222		11,160.50		191		9,598.94	31		1,561.56

5.5 LET US SUM UP

For ascertaining the cost of materials, the purchase price of materials needs certain . adjustments like cash discount, cost of transportation, cost of containers, etc.

Materials may be purchased at different rates from time to time. Hence, when they are issued to production a problem arises with regard to the price at which they should be recorded. This can be done at actual cost, at average cost, at notional cost or at market price. Accordingly, a number of methods of pricing the issues have been developed. Of these, FIFO, LIFO, and weighted average price are the three prominent methods.

Under FIFO (First in First Out) method of pricing the materials, the cost of the earliest consignment is taken first and when that consignment is exhausted, the price of the next consignment is adopted and so on. This method of pricing is suitable in times of falling prices.

Under LIFO (Last in First Out) method, the cost of the latest consignment is taken first and when that consignment is exhausted, the price of previous consignment is adopted. Materials cost under this method is closer to current price level.

Under weighted average method, the price is calculated by dividing the total cost of the materials in stock by the total quantity. This method of pricing of materials gives better results because it tends to smooth out fluctuations in prices by taking the average of prices of various lots in stock. This method is mostly used by several organisations because it satisfies most of the conditions of a good method of valuing material issues.

5.6 KEY WORDS

FIFO (First in First out): A method of pricing the issue of materials at actual cost in the chronological order of the purchases.

LIFO (Last in First Out): A method of pricing the issue of materials at actual cost in of the latest purchase and when that lot is exhausted, the price of the previous consignment is adopted, and so on.

Weighted Average Price: The price which is calculated by dividing the total cost of materials in stock from which the materials are issued by the total quantity of materials in that stock.

5.7 ANSWERS TO CHECK YOUR PROGRESS

A   1   (i) False (ii) True (iii) False
    2   (i) falling prices (ii) rising prices (iii) fluctuate considerably

5.8 TERMINAL QUESTIONS/EXERCISES

Questions
1) Discuss how you would treat.discount, transportation costs, and the cost of containers for acscertaining the cost of materials.

2) Indicate the different methods used for pricing the issue of materials.

3) Explain with examples the following methods of pricing the issues of materials:
   a) LIFO.
   b) FIFO
   Under conditions of rising prices, which of these two methods would you recommend and why?

4) What is meant by weighted average method of valuing stores issues? What are its advantages?

Exercises

1) The following quotation is received from a supplier in respect of material X.

	Rate per kg.
	Rs.
Lot price 100 kg.	5.00
500 kg.	4.50
1,000 kg.	4.00

Trade discount is 20%. Cash discount of 5% is allowed if payment is made within 15 days. One container is required for every 100 kg of material and containers are charged at Rs. 10.00 each but credited at Rs. 9.00 if returned within three months.

	Rs.
Transport charges for any order	50
Storage charges	15

Calculate the total material cost for 500 kgs. and ascertain the rate per kg of the material when the purchaser decides to purchase 500 kgs. of the material.

(**Answer:** Total cost Rs. 1,870; Cost per kg Rs. 3.74)

2) From the following transactions, prepare separately the stores ledger accounts using the following pricing methods:

i) FIFO and ii) LIFO

January	1	Opening balance 100 units @ Rs. 5 each
"	5	Received 500 units @ Rs. 6 each
,	30	'Issued 300 units
February	5	Issued 200 units
"	6	Received 500 units @ Rs. 5 each
March	10	Issued 300 units
"	12	Issued 250 units

(**Answer:** Closing balance under both methods 50 units @ Rs. 5 each. Total cost Rs. 250).

-3) Following transactions are recorded in respect of a store item.

Date	Receipts kg.	Rate per unit Rs	Issues kg.
3-12-1984	400	1.00	—
11-12-1985	600	1.20	—
16-12-1984	—	—	500
19-12-1984	500	1.30	—
30-12-1984	—	—	400

Prepare a stores ledger account pricing the issues at weighted average method.

(**Answer:** Balance qty. 600 units, Rate Rs. 1.21 per unit Total Rs. 726).

4) The following receipts and issues were made of a new item of stores:

	Receipts		Issues
	(units)	Cost (Ws.)	**(units)**
1st January	1,000	15,000	—
1st February	1,000	12,000	—
28th February	—	—	1,200
1st March	1,000	18,000	—
31st March	—	—	1,200

,'Tabulate the values of:

i) Issue made on 28 February
ii) Resulting stock on 28 February
iii) Issue made on 31st March
iv) Resulting stock on 31st March

according to:
a) LIFO basis
b) FIFO basis
c) Weighted average cost basis

Answers:	(a) Rs.	(b) Rs.	(c) Rs.
i)	15,000	17,400	16,200
ii)	12,000	9,600	10,800
iii)	21,000	16,800	19,200
iv)	9,000	10,800	9,600

5) The following information is available from the records of oil company for the month of June 1989.

Opening stock of oil 1,00,000 litres at Rs. 3 per litre. Purchases (Including freight etc.) made

June 01   2,00,000 litres @ Rs. 2.85 per litre
June 30   1,00,000 litres @ Rs. 3.03 per litre

Closing stock June 30	1,30,000 litres
Sales	Rs. 9,45,000
Administration cost	25,000

Compute the following under FIFO Method

a) Value of inventory on June 30;
b) Cost of goods sold for the month of June;
c) Profit or loss for the month

Answer: (a) Rs. 3,88,500 (b) Rs. 7,84,500 (c) Rs. 1,35,500

6) · The following is an extract of the record of receipts and issues of a chemical coded as chemical 0 during the month.

February	01	Opening balance 500 tonnes @ Rs. 200
"	03	Issue 70 tonnes
"	04	Issue 100 tonnes
"	08	Issue 80 tonnes
"	13	Received from supplier 200 tonnes @ Rs. 190
"	14	Returned from works 15 tonnes
"	16	Issue 180 tonnes
"	20	Received from supplier 240 tonnes @ Rs. 190
"	24	Issue 300 tonnes
"	25	Received from supplier 320 tonnes @ Rs. 190
"	26	Issue 115 tonnes
"	27	Returned from works: 35 tonnes
"	·28	Received from supplier 100 tonnes @ Rs. 190

Issues are to. be priced on FIFO method. Stock verifier found shortage of 10 tonnes on 22nd. Draw up priced stores ledger card.

(Answer: Closing balance 555 units Rs. 1,05,450)

Note: These questions will help you to understand the unit better. Try to write
answers for them. But do not submit your answers to the University.
These are for your practice only.