

MEASURING AND REPORTING INVENTORIES

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Definition of Inventory

Inventories are assets that are being :

- held in the form of finished goods with the intention of selling in the ordinary course of business, or
- processed for such sale, or
- held in the form of materials or supplies to be consumed in the production process.

Inventory Classification

- A manufacturing company will normally have three types of inventory:
 - i. Raw materials (include stock in hand and goods in transit if the seller has the title),
 - ii. Work-in-process and
 - iii. Finished goods (include stock in hand and stock of goods out on assignment).

- A merchandising company will have only finished goods inventory.

Inventory Accounting System

Proper Selection of Inventory System:

- Just-in-time (JIT) inventory Order System – help to reduce the inventory levels for preventing excessive accumulation of inventory items
- Perpetual System – maintains a continuous record of inventory changes
- Periodic System – updates inventory records in the ledger only periodically

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Proper Selection Cost Flow Formula

- Specific Identification
- First-in, First-out (FIFO)
- Last-in, First-out (LIFO)
- Average Cost (Weighted Average or Moving Average)

Perpetual System

- Perpetual inventory system updates inventory accounts after each purchase or sale or issue
- Inventory subsidiary ledger is updated after each transaction
- Quantity of inventories are updated continuously

Periodic System

- ❖ Periodic inventory system records inventory purchase or sale in “Purchase Account”
- ❖ Purchase Account is updated continuously, however, Inventory Account is updated on a periodic basis, at the end of each accounting period say monthly, quarterly or yearly.
- ❖ Inventory subsidiary ledger is not updated after each purchase or sale of inventory.
- ❖ The quantity of inventory is not updated continuously rather it is updated on a periodic basis.

Specific Identification Method

Under this method each item purchased and sold is individually identified. It is helpful for goods that are not ordinarily interchangeable and that are produced and segregated for specific requirements.

- Advantages:
 - (a) matches actual costs with revenue; and
 - (b) ending inventory reported at specific cost.

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Disadvantages:

- a) may be difficult to implement and maintain;
- b) may lead to income manipulation; and
- c) may be difficult to allocate certain costs to specific inventory items.

First-in, First-out (FIFO) Method:

The First-in First-out (FIFO) method of assigning cost assumes that the first items purchased (first in) were the first sold (first out). That is under this approach the inventories purchased or acquired first are sold or used or dispose of first.

Therefore :

- i. Materials issues are priced at the oldest costs;
- ii. Charge to production for material cost is at the oldest prices of materials in stocks; and
- iii. Closing stock is valued at the latest price paid. Since the last items purchased are the ones on hand at the end of period; and
- iv. Does not permit manipulation of net income.

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In periods of rising prices, the FIFO method produces higher profits and results in higher tax liability because lower cost is charged to production. Conversely, *in periods of falling prices*, the FIFO method produces lower profits and results lower taxes because they are derived from a higher cost of goods sold.

- **Disadvantages are**

- (a) current costs not matched to current revenues as oldest cost of inventory is used with current revenue;
- (b) when prices are changing rapidly, gross profit and net income are distorted.

Last-in, First-out (LIFO) Method

This method operates just reverse order of FIFO method. The Last-in First-out (LIFO) method of assigning inventory cost assumes that the last items purchased (last in) are the first items sold (first out).

Therefore:

- i. Materials issues are priced at the actual costs,
- ii. Charge to production for materials cost is at the latest prices paid; and
- iii. Closing stock valuation is at the oldest prices paid and is completely out of line with the current prices. Thus when an inventory is valued by the LIFO method the company also should disclose the current replacement cost of the inventory in a note to the financial statement.

Last-in, First-out (LIFO) Method

In times of rising prices, profits and taxes would be lower than under FIFO method. In periods of falling, the closing stock would be valued at higher price and thus the profits and taxes would also be higher.

Disadvantages are :

- (a) it does not represent actual inventory flows reliably;
- (b) costs assigned to ending inventory do not represent recent cost of inventory on hand; and
- (c) can distort reported income on the income statement. That's why it is not acceptable to IFRS.

Weighted Average Method

- This method gives due weight to the quantities held at each price when calculating the average price. The weighted average price is calculated by dividing the total cost of material in stock (from which the material to be issued) by the total quantity of material in that stock. The simple formula is that weighted average price at any time is the balance value figure divided by the balance units figure.
- A shortcoming in the weighted average cost method is that changes in current replacement costs of inventory are concealed because these costs are averaged with older costs. Thus neither the valuation of ending inventory nor the cost of goods sold will quickly reflect in the current replacement cost of inventories.

Justification for using weighted Average Method

- (a) Reasonable to cost inventory based on an average cost;
- (b) costs assigned closely follows the actual physical flow of inventory;
- (c) simple to apply, objective, less subject to income manipulation;
- (d) ending inventory cost on the balance sheet is made up of average costs; and
- (e) this method is used with perpetual records both quantity and amount.

Some Relations

- **Cost of Goods Sold =**

Cost of Beginning Inventory + Cost of Goods Purchased – Cost of Ending Inventory

- **Cost of Ending Inventory =**

Cost of Beginning Inventory + Cost of Goods Purchased - Cost of Goods Sold

- **Gross Profit = Sales - Cost of Goods Sold**

FORMAT OF STORE LEDGER SYSTEM

Date	Transactions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt

Exercise

2012

1 July	Opening stock	500 units @ Tk.20 each
10 July	Purchase	400 units @ Tk.21 each
15 July	Issue	600 units
20 July	Purchase	800 units @ Tk.24 each
25 July	Issue	500 units.

Determine the cost of ending inventory and cost of goods sold by using the following methods: (a) FIFO; (b) LIFO & (c) Weighted Average methods.

STORE LEDGER UNDER FIFO METHOD

Date	Transa- ctions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt
2012												
July 01	Balance									500	20	10,000
July 10	Purchase		400	21	8,400					500	20	
										400	21	
July 15	Issue						500	20				18,400
							100	21	12,100	300	21	
												6,300
July 20	Purchase		800	24	19,200					300	21	
										800	24	
												25,500
July 25	Issue						300	21				
							200	24	11,100	600	24	14,400
		Purchase			27,600	Cost of Goods Sold			23,200			

STORE LEDGER UNDER LIFO METHOD

Date	Transa- ctions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt
2012												
July 01	Balance									500	20	10,000
July 10	Purchase		400	21	8,400					500	20	10,000
										400	21	8,400
July 15	Issue						400	21	8,400			
							200	20	4,000	300	20	6,000
July 20	Purchase		800	24	19,200					300	20	6,000
										800	24	19,200
July 25	Issue						500	24	12,000	300	20	6,000
										300	24	7,200
												13,200
		Purchase			27,600	Cost of Goods Sold			24,400			

STORE LEDGER UNDER WEIGHTED AVERAGE METHOD

Date	Transactions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt
2012												
July 01	Balance									500	20	10,000
July 10	Purchase		400	21	8,400					900	20.444444	18,400
July 15	Issue						600	20.444444	12,267	300	2.0444444	6,133
July 20	Purchase		800	24	19,200					1100	23.03	25,333
July 25	Issue						500	23.03	11,515	600	23.03	13,818
		Purchase			27,600	Cost of Goods Sold			23,782			

Calculation of Cost of Goods Sold

Formula :

Cost of Beginning Inventory + Cost of Goods Purchased – Cost of Ending Inventory

- **In FIFO method :** $(10,000 + 27,600 - 14,400) = 23,200$
- **In LIFO method :** $(10,000 + 27,600 - 13,200) = 24,400$
- **In Weighted Average method :** $(10,000 + 27,600 - 23,774) = 13,826$

Calculation of Cost of Ending Inventory

Formula :

Cost of Beginning Inventory + Cost of Goods Purchased - Cost of Goods Sold

In FIFO method : $(10,000+27,600 -23,200) = 14,400$

In LIFO method : $(10,000+27,600 -24,400) = 13,200$

In Weighted Average Method:

$(10,000+27,600 -13,826) = 23,774$

Question – October - 21 - (6 - c)

From the following information, compute the cost of goods sold and the value of ending inventory under:

i) FIFO

ii) LIFO and

iii) Weighted Average Cost Method

June 01, 2021 : Beginning inventory of 100 units @ Tk.10

June 15, 2021 : Purchase 200 units @ Tk.11

June 24, 2021 : Purchase 300 units @ Tk.12

June 26, 2021 : Sales 550 units @ Tk.18

June 30, 2021 : Purchase 440 units @ Tk.13

Solution under FIFO Method

Date	Transactions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt.
2021												
June, 01	Balance									100	10	1,000
June, 15	Purchase		200	11	2,200					100	10	1,000
										200	11	2,200
June, 24	Purchase		300	12	3,600					100	10	1,000
										200	11	2,200
										300	12	3,600
June, 26	Sales						100	10	1,000			
							200	11	2,200			
							250	12	3,000	50	12	600
June, 30	Purchase		440	13	5,720					50	12	600
										440	13	5,720
			Purchase		11,520	Cost of Goods Sold			6,200			6,320

Solution under LIFO Method

Date	Transactions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt
2021												
June, 01	Balance									100	10	1,000
June, 15	Purchase		200	11	2,200					100	10	1,000
										200	11	2,200
June, 24	Purchase		300	12	3,600					100	10	1,000
										200	11	2,200
										300	12	3,600
June, 26	Sales						300	12	3,600			
							200	11	2,200			
							50	10	500	50	10	500
June, 30	Purchase		440	13	5,720					50	10	500
										440	13	5,720
			Purchase =		11,520	Cost of Goods Sold =			6,300			6,220

Solution under Weighted Average Method

Date	Transactions	Receive				Issue				Balance		
		Ref	Qty.	Rate	Amt.	Ref	Qty	Rate	Amt	Qty	Rate	Amt
2021												
June, 01	Balance									100	10	1,000
June, 15	Purchase		200	11	2,200					300	10.6667	3,200
June, 24	Purchase		300	12	3,600					600	11.3333	6,800
June, 26	Sales Purchase						550	11.3333	6,233	50	11.3333	567
June, 30			440	13	5,720					490	12.8306	6,287
			Purchase =		11,520		Cost of Goods Sold =		6,233			6,287

Question – May 22 (6 - c)

From the following information, determine the cost of goods sold and gross profit under FIFO and ii) Weighted Average Method as per periodic inventory system.

June 01, 2021	: Beginning inventory 550 units @Tk.75
June 08, 2021	: Sale 450 units @Tk.90
June 10, 2021	: Purchase 900 units @Tk.80
June 20, 2021	: Sale 750 units @Tk.95
June 23, 2021	: Purchase 300 units @Tk.85
June 25, 2021	: Sale 400 units @Tk.95
June 27, 2021	: Purchase 700 units @Tk.70
June 30, 2021	: Sale 600 units @Tk.90

Solution:

Workings – 1 (Opening Inventory):

Date	Particulars	Units Available	Unit Price (Tk.)	Amount in Taka
June 01, 2021	Beginning inventory	550	75.00	41,250

Workings – 2 (Purchased during the Month):

Date	Particulars	Units	Unit Price (Tk.)	Amount in Taka
June 10, 2021	Purchase	900	80.00	72,000
June 23, 2021		300	85.00	25,500
June 27, 2021		700	70.00	49,000
Total		1,900		<u>1,46,500</u>

Contd....

Workings – 3 (Sales during the month):

Date	Particulars	Units	Unit Price (Tk.)	Amount in Taka
June 08, 2021	Sales	450	90.00	40,500
June 20, 2021		750	95.00	71,250
June 25, 2021		400	95.00	38,000
June 30, 2021		600	90.00	54,000
Total		2,200		2,03,750

Workings – 4 (Cost of goods available for sale):

Sl. No.	Particulars	Units	Amount in Taka
1	Beginning inventory	550	41,250
2	Purchased during the month	1,900	1,46,500
Total			1,87,750

Under FIFO Method:

Ending Inventory:

Date	Units	Unit Price (Tk.)	Amount in Taka
June 30, 2021	(550 + 1,900 -2,200) = 250	70.00	17,500

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	41,250
2	Purchased during the month	1,46,500
3	Cost of goods available for sale (W – 3)	1,87,750
4	Less : Ending Inventory	(17,500)
5	Cost of goods sold	1,70,250

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		2,03,750
2	Cost of Goods Sold		(1,70,250)
3	Gross Profit		33,500

Under Weighted Average Method:

Ending inventory:

Sl. No.	Particulars	Units	Amount in Taka
1	Beginning inventory	550	41,250
2	Purchase during the month	1,900	1,46,500
3	Total Units received during the month and its cost	2,450	1,87,750
4	Per units Weighted Average Cost (Tk. 1,87,750 / 2450 Units)		76.6326
5	Cost of Ending Inventory (250 units @ Tk. 76.6326)	250	19,158

Contd....

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	41,250
2	Purchased during the month	1,46,500
3	Cost of goods available for sale (W – 3)	1,87,750
4	Less : Ending Inventory	(19,158)
	Cost of goods sold	168,592

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		2,03,750
2	Cost of Goods Sold		(1,68,592)
3	Gross Profit		35,158

Question – Oct'23 (4 - b)

From the following information, determine the value of ending inventory, COGS, and gross profit as per FIFO, LIFO and Average Method under Perpetual Inventory System:

May 01, 2023	Beginning inventory 200 units @ BDT 60.
May 03, 2023	Purchase 400 units @ BDT 65.
May 10, 2023	Sale 450 units @ BDT 85.
May 15, 2023	Purchase 500 units @ BDT 65.
May 20, 2023	Sale 400 units @ BDT 82.

Solution

Workings – 1 (Opening Inventory):

Date	Particulars	Units Available	Unit Price (Tk.)	Amount in Taka
May 01, 2023	Beginning inventory	200	60	12,000

Workings – 2 (Purchased during the Month):

Date	Particulars	Units	Unit Price (Tk.)	Amount in Taka
May 03, 2023	Purchase	400	65	26,000
May 15, 2023		500	65	32,500
Total		900		<u>58,500</u>

Contd....

Workings – 3 (Sales during the month):

Date	Particulars	Units	Unit Price (Tk.)	Amount in Taka
May 10, 2023	Sales	450	85	38,250
May 20, 2023		400	82	32,800
Total		850		<u>71,050</u>

Workings – 4 (Cost of goods available for sale):

Sl. No.	Particulars	Units	Amount in Taka
1	Beginning inventory	200	12,000
2	Purchased during the month	900	58,500
Total			<u>70,500</u>

Under FIFO Method:

Ending Inventory:

Date	Units	Unit Price (Tk.)	Amount in Taka
May 20, 2023	(200 + 900 - 850) = 250	65	16,250

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	12,000
2	Purchased during the month	58,500
3	Cost of goods available for sale (W – 4)	70,500
4	Less : Ending Inventory	16,250
5	Cost of goods sold	54,250

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		71,050
2	Cost of Goods Sold		(54,250)
3	Gross Profit		16,800

Under LIFO Method:

Ending Inventory:

Date	Units	Unit Price (Tk.)	Amount in Taka
May 20, 2023	$(200+400-450)=150$	60	9,000
	$(500-400)=100$	65	6,500
	250		15,500

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	12,000
2	Purchased during the month	58,500
3	Cost of goods available for sale (W – 4)	70,500
4	Less : Ending Inventory	15,500
5	Cost of goods sold	55,000

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		71,050
2	Cost of Goods Sold		(55,000)
3	Gross Profit		16,050

Under Weighted Average Method:

Ending inventory:

Sl. No.	Particulars	Units	Amount in Taka
1	Beginning inventory	200	12,000
2	Purchase during the month	900	58,500
3	Total Units received during the month and its cost	1,100	70,500
4	Per units Weighted Average Cost (Tk. 70,500/ 1,100 Units)		64.091
5	Cost of Ending Inventory (250 units @ Tk. 64.091)	250	16,023

Contd....

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	12,000
2	Purchased during the month	58,500
3	Cost of goods available for sale (W – 4)	70,500
4	Less : Ending Inventory	(16,023)
5	Cost of goods sold	54,477

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		71,050
2	Cost of Goods Sold		(54,477)
3	Gross Profit		16,573

Question – May - 24 - (4b)

From the following information, determine the Cost of Goods Sold, Value of Ending Inventory, and Gross Profit under i) FIFO Method and ii) Weighted Average Method under Perpetual Inventory System:

- i) December 01, 2023: Beginning inventory 950 units @ Tk.48 per unit.
- ii) December 08, 2023: Sales 350 units @ Tk.70 per unit.
- iii) December 10, 2023: Sales 400 units @ Tk.72 per unit.
- iv) December 15, 2023: Purchase 500 units @ Tk.52 per unit.
- v) December 20, 2023: Sales 450 units @ Tk.65 per unit.
- vi) December 22, 2023: Purchase 300 units @ Tk.55 per unit.
- vii) December 25, 2023: Sales 350 units @ Tk.75 per unit.

Solution- May - 24 - (4b)

Workings – 1 (Opening Inventory):

Date	Particulars	Units Available	Unit Price (Tk.)	Amount in Taka
Dec. 01, 2023	Beginning inventory	950	48	45,600

Workings – 2 (Purchased during the Month):

Date	Particulars	Units	Unit Price (Tk.)	Amount in Taka
Dec. 15, 2023	Purchase	500	52	26,000
Dec. 22, 2023		300	55	16,500
Total		800		<u>42,500</u>

Contd....

Workings – 3 (Sales during the month):

Date	Particulars	Units	Unit Price (Tk.)	Amount in Taka
Dec. 08, 2023	Sales	350	70	24,500
Dec. 10, 2023		400	72	28,800
Dec. 20, 2023		450	65	29,250
Dec. 25, 2023		350	75	26,250
Total		1,550		<u>1,08,800</u>

Workings – 4 (Cost of goods available for sale):

Sl. No.	Particulars	Units	Amount in Taka
1	Beginning inventory	950	45,600
2	Purchased during the month	800	42,500
Total			<u>88,100</u>

Under FIFO Method:

Ending Inventory:

Date	Units	Unit Price (Tk.)	Amount in Taka
Dec. 31, 2023	(950 + 800 – 1,550) = 200	55	11,000

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	45,600
2	Purchased during the month	42,500
3	Cost of goods available for sale (W – 4)	88,100
4	Less : Ending Inventory	11,000
5	Cost of goods sold	77,100

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		1,08,800
2	Cost of Goods Sold		(77,100)
3	Gross Profit		31,700

Under LIFO Method:

Ending Inventory:

Date	Units	Unit Price (Tk.)	Amount in Taka
Dec. 31, 2023	$(950-350-400)=200$	48	9,600
	$(500-450-50)=0$		
	$(300-300)=0$		
	200		9,600

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	45,600
2	Purchased during the month	42,500
3	Cost of goods available for sale (W – 4)	88,100
4	Less : Ending Inventory	9,600
5	Cost of goods sold	78,500

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		1,08,800
2	Cost of Goods Sold		(78,500)
3	Gross Profit		30,300

Under Weighted Average Method:

Ending inventory:

Sl. No.	Particulars	Units	Amount in Taka
1	Beginning inventory	950	45,600
2	Purchase during the month	800	42,500
3	Total Units received during the month and its cost	1,750	88,100
4	Per units Weighted Average Cost (Tk. 88,100/1,750 Units)		50.343
5	Cost of Ending Inventory (200 units @ Tk. 50.343)	200	10,069

Contd....

Cost of goods sold:

Sl. No.	Particulars	Amount in Taka
1	Opening Inventory	45,600
2	Purchased during the month	42,500
3	Cost of goods available for sale (W – 4)	88,100
4	Less : Ending Inventory	(10,069)
5	Cost of goods sold	78,031

Contd....

Gross Profit:

Sl. No.	Particulars	Amount in Taka	Amount in Taka
1	Sales		108,800
2	Cost of Goods Sold		(78,031)
3	Gross Profit		30,769

Journal Entries

Date	Accounts and Explanation	L.F.	Debit	Credit
Dec. 08, 2023	Accounts Receivable Account	Dr.	24,500	
	Sales Account	Cr.		24,500
	(As goods sold in credit)			
Dec. 10, 2023	Accounts Receivable Account	Dr.	28,800	
	Sales Account	Cr.		28,800
	(As goods sold in credit)			
Dec. 15, 2023	Purchase Account	Dr.	26,000	
	Accounts Payable Account	Cr.		26,000
	(As goods purchased in credit)			
Dec. 20, 2023	Accounts Receivable Account	Dr.	29,250	
	Sales Account	Cr.		29,250
	(As goods sold in credit)			
Dec. 22, 2023	Purchase Account	Dr.	16,500	
	Accounts Payable Account	Cr.		16,500
	(As goods purchased in credit)			
Dec. 25, 2023	Accounts Receivable Account	Dr.	26,250	
	Sales Account	Cr.		26,250
	(As goods sold in credit)			

Questions

- Describe the importance of Inventory Management.(April – 16)
- Why FIFO method is better for Inventory Management?(April -16)
- How inventory valuation affects the preparation of Financial statements? (April -16)
- Describe the importance of proper Inventory valuation.(Oct. 15)
- What is FIFO method of determining inventory cost? Describe the advantages and disadvantages of FIFO method.(Oct. -15)
- What is the difference between FIFO and LIFO method for determining inventory cost? (Oct. -15)
- What is inventory valuation? (March -15)
- Why inventory management is required for any organization? (March -15)
- Define Inventory. What are the methods of Inventory Valuation? (March – 14)

Questions

- What do you mean by Inventory? How does inventory valuation affect the financial statements? (Oct. - 23)
- Discuss in brief the Inventory Valuation methods. (May – 22)
- What is Inventory Valuation? (Oct. - 21)
- Why FIFO method is better for inventory management?(Oct. - 21)
- Why proper valuation of inventory is important? (Oct. – 19)
- What are the differences between periodic and perpetual inventory systems? (Oct. – 19)
- State, in brief, different methods of inventory (Sept. - 18)
- What are the differences between perpetual and periodic inventory systems? (Sept. - 18)
- What is inventory valuation? (Oct. – 17)
- Why FIFO method is better for inventory management? (Oct. – 17)
- State in brief the different methods of inventory valuation.(April – 17)
- What are the differences between FIFO and LIFO? . (April – 17)

Thank You All

Any Question?