# Depreciation

# DIB Question Solution

### Presented by:

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# Depreciation

Depreciation in accounting refers to an indirect and explicit cost that a company incurs every year while using a fixed asset such as equipment, machinery, or expensive tools. It is the depleting value of a tangible asset. In the case of intangible assets, the act of depreciation is called amortization. Thus-

- Depreciation is a decrease in the book value of fixed assets.
- Depreciation involves loss of value of assets due to the passage of time and obsolescence.
- Depreciation is an ongoing process until the end of the life of assets.

# Depreciation in Accounting

Companies depreciate to allocate the cost of a **tangible asset**, over its **useful life**. When the asset is used, wear and tear occur from erosion, dust, and decay. Despite proper maintenance and precaution, it is impossible to preserve the original form and quality of the asset. Therefore, depreciation expense is used to recognize the amount of wear and tear. Firms depreciate because the technology used in the machine may become obsolete, or the asset may become inoperable due to an accident.

In depreciation, there is no cash outflow. Instead, while accounting, this expense is transferred to the **accumulated depreciation**. It is an essential part of accounting that facilitates companies to record the real-time **book value** of tangible assets. Also, this sum can be used for purchasing a new asset in the future. Now, let us understand some of the terminologies used in this concept:

- **Fixed Asset Cost:** It is the cost at which the organization buys a tangible asset.
- **Salvage Value:** The residual cost can be recovered from selling the asset after its useful life.
- **Useful Life of Fixed Asset:** It is the estimated number of years for which an asset remains productive and efficient.
- **Depreciation Rate:** It is the percentage charged as depreciation on the fixed asset.

# Causes of depreciation

**Physical Deterioration**-This physical deterioration leads to a decrease in the asset's value.

**Obsolescence**-Technological advancements can quickly render certain assets obsolete.

**Expiry of Useful Life**

**Depletion**-Natural resources

**Accidental Damage or Breakdown**

**Deterioration of Quality**

**Environmental Factors**

# Factors affecting depreciation

- **The original Cost of the asset.**
- **The estimated salvage value at the end of its life**
- **The estimated useful life of the asset**
- **The amount to be expended to make the assets workable say, transport cost, installation cost, sale tax, training cost, assembling cost etc.**
- **Depreciation Method to be used**
- **Market Conditions**
- **Technological Advancements**

# Capital Expenditure Vs Revenue Expenditure

- Capital expenditures (CAPEX) are funds used by a company to acquire, upgrade, and maintain physical assets such as equipment.
- Capital expenditures are typically one-time large purchases of fixed assets that will be used for revenue generation over a longer period.
- Revenue expenditures are the ongoing operating expenses, which are short-term expenses used to run the daily business operations.

**Types of Revenue Expenditures**:

      Salary & wages, Utilities, Overhead Expenses

**Types of Capital Expenditures:**

      Factory upgrade or expansion, Vehicles, Manufacturing equipment

# Capital Expenditure Vs Revenue Expenditure

| Particulars | Capital Expenditure | Revenue Expenditure |
|---|---|---|
| Definition | Expenditure is incurred to acquire assets, and enhance the capacity of an existing asset resulting in increasing its lifespan | Expense incurred to maintain the day to day business activities |
| Tenure | Long term | Short term |
| Value Addition | Enhances the existing asset value | Does not enhance the existing asset value |
| Physical Presence | Has a physical presence except for intangible assets | Does not have a physical presence |
| Occurrence | Non-recurring in nature | Recurring in nature |
| Availability of Capitalization | Yes | No |
| Impact on Revenue | Do not reduce business revenue | Reduce business revenue |
| Potential Benefit | Long-term benefits for business | Short-term benefits for business |
| Appearance | Appears as assets in the balance sheet and some portion in the income statement | Always appears in the income statement |

# Impact of wrong classification

- XYZ limited purchased a machine for its production process on 01.01.2021 for an amount of Tk. 1500,000 of which economic life is 03 years. At the end of the year 2021 it is found that the Accountant wrongly classified the value of the machine as revenue expenditure.

What is the financial impact?

# Impact of wrong classification

Ans:

Since the machine has been purchased for production process and economic life is 03 years it must be treated as capital expenditure(Fixed Asset). But the accountant classified it as revenue expenditure. i.e. Tk. 15,00,000 has been considered as expenses for the year 2021 instead of Tk. 5,00,000. In the year 2021 the profit is understated by Tk. 10,00,000 and next two years will be overstated by Tk. 500,000 each.

# Types of Depreciation Methods

All tangible assets depreciate with time. Therefore, firms use the following five methods to charge for it.

1 • **Straight-Line Method**

2 • **Declining Balance Method**

3 • **Double Declining Balance Method**

4 • **Units of Production Method**

5 • **Sum-of-Years Digits Method**

# Straight-Line Method

This is the simplest method of calculating used most of the time. In SLM, a constant depreciation amount is charged every year. First, corporations have to estimate the salvage (residual) value. The **salvage value** represents the cost the company expects to recover at the end of the machine's useful life. After deducting this residual value from the fixed asset cost, the value acquired is divided by the useful life of the **fixed assets**.

**Formula**: $$Depreciation = \frac{(Cost - Salvage\,Value)}{No.\,of\,Years\,in\,Useful\,Life}$$

# Declining Balance Method

In this method, the depreciated percentage is charged on the net book value of a fixed asset. This net book value is the remaining balance of fixed asset cost after deducting the overall depreciation charged for the previous years. Thus, the depreciable value diminishes every year, and so does the depreciated expense.

**Formula**:

*Depreciation = Net Book Value* **X** *Rate of Depreciation (SLR)*

*Last year additional Depreciation = (Net Book Value – Salvage Value)*

# Double Declining Balance Method

This method works similar to the **declining balance method**; however, it charges double the depreciated rate on the fixed asset's balance or net book value. Therefore, it is also known as an **accelerated method**.

**Formula**:

$$Depreciation\ per\ year = \frac{\{(Cost - Accumulated\ Depreciation)\ X\ 2\}}{No.\ of\ Years\ in\ Useful\ Life}$$

Or,

$$Depreciation\ per\ year = 2\ X\ (Cost - Accumulated\ Depreciation)\ X\ \frac{100\%}{No.\ of\ Years\ (Estimated\ Life)}$$

$$= 2\ X\ Net\ Book\ Value\ X\ Straight\ Line\ Rate\ (SLR)$$

# Units of Production Method

Under this method, the fraction of the number of fixed asset units (machinery) produced per year and the total number of units generated in a lifetime is multiplied with the fixed asset cost to yield the depreciated expense of each year. Hence, if the production decreases, the depreciated cost also steeps down and vice versa.

**Formula:**

$$Depreciation\ per\ Unit = \frac{Fixed\ Asset\ Cost - Salvage\ Value}{Total\ No.\ of\ Units\ Produced\ during\ the\ Useful\ Life}$$

$$Depreciation = No.\ of\ Units\ Produced\ in\ Given\ Year\ \mathbf{X}\ Depreciation\ per\ Unit$$

# Sum-of-Years Digits Method

As the name indicates, this method takes the total useful years. Here the digits are arranged in descending order. Then the remaining number of useful years are divided by this sum and multiplied by 100 to get the depreciated rate for the particular year. Finally, the depreciated expense is computed by multiplying this rate with the remaining fixed asset cost after deducting the salvage value.

**Formula**:

$$Depreciation = [\frac{Useful\ Life\ Remaining}{Sum\ of\ Years\ Digits} \times 100] \times Depreciable\ Fixed\ Asset$$

**Or,**

$$Depreciation = (Cost - Salvage\ Value) \times \frac{Years\ in\ Reverse\ Order}{Sum\ of\ Years\ Digit\ (SYD)}$$

$$= (Cost - Salvage\ Value) \times \frac{Years\ in\ Reverse\ Order}{n(n+1)/2}$$

# May – 2023 (Question no. 4c)

ABC Company purchased a machinery on January 01, 2020 at a price of Tk. 6,50,000/-, useful life of which is 5 years and residual value is Tk. 50,000/-. The transportation cost of the machine was Tk. 20,000/- and the installation cost was Tk. 30,000/-.

Calculate depreciation for the machinery under Diminishing Balance Method.

# Solution
# Diminishing Balance Method

| Depreciation Base = Price + Transportation Cost + Installation Cost | Straight Line Rate |
|---|---|
| = Tk. ( 6,50,000 + 20,000 +30,000) | = 100% ÷ 5 years |
| = Tk. 7,00,000/- | = 20% |

| Year | Depreciation Base (Tk.) | Depreciation per year @ 20% (Tk.) | Accumulated Depreciation/ Salvage Value (Tk.) | Book Value (Tk.) |
|---|---|---|---|---|
| 1 | 7,00,000 | 1,40,000 | 1,40,000 | 5,60,000 |
| 2 | 5,60,000 | 1,12,000 | 2,52,000 | 4,48,000 |
| 3 | 4,48,000 | 89,600 | 3,41,600 | 3,58,400 |
| 4 | 3,58,400 | 71,680 | 4,13,280 | 2,86,720 |
| 5 | 2,86,720 | 57,344 | 4,70,624 | 2,29,376 |
| 5 | | **1,79,376** | **6,50,000** | **50,000** |

# November – 2022 (Question no. 5c)

Anika Furniture Ltd., a furniture wholesaler, acquired a new equipment at a cost of Tk. 20,00,000/- at the beginning of the year. The equipment has an estimated economic life of 04 (Four) years and estimated salvage value of Tk. 2,00,000/-. The president of the company has requested for information regarding alternative depreciation method.

You are requested to determine the annual depreciation expenses and schedule for 4 years as under:

    i.    Straight Line Method
    ii.    Sum of Years Digit Method
    iii.    Reducing Balance Method

# Solution
# Straight Line Method

**Formula:**

*Depreciation = (Cost – Salvage Value) ÷ No. of Years in Useful Life*

Given that,

Cost = Tk. 20,00,000/-

Salvage Value = Tk. 2,00,000/-

No. of Years in Useful Life = 4

So, Depreciation per year = Tk. (20,00,000 – 2,00,000) ÷ 4

= Tk. 18,00,000 ÷ 4

= Tk. 4,50,000/-

# Solution
## Sum of Years Digit Method

**Formula:**

$Depreciation = (Cost - Salvage\ Value)\ X\ (Years\ in\ Reverse\ Order \div SYD)$

Where,

SYD = Sum of Years Digit = $n(n+1) \div 2 = 4(4+1) \div 2 = 10$

Given that,

Cost = Tk. 20,00,000/-

Salvage Value = Tk. 2,00,000/-

No. of Years in Useful Life (n) = 4

So, Depreciation 1$^{st}$ year = Tk. {(20,00,000 – 2,00,000) * (4 ÷ 10)}

= Tk. (18,00,000 X 0.4)

= Tk. 7,20,000/-

# Sum of Years Digit Method Contd…

Depreciation 2$^{nd}$ year = Tk. {(20,00,000 – 2,00,000) X (3 ÷ 10)}

= Tk. (18,00,000 X 0.3)

= Tk. 5,40,000/-

Depreciation 3$^{rd}$ year = Tk. {(20,00,000 – 2,00,000) X (2 ÷ 10)}

= Tk. (18,00,000 X 0.2)

= Tk. 3,60,000/-

Depreciation 4$^{th}$ year = Tk. {(20,00,000 – 2,00,000) X (1 ÷ 10)}

= Tk. (18,00,000 X 0.1)

= Tk. 1,80,000/-

# Solution
## Reducing Balance Method

| Year | Depreciation Base (Tk.) | Depreciation per year @ 25% (Tk.) | Accumulated Depreciation/ (Tk.) | Book Value (Tk.) |
|------|------------------------|-----------------------------------|--------------------------------|------------------|
| 1 | 20,00,000 | 5,00,000 | 5,00,000 | 15,00,000 |
| 2 | 15,00,000 | 3,75,000 | 8,75,000 | 11,25,000 |
| 3 | 11,25,000 | 2,81,250 | 11,56,250 | 8,43,750 |
| 4 | 8,43,750 | 2,10,938 | 13,67,188 | 6,32,812 |
| 4 | | **4,32,812** | **18,00,000** | **2,00,000** |

# October – 2021 (Question no. 4d)

A transport company purchased 03 (Three) buses of which are summarized as under:

| Bus | Date of Acquisition | Cost (Tk.) | Useful Life | Salvage Value (Tk.) | Depreciation Method |
|-----|---------------------|------------|-------------|---------------------|---------------------|
| 1 | 01.01.2015 | 73,00,000 | 5 Years | 3,00,000 | Straight Line |
| 2 | 01.01.2016 | 62,00,000 | 4 Years | 2,00,000 | Double Declining Balance |
| 3 | 01.01.2016 | 70,50,000 | 5 Years | 50,000 | Unit of Activity |

For bus 3, total kilometers were expected to be 1,20,000. Actual kilometers of use were 24,000 in 2016; 34,000 in 2017; 30,000 in 2018; 20,000 in 2019 and 12,000 in 2020

Requirement: Prepare depreciation schedule for each of the buses.

# Solution
## Bus-1: Straight Line Method

**Formula:**

*Depreciation = (Cost – Salvage Value) ÷ No. of Years in Useful Life*

Given that,

      Cost = Tk. 73,00,000/-

      Salvage Value = Tk. 3,00,000/-

      No. of Years in Useful Life = 5

So, Depreciation per year = Tk. (73,00,000 – 3,00,000) ÷ 5

                 = Tk. (70,00,000 ÷ 5)

                 = Tk. 14,00,000/-

# Solution
# Bus-2: Double Declining Balance Method

**Formula:**

*Depreciation per year = {(Net Book Value) **X** 2} ÷ No. of Years in Useful Life*

*Or, Depreciation per year = (2 **X** SLR) **X** Net Book Value*

Where,

Net Book Value = Cost - Accumulated Depreciation

SLR = Straight Line Rate = 100% ÷ Number of Years (Estimated Life)

Given that,

Cost = Tk. 62,00,000/-

Salvage Value = Tk. 2,00,000/-

No. of Years in Useful Life (n) = 4

So, SLR = 100% ÷ 4 = 25%

# Double Declining Balance Method Contd…

Depreciation for year 2016 = Tk. {(2 X SLR) X Net Book Value}

= Tk. {(2 X 25%) X (62,00,000-0)}

= Tk. 31,00,000/-

Depreciation for year 2017 = Tk. {(2 X SLR) X Net Book Value}

= Tk. {(2 X 25%)X (62,00,000-31,00,000)}

= Tk. 15,50,000/-

Depreciation for year 2018 = Tk. {(2 X SLR) X Net Book Value}

= Tk. {(2 X 25%)X (62,00,000-31,00,000-15,50,000)}

= Tk. 7,75,000/-

# Double Declining Balance Method Contd…

Depreciation for year 2019

    = Tk. {(2 X SLR) X Net Book Value}

    = Tk. {(2 X 25%) X (62,00,000-31,00,000-15,50,000-7,75000)}

    = Tk. 3,87,500/-

But we know that it has salvage value of Tk.2,00,000.

So, Depreciation For the Year 2019 would be

    = Tk. (62,00,000-31,00,000-15,50,000-7,75000-2,00,000)

    = Tk. 5,75,000/-

# Solution
## Bus-3: Unit of Activity Method

**Formula:**

*Depreciation per Unit = (Cost - Salvage Value) ÷ Estimated Output by Asset*

Given that,

Cost = Tk. 70,50,000/-

Salvage Value = Tk. 50,000/-

No. of Years in Useful Life = 5

Expected kilometers by Bus = 1,20,000

So, Depreciation per km = (Cost - Salvage Value) ÷ Estimated km by Bus

= Tk. {(70,50,000 – 50,000) ÷ 1,20,000}

= Tk. 58.33

# Unit of Activity Method Contd…

| Year | Depreciation Base | Depreciation per kilometer | Actual kilometer run in the year | Depreciation for the year |
|---|---|---|---|---|
| 2016 | | | 24,000 | 14,00,000 |
| 2017 | | | 34,000 | 19,83,333 |
| 2018 | 70,00,000 | 58.33 | 30,000 | 17,50,000 |
| 2019 | | | 20,000 | 11,66,667 |
| 2020 | | | 12,000 | 7,00,000 |
| Total | | | 1,20,000 | 70,00,000 |

# Thank You All

# Any Question?

# 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.

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# 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

# 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.

# Features of Periodic Inventory

- **Infrequent Updates:** Inventory levels are not continuously updated in real-time
- **Physical Inventory Counts:** The periodic system conduct physical inventory counts at the end of each accounting period.
- **Simplicity:** The periodic system is relatively simple to implement
- **Cost-Effective:** It can be cost-effective for businesses with a low volume of transactions or those that deal with a limited number of inventory items

# Features of Periodic Inventory

- **Potential for Inaccuracies: There** is a higher risk of inventory discrepancies due to theft, damage, or data entry errors. These discrepancies can lead to inaccurate financial reporting.

- **Delayed Information:** The periodic system does not provide real-time information

- **Suitable for Low-Volume Businesses:**This system is often used by small businesses or those with relatively stable inventory levels and low transaction volumes.

# Features of Perpetual Inventory

- **Real-Time Updates**
- **Accurate and Up-to-Date Information**
- **Immediate Identification of Issues**
- **Enhanced Inventory Control**
- **Higher Initial Costs**
- **Reduced Risk of Error**
- **Suitable for High-Volume Businesses**

# Proper Selection Cost Flow Formula

- Specific Identification

- First-in, First-out (FIFO)

- Last-in, First-out (LIFO)

- Average Cost (Weighted Average or Moving Average)

# 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.

# Contd…

**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.

# Contd...

**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 | |
| | | | | | | | | | | 400 | 21 | |
| July 15 | Issue | | | | | | 400 | 21 | | | | 18,400 |
| | | | | | | | 200 | 20 | 12,400 | 300 | 20 | |
| | | | | | | | | | | | | 6,000 |
| July 20 | Purchase | | 800 | 24 | 19,200 | | | | | 300 | 20 | |
| | | | | | | | | | | 800 | 24 | |
| | | | | | | | | | | | | 25,200 |
| July 25 | Issue | | | | | | 500 | 24 | 12,000 | 300 | 20 | |
| | | | | | | | | | | 300 | 24 | |
| | | | | | | | | | | | | 13,200 |
| | | Purchase | | | 27,600 | Cost of Goods Sold | | | 24,400 | | | |

# STORE LEDGER UNDER WEIGHTED AVERAGE 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 | | | | | 900 | 20.44 | 18,400 |
| July 15 | Issue | | | | | | 600 | 20.44 | 12,267 | 300 | 20.44 | 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 | | | |

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# 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 -13,818) = 23,782

# 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 -23,882) = 13,818

# 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 | 10.67 | 3,200 |
| June, 24 | Purchase | | 300 | 12 | 3,600 | | | | | 600 | 11.33 | 6,800 |
| June, 26 | Sales | | | | | | 550 | 11.33 | 6,233 | 50 | 11.33 | 567 |
| June, 30 | Purchase | | 440 | 13 | 5,720 | | | | | 490 | 12.83 | 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 | | 900 | 80.00 | 72,000 |
| June 23, 2021 | | 300 | 85.00 | 25,500 |
| June 27, 2021 | Purchase | 700 | 70.00 | 49,000 |
| Total | | 1,900 | | 1,46,500 |

# 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) |
| 5 | 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 |

# Questions

1. Discuss in brief the Inventory Valuation methods. (May – 22)
2. What is Inventory Valuation? (Oct. - 21)
3. Why FIFO method is better for inventory management?(Oct. - 21)
4. Why proper valuation of inventory is important? (Oct. – 19)
5. What are the differences between periodic and perpetual inventory systems? (Oct. – 19)
6. State, in brief, different methods of inventory (Sept. - 18)
7. What are the differences between perpetual and periodic inventory systems? (Sept. - 18)
8. What is inventory valuation? (Oct. – 17)
9. Why FIFO method is better for inventory management? (Oct. – 17)
10. State in brief the different methods of inventory valuation.( April – 17)
11. What are the differences between FIFO and LIFO? . (April – 17)

# Questions

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

# Thanks