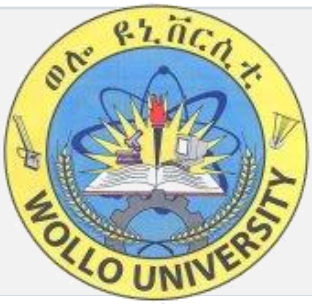

WOLLO UNIVERSITY
COLLAGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE

DISTANCE MODULE FOR DEGREE PROGRAM

PRINCIPLES OF ACCOUNTING PART II (ACFN1032)

Prepared By: Hussein Fentaw (MSc.)
Mohammed Adem (MSc.)
Editor: Selamawit Lemech (MSc.)

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CHAPTER 1: INVENTORIES: COST AND COST FLOW ASSUMPTIONS

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Aims and Objectives

This unit aims at discussing the basic issues involved in recording classifying, and valuing items classified as inventory.

After you have studied this unit, you will be able to:

- understand the meaning and characteristics of inventories;
- know the components of inventory cost;
- apply the periodic and perpetual inventory methods;
- recognize the various alternative cost flow assumptions used to value inventory, their effect on reported income, and the reasons for management's choice among the alternatives;
- apply the Money value last-in, first-out method (MV-LIFO) and understand the reasons management might elect to use it.

1.1 Introduction

Inventories consist of goods owned by a business and held either for use in the manufacture of products or as products awaiting sale. We typically think of inventories as raw materials, work in process, finished goods, or merchandise held by retailers. But depending on the nature of the company's business, inventory may consist of virtually any tangible goods or materials. An inventory might consist of component pieces of equipment, bulk commodities such as wheat or milling flour, fuel oil awaiting sale during the winter heating season, or unused storage space. Machinery and equipment, for example, are considered operational assets by the company that buys them, but before sale they are part of the inventory of the manufacturer who made them. Even a building, during its construction period is an inventory item for the builder.

Inventories are classified as

1. Merchandise inventory
2. Manufacturing inventory
    a. Raw materials
    b. Work in process
    c. Finished goods

    d. Manufacturing supplies
3. Miscellaneous inventory

Merchandise inventory represents goods on hand purchased for resale by a retailer or a trading company such as an importer or exporter for resale. Generally, goods acquired are not physically altered by the purchaser company; the goods are in finished form when they leave the manufacturer's plant. In some instances, however, parts are acquired and then further assembled into finished products. Bicycles that are assembled from frames, wheels, gears, and so on and sold by a bicycle retailer are examples.

Manufacturing inventory consists of several categories including:

a. Raw materials inventory: tangible goods purchased or obtained in other ways (eg. By mining) and on hand for direct use in the manufacture of goods for resale parts or subassemblies manufactured before use are sometimes classified as component parts inventory.
b. Work-in process inventory: goods requiring further processing before completion and sale. Work in process, also called goods-in-process, inventory includes the cost of direct material, direct labor, and allocated manufacturing overhead costs incurred to date. The term allocated overhead refers to non-traceable indirect expenses such as heat, light, and administrative salaries added to the cost of goods manufactured.
c. Finished goods inventory: manufactured items completed and held for sale. Finished good inventory cost includes the cost of direct material, direct labor, and allocated manufacturing overhead related to its manufacture.
d. Manufacturing supplies inventory: lubrication oils for the machinery, cleaning materials, and other items that make up an insignificant part of the finished product.

Miscellaneous inventories include items such as office, janitorial, and shipping supplies. Inventories of this type are typically used in the near future and are usually recorded as selling or general expense when purchased.

The major classification of inventories depends on the operation of the business. A retailing or wholesale entity acquires merchandise for resale. A manufacturing entity acquires raw materials and component parts, manufactures finished goods, and then sells them.

1.2 Inventory Procedures

The physical quantities in inventory may be measured by use of either a periodic inventory system or a perpetual inventory system. Both systems may be employed simultaneously for various inventories, such as material, finished goods, and goods in process.

1.2.1 Periodic Inventory System

The periodic inventory system relies on a physical count of goods on hand as the basis for control, management decisions and financial accounting. Although this procedure may give accurate results on a specific date, there is no continuing record of the inventory.

Under this system, an actual physical count of the goods on hand is taken at the end of each accounting period for which financial statements are prepared. The goods are counted, weighted, or otherwise measured, and the quantities are then multiplied by unit costs to value the inventory. An ongoing inventory record may, but need not, be kept of the units and amounts purchased or sold (or issued) and of the balance on hand purchases are debited to a purchases account, and end-of-period entries are made to close the purchases account, to close out beginning inventory, and to record the ending inventory as an asset (i.e. the ending inventory replaces the beginning inventory in the accounts)

Cost of goods sold is computed as a residual amount (beginning inventory plus net purchases less ending inventory) and for all practical purposes cannot be verified independently of an inventory count.

1.2.2 Perpetual Inventory System

The perpetual inventory system requires a continuous record of all receipts and withdrawals of each item of inventory. The perpetual record sometimes is kept in terms of quantities only. This procedure provides a better basis for control than is obtained under the periodic system. When the perpetual system is used, a physical count of the goods owned by the business enterprise must be made periodically to verify the accuracy of the inventories reported in the accounting records. Any discrepancies discovered must be corrected so that the perpetual inventory records are in agreement with the physical count.

The following table compares the periodic inventory system and the perpetual inventory system in a manufacturing environment.

Transaction or event	Periodic Inventory System	Perpetual Inventory System
1. Routine purchases of various inventory items.	All inventory items costs are debited to the purchases account regardless of the particular items acquired.	
2. Items removed from inventory for use in production	No accounting entries are made	Individual credit entries are made to each inventory account (plus a combined credit to the inventory control account) with an offsetting debit entry to the work in process (W/P) account.
3.End-of-period accounting entries and related activities	Physical count of the ending inventory is taken and Money values are assigned. This activity is a prerequisite to computing the cost of good sold. Adjusting entries are made to compute the cost of goods sold (CGS) using the following formula: CGS = Beginning inventory + purchase – ending inventory	Physical count of inventory is not needed for calculation of cost of goods sold for the period, but such inventory counts are usually made in order to verify the accuracy of the perpetual system and to identify inventory overages shortages. Cost of goods sold is automatically determined from the sum of the daily posting to this account

1.3 Cost and Quantity accumulation

At the date of acquisition, inventory items are recorded at their cash equivalent cost in accordance with the cost principle. Subsequently, when an item is sold, accounting records the cost of goods sold. Inventory items remaining on hand at the end of an accounting period are assigned an accounting value based on the cost principle except when their value has declined below cost because of damage, obsolescence, or a decrease in replacement cost.

1.3.2 Goods in Transit

Orders for goods that have not been filled by the seller present little difficulty for accountants. The orders that have been filled by the seller but not received by the purchaser are the crucial ones. The problem that must be resolved in these cases is to determine whether the goods in transit are the property of the purchaser or of the seller. The passage of title from the seller to the purchaser marks the time when the legal responsibility for the goods changes from one party to the other.

Contracts for purchases usually specify which party is responsible for goods and the exact location where the responsibility changes. This point usually is indicated by the letters “FOB”, meaning “free on board,” followed by the designation of a particular location, for example, “FOB Denver”. This means that title is held by the seller until the goods are delivered to a common carrier in Denver that will act as an agent for the purchaser. Other important FOB designations are “FOB destination”, which means that title passes at the purchaser’s plant, and “FOB shipping point,” meaning that title passes at the seller’s plant.

1.3.3 Consignment Goods

Consignment is a marketing arrangement where by the consignor (the owner of the goods) ships merchandise to another party, known as a consignee, who acts as a sales agent only. The consignee does not purchase the goods but assumes responsibility for their care and sale. Upon sale, the consignee remits the proceeds, less specified expenses and a commission to the consignor. Goods on consignment, because they are owned by the consignor until sold, should be excluded from the inventory of the consignee and included in the inventory of the consignor.

1.3.4 Goods on Installment Sales

When goods are sold on the installment plan, the seller usually retains legal title to the goods until full payment has been received; however, such goods are excluded form the inventories of the seller. The expection is that customers will make payment in the ordinary course of business; therefore, strict adherence to the "passage of title" rule is not considered a realistic approach to the recording of installment sales transactions. In such case, the sales agreement, industry practices, and other evidence of intent should be considered.

1.3.5 Inventoriable Costs

Inventory cost is measured by the total cash equivalent outlay made to acquire the goods and to prepare them for sale.

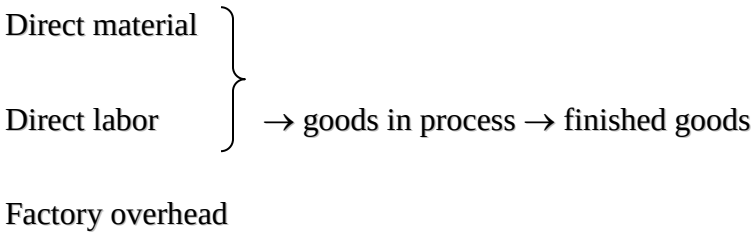
For inventory items purchased form outsiders, the net invoice cost is the invoice price of the item less any cash (purchases) discounts available to the purchaser. Cash discounts should not be included in the inventory cost, regardless of whether the purchaser takes aMvantage of the discounts or fails to do so.

In theory, if a specific cost is expected to contribute to the production of revenue, that cost should be associated with the goods acquired. Thus a theoretical justification exists for adding the indirect costs of ordering, freight-in, handling and storing to the net invoice cost to determine the total cost of goods acquired. However, the work involved in the allocation of these costs to inventories often exceeds the benefits derived form the increased accuracy in the valuation of inventories. Furthermore, the allocation of some indirect costs to goods acquired may be highly subjective.

Therefore, when costs are incurred that are necessary for the acquisition of goods but are not expected to produce future benefits or are not material in amount, the costs usually are not included in inventories. Instead, such costs are considered period costs to be deducted from current revenue.

For manufacturing inventories the cost is determined in almost the same way for merchandise inventories. This is particularly true of material and other purchased inventoriable items. The major difference is found in the measurement of the cost of finished goods and work in process. Tracing the movement of goods and costs through the production process often is difficult, but if it is done with reasonable care, the resulting information is useful to management and outsiders.

As stated earlier, four classes of inventory usually are found in a manufacturing enterprise. The cost of these inventories emerge as a part of the general process of the measurement of the costs of the three elements (direct material, direct labor, and factory overhead) that flow through the manufacturing process, and of the tracing of these costs to specific quantities of partially finished and finished products as illustrated below:



1.4 Cost Flow Assumptions

The term cost flow refers to the inflow of costs when goods are purchased or manufactured and to the outflow of costs when goods are sold. The cost remaining in inventories is the difference between the inflow and outflow of costs. During a specific accounting period, such as a year or a month, identical goods may be purchased or manufactured at different costs. Accountants then face the problem of determining which costs apply to items in inventories and which applies to items that have been sold.

The assumed flow of costs to be used in the assignment of costs to inventories and to goods sold need not conform to the physical flow of goods. Cost flow assumption relate to the flow of costs, rather than to the physical flow of goods. The question of which physical units of identical goods were sold and which remain in inventories is not relevant to income measurement and inventory valuation.

1. First-in, First-out method (FIFO)
2. Last-in, First-out method (LIFO)
3. Weighted-average method
4. Specific identification method

All methods of inventory valuation are based on the cost principle; no matter which method is selected, the inventory is stated at cost. In selecting an inventory valuation method (or cost flow assumption), accountants are matching costs with revenue, and the ideal choice is the method that "most clearly reflects periodic income."

1.4.1 First-In, First-out method (FIFO)

The FIFO method treats the first goods purchased or manufactured as the first units costed out on sale or issuance. Goods sold (or issued) are valued at the oldest unit costs, and goods remaining in inventory are valued at the most recent unit cost amounts. FIFO can be used with either a periodic or a perpetual inventory system, and no attempt is made to match the specific cost incurred in purchasing or manufacturing specific inventory unit items with the revenue from the sale of the item.

Application of FIFO with a perpetual inventory system requires the maintenance of inventory layers by unit costs throughout the period in order to assign the appropriate cost to each issue or sale.

To illustrate the application of the inventory costing methods, assume the following data for the month of January relating to item Y in the inventories of Gaky Company.

Transaction Date	Units		
	Purchased	Sold	On Hand
January 1, Inventory@Br 1.00			200
January 9 Purchases@Br 1.10	300		500
January 10 Sales		400	100
January 15 Purchases@Br 1.16	400		500
January 18 Sales		300	200
January 24 Purchases@Br 1.26	100		300

Beginning inventory cost……200 x Br. 1 = Br. 200

Purchases…….300 x Br. 1.10 = Br. 330

400 x Br. 1.16 = 464

100 x Br. 1.26 = 126 920

Cost of goods available for sale……..Br. 1, 120

Using the above data, the cost of ending inventory and the cost of goods sold is determined under the periodic inventory system as follows:

Beginning inventory (200 units at Br. 1)……Br. 200

Add: purchases during the period…….920

Cost of goods available for sale……..Br. 1, 120

Dedu: Ending inventory (300 units per physical inventory count):

100 units at Br. 1.26 (most recent purchases –Jan. 24)…… Br. 126

200 units at Br. 1.16 (next most recent purchase –Jan15)……...232

Total ending inventory cost…….358

Cost of goods sold (or issued)……..Br 762

Under the perpetual inventory system, the cost of ending inventory and cost of goods sold using FIFO inventory costing is determined as follows:

Date	Purchases			Sales (Issues)			Inventory Balance		
	Units	Unit Cost	Total Cost	Unit	Unit Cost	Total Cost	Units	Unit Cost	Total Cost
Jan. 1							200	Br. 1.00	Br. 200
Jan. 9	300	Br. 1. 10	Br. 330				200 300	1.00 1.10	Br. 200 330
Jan. 10				200 200	Br. 1.00 1.10	Br. 200 220	1.00	1.10	110
Jan. 15	400	1.16	464				100 400	1.10 1.16	110 464
Jan. 18				100 200	1.10 1.16	110 232	200	1.16	232
Jan. 24 End. Inventory cost of goods sold.	100 ---	1.26 ---	126 ---	 ---	 ---	 Br. 762	200 100 ---	1.16 1.26 ---	232 126 Br. 358

The FIFO method gives the same result whether the periodic or perpetual inventory system is used because each withdrawal of goods is from the oldest stock on hand.

1.4.2 Last-in, First-out method (LIFO)

The LIFO method assumes a flow of inventory costs based on the assumption that the most recently purchased goods are sold first, because current costs are incurred to make current sales and to maintain adequate inventories on hand. Under this view, the latest costs are most closely associated with current revenue; thus, the matching principle of income measurement is carried out. In the balance sheet, inventories under the LIFO method are valued at the earliest costs incurred.

Unlike the FIFO method, the LIFO method does not produce the same result when the perpetual inventory system is used. When the perpetual system is used, each withdrawal must come from the most recent purchase; however, this may mean that items may be withdrawn from the beginning inventory or the earliest purchase when purchases lag behind sales.

Using the data for Gaky Company, the cost of ending inventory and cost of goods sold under the perpetual system using LIFO is determined as follows:

Cost of goods available for sale……..….Br. 1, 120

Deduct: Ending inventory (300 units per physical inventory count):

200 units at Br. 1 (oldest costs available, form Jan 1. inventory) ……Br. 200

100 units at Br. 1.10 (next oldest costs available, from Jan 9 purchase)….. 1.10

Ending inventory……..…..310

Cost of goods sold……..….Br. 810

Using perpetual inventory system, the costs are determined as

	Purchases			Sales (issues)			Inventory		
Date	Units	Unit Cost	Total Cost	Units	Unit Cost	Total Cost	Units	Unit Cost	Total Cost
Jan. 1							200	Br. 1	Br. 200
9	300	Br. 1.10	Br. 330				200 300	1 1.1	200 330
10				Br. 300 100	Br. 1.1 1	Br. 330 100	100	1	100
15	400	1.16	464				100 400	1 1.16	100 464
18				300	1.16	348	100 100	1 1.16	100 116
24	100	1.26	126				100 100 100	1 1.16 1.26	100 116 126
									Br. 342

Ending inventory----------

Cost of goods sold----------Br. 778

Weighted-Average Method

This method of inventory valuation is based on the assumptions that all goods are commingled and that no particular batch of goods is retained in the inventories. Thus, the inventories are valued on the basis of average prices paid for the goods, weighted according to the quantity purchased each period.

Using the data for Gaky Company, the ending inventory and cost of goods sold are determined under the weighted-average method (periodic inventory system) as follows:

Cost of goods available for sale……Br. 1, 120

Total units available for sale……..…….100

Unit cost (Br. 1, 120 ÷ 1000)……..1.12

Ending Inventory ($1.12 x 300) ……..…..$336

Cost of goods sold ($1, 120 – 336)……...$784

When the perpetual inventory system is used, the weighted average method gives the result of a moving weighted average. Under the perpetual inventory system, a new weighted-average unit cost is computed after each purchase, and for this reason is known as the moving weighted-average method. Units sold are priced at the latest weighted average unit cost.

Using the data for Gaky Company the moving-weighted average method is illustrated below:

Date	Units	Purchases		Sales (Issues			Inventory		
		Unit Cost	Total Cost	Units	Unit Cost	Total Cost	Units	Unit Cost	Total Cost
Jan. 1							200	Br. 1	Br. 200
9	300	Br. 1.1	Br. 330				100	1.06*	530
10				400	Br. 1.06	Br. 424	100	1.06	106
15	400	1.16	464				500	1.14+	570
18				300	1.14	342	200	1.14	228
24	100	1.26	126				300	1.18++	354
End. inv									Br. 354
CGS						Br. 766			

* Br. 530 ÷ 500 = Br. 1.06’

+ Br. 570 ÷ 500 = Br. 1.14

++ Br. 354 ÷ 300 = Br. 1.18

The weighted average method produces a result, for both inventory valuation and income measurement that lies between the results achieved under FIFO and those achieved under LIFO. The weighted average method does not produce an inventory value consistent with the current cost of the items in inventory; by its nature it lags behind market prices. During a period of rising prices the inventory cost tends to be below replacement cost; during a period of falling prices it tends to be above replacement cost.

Specific Identification Method

At first thought one might argue that each item of inventory should be identified with its actual cost and that the total of these amounts should constitute the inventory value. Although such a technique might be possible for a business enterprise handling a small number of items, for example, an automobile dealer, it becomes completely inoperable in a complex manufacturing enterprise when the identity of the individual item is lost. Practical considerations thus make specific identification inappropriate in most cases.

Even when specific identification is a feasible means of valuation, it may be undesirable form a theoretical point of view. The method permits income manipulation when there are identical items acquired at varying prices. By choosing to sell the item that was acquired at a specific cost, management may cause material distortions in income.

1.5 Inventory VALUATIONS and inflation

Although both LIFO and FIFO are accepted inventory valuation methods, they may lead to significant differences in the financial statements during a period of inflation. Neither method achieves an entirely satisfactory reporting of both inventories and cost of goods sold when prices are going up.

Effect on working Capital and Net Income

The LIFO method has the effect of assigning the most recently incurred costs to inventories, whereas the LIFO assumption assigns the first costs incurred to inventories. During periods of rising price levels, inventories valued on the FIFO basis approximate more closely the current cost of the inventories; the cost of items valued at LIFO basis are less than the current cost of the inventories; the cost of items valued at LIFO basis are less than the current cost. The difference between the inventories valued at LIFO and at current cost depends on the magnitude of the price level increases. The LIFO method produces a seriously distorted inventory valuation when it is used over a long period during which the price level increases steadily or when the price level increases rapidly.

The understatement of inventories resulting from the use of LIFO method is objectionable because of the effect on working capital, current ratio, and inventories turnover rate. The problem is rather series if no indication is included in the financial statements of the degree of understatement. The aMvocate of LIFO minimizes the importance of this understatement by arguing that the income statement is more important than the balance sheet. They argue that a more accurate measure of net income may justify a less meaningful balance sheet.

Proponents of the LIFO method argue that realized revenue should be matched with the cost of acquiring goods at or near the time the revenue is realized. They contend that during periods of rising prices, for example, two types of profits, inventory profits and operating profits, may be included in net income, unless diligence is exercised to avoid the inclusion of inventory profits. Inventory profits arise as a result of holding inventories during periods of rising inventory costs, and are measured by the difference between the original cost of goods sold and their current cost at the time of sale. Operating profits result from sales of a product at a price above current cost. Because the LIFO method matches the most recently incurred costs with realized revenue, it tends to include inventory profits from net income. Supporters of LIFO favor the exclusion of inventory profits from net

income, on the premise that inventories that are sold must be replaced and that inventory profits are fictitious and illusory.

Those supporting the LIFO method of inventory valuation agree that there may be two types of profits, but they consider both to be an element of income realized at the time of sale. They argue that if the proponents of LIFO are interested in measuring real rather than monetary income, they should extend their proposal to use current costs to value all assets. The cost of goods sold should not be the most recently incurred costs but rather the costs that will be incurred to replace the items that have been sold. This method has been referred to as the next-in, first-out (nifo) method of inventory valuation. At the present time, the next-in, first-out method is not acceptable, because it violates the cost principle.

1.5.2 Managerial and Income Tax Implications

The proponents of LIFO argue that this method is an invaluable aid of management because it excludes inventory profits from net income. External factors that are beyond the control of management often create inventory profits. Moreover, inventory profits are reinvested in inventories, which means that disposal (spendable) income is measured more accurately by the use of LIFO

FIFO advocated agrees that management may need information about the current cost of the inventory and its effect on net income; however, they maintain that this information may be compiled without distorting working capital and net income. Moreover, they argue that if the inventory profits are excluded from net income, similar profits derived from other investments also should be excluded. It management decisions regarding dividend declarations, wage negotiations, and prices are based on the concept of disposable income, a more extensive modifications of the determination of net income caused by LIFO liquidations. When these occur, cost of goods sold includes costs that may differ significantly from current costs.

Despite the theoretical arguments in support of LIFO, the dominant reason for its popularity is the income tax benefits that result from the use of this method. During period of rising prices, taxable income and income taxes are reduced through the use of LIFO. If prices later fall to the level at the time LIFO was adopted, this reduction is simply a deferral of taxes. It prices continue to rise, the reduction will be permanent. In either case, the LIFO user gains, because a postponement of taxes has economic value.

The income tax benefits of LIFO are not guaranteed. It prices fall below levels at the time LIFO was adopted, or if the quantity of inventories is reduced below the amount on hand at the inception of LIFO, it is conceivable that the LIFO method could produce a tax disadvantage. Before adopting LIFO solely for income tax reasons, management should consider many factors as the expected course of prices, future income tax rates, inventory fluctuations, etc.

Valuation of Inventory at Other than Cost flow assumption

In the precious section, you learnt that there are several methods a company could use to determine the cost of inventory at the end of a period and the corresponding cost of goods sold for the period. In the practical world, various conditions make it difficult or sometimes impossible to strictly apply accounting theories. Due to this, there are adjustments and modifications to be made to make the accounting information fair and valuable. In this section, you will see some inventory valuation and estimation techniques. The essence of this section is to equip you with all the necessary techniques and steps to be followed in estimating and valuing inventories.

The section deals with lower of cost or market (LCM) inventory valuation, Retail and gross method of inventory estimation

1.4.1 Inventory Valuation: Lower of Cost or Market (LCM) Method

It was explained how costs are assigned to ending inventory and cost of goods sold using one of the four costing methods (FIFO, LIFO, weighted average, or specific identification). Yet, the cost of inventory is not necessarily the amount always reported on a balance sheet. Accounting principles require that inventory be reported at cost. However sometimes it might be necessary to value inventories at a value other than cost. Especially, when there exists a significant difference in historical purchasing price and current market cost of inventories.

One alternative technique of inventory valuation is based on a comparison of the market value of inventories against their cost and taking whichever is lower. Merchandise inventory is then said to be reported on the balance sheet at the lower of cost or market (LCM).

In applying LCM, cost is the acquisition price of inventory computed using one of the *historical* cost methods – specific identification, FIFO, LIFO, and Weighted average, whereas, market is defined as the *current* market value (cost) of replacing inventory. It is the current cost of purchasing the same inventory items in the usual manner. It is important to know that market is not defined as the sales prices.

A decline in market cost reflects a loss of value in inventory. This is because the recorded cost of inventory is higher than the current market cost. When this occurs, a loss is recognized. This is done by recognizing the decline in merchandise inventory from recorded cost to market cost at the end of the period.

LCM is applied in one of three ways:

1. *Separately to individual items*
2. *To major categories of items*
3. *To the whole of inventories*

The less similar the items that make up inventory are, the more likely it is that companies apply LCM to individual items. Advances in technology further encourage the individual item application.

Illustration

The following are the inventory of ABC motor sports, retailer.

Inventory	*units*	*per unit*	
Items	*on hand*	*Cost*	*market*
Cycles:			
Roadster	50	Br. 15,000	Br. 14,000
Sprint	20	9,000	9,500
Off Road:			
Trax-4	10	10,000	11,200
Blaz'm	6	16,000	14,500

Let us see LCM computation under the three ways:

1. Separately to each individual item

Inventory item	*Total cost*	*Total market*	*LCM*
Roadster	Br. 750,000	Br. 700,000	Br. 700,000
Sprint	180,000	190,000	180,000
Categories sub total	Br. 930,000	Br. 890,000	
Trax-4	100,000	112,000	100,000
Blaz'm	96,000	87,000	87,000
Categories sub total	Br. 196,000	Br. 199,000	
Totals	Br. 1,126,000	Br. 1,089,000	Br. 1,067,000

2. Major categories of items

Inventory	*Categories total cost*	*Categories total market*	*LCM*
Cycles	Br. 930,000	Br .890,000	Br. 890,000
Off. Road	196,000	199,000	196,000
Totals	Br. 1,126,000	Br. 1,089,000	Br. 1,086,000

- When LCM is applied to the whole inventory, the market cost is Br. 1089,000. Since this market cost is Br. 37,000 lower than Br. 1,126,000 recorded cost, it is the amount reported for inventory on the balance sheet.
- When LCM is applied to individual items of inventory, the marked cost is Br. 1,067,000. Since market is again less than Br. 1,126,000 cost, it is the amount reported for inventory.
- When LCM is applied to the major categories of inventories, the market is Br. 1,086,000 which is also lower than cost.

1.6 Estimating Inventory Cost

In practice, an inventory amount is estimated for some purposes. When it is impossible to take a physical inventory or to maintain perpetual inventory records.

Example

Interim financial statements are needed. It may be too costly, to take physical inventory. This is especially the case when periodic inventory system is used.

1. When a catastrophe such as a fire, flood etc has destroyed the inventory. In such case, to ask claims from insurance companies, there is a need of estimating inventory.

There are two common techniques of inventory cost estimation; retail method and the gross profit method. Let us first see the retail method of inventory cost estimation:

1.6.1 Retail Method of Inventory Costing

As the name implies, this method is mostly used by retail businesses. The estimate is made based on the relationship between the cost and the retail price of merchandises available for sale.

The steps to be followed to apply this method are:

1. *Calculate the cost to retail ratio by using the following formula* $\frac{Cost\ of\ merchandise\ available\ for\ sale}{Retail\ price\ of\ merchandise\ available\ for\ sale}$
2. *Calculate the ending inventory at retail price*

Ending inventory at retail price = retail price of merchandise available for sale less Sales

3. *Calculate the estimated cost of ending inventory*

Estimated cost of ending inventory = Cost to retail ratio (calculated in step-1) X *Ending inventory at retail* (calculated in step-2)

Example

	Cost	Retail
Sept. 1, beginning inventory	Br. 35,000	Br. 50,000
Purchases in September (net)	125,000	150,000
Sales in September (net)		140,000

(1) Cost retail ratio = $\frac{Br.35{,}000 + Br.125{,}000}{Br.50{,}000 + Br.150{,}000} = 0.80$

This implies that for every one Birr retail price 0.80 birr or 80 cents is the cost of that inventory and the remaining 20 cents is gross profit.

(2) Ending inventory at retail = (Br. 50,000+Br. 150,000) - 140,000 =Br. 60,000

(3) Estimated ending inventory at cost = 0.80 X Br. 60,000 = Br. 48,000

1.6.2 Gross Profit Method

Gross profit method also known as the gross margin method refers to the amount of income that an organization earns from selling of items after deducting their cost. This method uses an estimate of the gross profit realized during the period to estimate the cost of inventory. The gross profit rate may be estimated based on the average of previous period's gross profit rates. The gross profit rate will tell you the percentage or ratio of gross profit from every one birr sales.

Usually the gross profit rate is calculated with the following formula: $\frac{Sales - cost\ of\ goods\ sold}{Sales}$

The steps to be followed in applying the gross profit method are:

(1) The gross profit rate is estimated and then estimated gross profit is calculated in birr value.

Estimated gross profit (in Birr) = Gross profit rate X sales

(2) Cost of merchandise sold is estimated

Estimated cost of merchandise sold = sales – Estimated gross profit

(3) Calculate the estimated cost of ending inventory

Estimated cost of ending inventory is equal to:

Cost of merchandise available for sale – Estimated cost of merchandise sold.

Please recall that cost of merchandises available for sale is the sum of cost of beginning inventory and net cost of purchases.

Example

Beginning inventory cost:…… Br. 46, 000

Net purchases during the period……210,000

Net sales during the period…… 240,000

Estimated gross profit rate ……. 40%

The ending inventory is estimated as follows:

(1) Estimated gross profit = 0.4 X 240,000 = Br. 96,000

(2) Estimated cost of merchandise sold = Br. 240,000 – Br.96,000 = Br. 144,000

(3) Estimated cost ending inventory = (Br. 46, 000 + 210,000) – Br. 144, 000

= Br. 256, 000 – Br. 144,000

= Br. 112,000

CHAPTER 2

PLANT ASSETS: DEPRECIATION AND DEPLETION

Contents

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2.0 Aims and Objectives

This unit aims at discussing the factors involved in the accounting and recording of depreciation and depletion. In addition to a thorough discussion of the accounting problems, the unit presents a detailed analysis and explanation of the various depreciation methods used in practice.

After you have studied this unit, you will:

- understand the concept of depreciation;
- be abele to apply several depreciation methods and understand the incentives for choosing them;
- appreciate the relationship among depreciation, taxes and cash flows ;
- understand the concept of depletion.

2.1 Introduction

Accountants, engineers, appraisers, and economists all define depreciation differently, and they probably will continue to do so because each group uses depreciation in a different context. All agree, however, that most assets are on an inevitable “March to the rubbish heap”, and some type of write down or write off of cost is needed to indicate that the usefulness of an asset has declined. Depreciation is the term most often employed to indicate that tangible plant assets have declined in service potential. Where natural resources, such as timber, gravel, oil, and coal, are involved, the term

depletion is employed. The expiration of intangible assets, such as patents, or goodwill, is called amortization.

2.2 Depreciation

The concept of depreciation is linked closely to the measurement of net income. Because part of the service potential of depreciable plant assets is exhausted in the revenue generating process each accounting period, the cost of these services must be deducted from revenue in the measurement of net income; the expired cost must be recovered before a business enterprise is considered "as well off" as at the beginning of the period. Depreciation is the measurement of this expired cost.

To accountants, depreciation is not a matter of valuation but a means of cost allocation. Assets are not depreciated on the basis of a decline in their fair market value, but on the basis of systematic charges to expense. Depreciation is defined as the accounting process of allocating the cost of tangible assets to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset.

2.3 Factors in the estimation of periodic depreciation

Before a pattern of charges to revenue can be established, three basic questions must be answered:

1. What depreciable basis is to be used for the asset?
2. What is the asset's useful life (Economic life)?
3. What method of cost allocation is best for this asset?

2.3.1 Depreciable Base for the Asset

The base established for depreciation is a function of two factors: the original cost and salvage or disposal value. We discussed historical cost in unit 4. Salvage value is the estimated amount that will be received at the time the asset is sold or removed from service. It is the amount to which the asset must be written down or depreciated during its useful life. To illustrate, if an asset has a cost of Br. 10, 000 and a salvage value of Br. 1, 000, its depreciable base or depreciable cost is Br. 9, 000 (Br. 10, 000 – Br. 1, 000). From a practical standpoint, salvage value is often considered to be zero because its valuation is small. Some long-lived assets, however, has substantial values.

The scrapping or removal of plant assets such as buildings, structures, and heavy equipment may involve substantial costs in the year of retirement. Theoretically, removal costs should be estimated and included in the depreciation base. The inclusion of removal costs in the depreciation base means that the entire cost involved in obtaining services from plant assets will be allocated to the revenue generated by the assets, without regard to the timing of the expenditure. In practice, however, removal costs may be either disregarded or netted against the estimated residual value of the assets. The depreciable base for a plant asset thus becomes:

Depreciable base = Cost – Estimated salvage value (net)

2.3.2 Estimate of Economic Life

The economic life of a plant asset is the total units of service expected to be derived from the asset. Accountants commonly measure economic life of a plant asset in terms of time units, for example, months or years. Economic life of a plant asset also may be measured in terms of output or activity, expressed in such physical units as miles, or machine-hours. Forces that tend to limit the economic life of a plant asset should be considered in the determination of the type of unit of service to use for a specific asset or group of assets. The cause of a decrease in economic life may be divided into physical deterioration (including causalities), and functional or economic factors.

Physical deterioration results largely from wear and tear from use and the forces of nature. These physical forces terminate the usefulness of plant assets by rendering them incapable of performing the service for which they were intended and thus set the maximum limit on economic life. Unusual events such as accidents, floods, and earthquakes also serve to terminate or reduce the economic life of plant assets.

Functional or economic factors may render a plant asset that is in good physical condition no longer useful because it is not economical to keep the asset in service, or because of legal or income tax considerations related to the use of the asset. Two primary causes of functional depreciation are obsolescence and inadequacy obsolescence refers to the effect of innovations and technological improvements on the economic life of a plant assets. Inadequacy refers to the effect of growth and changes in the scale of a business operation in terminating the economic life of plant assets.

The choice of an appropriate unit of economic life of a plant asset also requires a determination of the causes of depreciation. The objective is to choose the unit most closely related to the cause of service

exhaustion. When the economic life of a plant asset is limited largely by the effect of physical deterioration, a unit that reflects physical use of the asset is appropriate. For example, hours of service might be chosen as the unit of economic life of an electric motor; or miles of service for a truck. In contrast, the physical deterioration that limits the economic life of buildings probably is related more closely to the passage of time than to usage. Thus, an estimated economic life in terms of years is more appropriate for buildings.

2.3.3 Depreciation Methods

When the economic life of a plant asset has been estimated, and its depreciation base established, there remains the problem of determining the portion of cost that will expire with each unit of economic life. There are two major variables to be considered in reaching a solution to this problem:

1. The quality of services used may be equal or may differ during each accounting period of economic life.
2. The cost of various units of service may be equal or may differ during each accounting period of economic life.

There are several depreciation methods that attempt to recognize those factors in varying degrees. They may be classified as follows:

1. Straight-line method
2. Accelerated methods
    a. Declining-balance method
    b. Sum-of-the-years'-digits method
3. Units-of-output method
4. Special depreciation methods
    - Inventory method
    - Retirement and replacement method
    - Group and composite method
    - Compound interest method

2.3.3.1 Straight-line Method

The straight-line method is based on the assumption that a plant asset declines in usefulness at a constant rate. The straight-line method relates depreciation directly to the passage of time rather than to the asset's use, resulting in a constant amount of depreciation recognized per time period.

The formula for computing periodic straight-line depreciation is:

$$\text{Annual straight-line depreciation} = \frac{Cost - \text{Re}sidual\ Value(net)}{Years\ of\ estimated\ Economic\ Life}$$

To illustrate the straight-line method of depreciation, assume that a machine is acquired on January 2, 1990 for Br. 7, 000 and that the net residual value of the machine at the end of four years of economic life is estimated at Br. 1, 000. The depreciation expense of the machine over its economic life is:

$$\text{Annual depreciation expense} = \frac{Br.7{,}000 - Br.1{,}000}{4} = \frac{Br.6{,}000}{4} = \text{Br. } \underline{1,\ 500}$$

At the end of each year, depreciation expense of this machine is recorded as follows:

Depreciation Expense…….1, 500

Accumulated depreciation-machine…….1, 500

Check Your Progress –1

1. Given the following data for Jupiter Company for equipment.

   Acquisition cost, January 1, 1995……Br. 6, 600

   Residual value……...……600

   Estimated Economic life…….……5 years

   Compute depreciation expense for 1995 using straight-line method?

_____

_____

2.3.3.2 Accelerated Method

The assumption that plant assets yield either a greater quantity of service or more valuable service in early years of their economic life has led accountants to devise methods of depreciation that result in larger amounts of depreciation in early years of economic life, and smaller amounts in later years. The three most widely used accelerated methods of depreciation are

2.3.3.2.1 Declining-Balance Method

This method utilizes a depreciation rate (expressed as a percentage) that is some multiple of the straight-line method. For example, the double declining rate for a 10-year asset would be 20% (double the straight line rate, which is 10%). The declining-balance rate remains constant and is applied to the reducing book value each year. Unlike other methods, in the declining-balance method the salvage value is not deducted in computing the depreciation base.

The declining-balance rate is multiplied by the book value of the asset is reduced each period. Since the book value of the asset is reduced each period by the depreciation charge, the constant declining-balance rate is applied to a successively lower book value that results in lower depreciation charges each year. This process continues until the book value of the asset is reduced to its estimated salvage value, at which time depreciation is discontinued. As indicated above, various multiples are used in practice, such as twice (200%) the straight-line rate (double-declining-balance method) and 150% of the straight-line rate etc

To illustrate, assume that Famine Company recently purchased crane for digging purposes. Pertinent data concerning the purchase of the crane are:

Cost of crane……..Br. 500, 000

Estimated Economic life……5 years

Estimated salvage value……..Br. 50, 000

Productive life in hours……30, 000 hours.

Using the doubles declining approach the depreciation expense per year is as follow:

Year	Book value of Asset at beginning of year	Rate	Dep^{n}. Expense	Accumulated Dep^{n}.	Book value End of year
1	Br. 500, 000	40%	Br. 200, 000	Br. 200, 000	Br. 300, 000
2	300, 000	40%	120, 000	320, 000	180, 000
3	180, 000	40%	72, 000	392, 000	108, 000
4	108, 000	40%	43, 200	435, 200	64, 800
5	64, 800	40%	14, 800*	450, 000	50, 000

* Limited to Br. 14, 800 because book value should not be less than salvage value.

2.3.3.2.2 Sum-of-the-years'-Digits Method

This method results in a decreasing depreciation charges based on a decreasing fraction of depreciable cost (original cost less salvage value). Each fraction uses the sum of the years as a denominator and the number of years of estimated life remaining as of the beginning of the year as a numerator. The denominator is calculated as $\frac{n(n+1)}{2}$ where n is the economic life of the asset.

In this method, the numerator decreases year by year although the denominator remains constant. At the end of the asset's useful life, the balance remaining should be equal to the salvage value. Using the data for Famine Company above, the depreciation expense per year is calculated as follows:

Year	Depreciation Base	Remaining life in year	Depreciation Fraction	Depreciation Expense	Book value End of year
1	Br. 450, 000	5	5/15*	Br. 150, 000	Br. 350, 000
2	450, 000	4	4/15	120, 000	230, 000
3	450, 000	3	3/15	90, 000	140, 000
4	450, 000	2	2/15	60, 000	80, 000
5	450, 000	1	1/15	30, 000	50, 000

* $\frac{n(n+1)}{2} = \frac{5(5+1)}{2} \frac{5(6)}{2} = 15$

N.B The depreciation rate under the sum-of-years'-digits-method should be used for one full year (12 months)

Check Your Progress –2

1. A plant asset Cost Br. 56, 000, had an economic life of 8 years, and an estimated net residual value of Br. 2, 000.

a. Compute depreciation Expense for the first year of economic life under the sum-of-the-years'-digits method of depreciation
b. Assume that this asset was acquired on April 1, 1990. Compute depreciation expense for the full year ended Dec. 31, 1991, under the sum-of-the-years'-digits method of depreciation.

2.3.3.3 Units-of-output method

This method assumes that depreciation is a function of use or productivity instead of the passage of time. The life of the asset is considered in terms of either the output it provides (units it produces), or an input measure such as the number of hours it works. Conceptually, the proper cost association is

established in terms of output instead of hours used, but often the output is not easily measurable. In such cases, an input measure such as machine hours is a more appropriate method of measuring the birr amount of depreciation charges for a given accounting period.

For Famine Company above, if the crane is used 4, 000 hours the first year, the depreciation charge is

$$\text{Depreciation expense} = \frac{(Cost\ \ less\ salvage\ \ value)}{Total\ \ estimated\ \ hours} \text{ x Hours this year}$$

$$= \frac{Br.500{,}000 - Br.50{,}000}{30{,}000} \text{ x } 4,\ 000$$

= Br. 60, 000

The major limitation of this method is that it is not appropriate in situations in which depreciation is a function of time instead of usage. For example, a building is subject to a great deal of steady deterioration from the elements (time) regardless of its use. In addition, where an asset is subject to economic or functional factors, independent of its use, the units-of-output method losses much of its significance. For example, if a company is expanding rapidly, a particular building may soon become obsolete for its intended purposes (function).

Check Your Progress –3

1. Describe a situation in which the use of the output method of depreciation is appropriate.

   _____

   _____.

2.3.3.3 Special Depreciation Methods

Sometimes an enterprise does not select one of the more popular depreciation methods because the assets involved have unique characteristics, or the nature of the industry dictates that a special depreciation method be adopted. Generally, these systems can be classified into five groups:

2.3.3.3.1 Inventory methods

The inventory method is used to value small tangible assets such as hand tools or utensils. A tool inventory, for example, might be taken at the beginning and at the end of the year; the value of the beginning inventory plus the cost of tools acquired for the year less the value of the ending inventory provides the amount of depreciation expense for the year. This method is appealing because separate depreciation schedules for the assets in use are impractical.

2.3.3.3.2 Retirement and Replacement Methods

The retirement and replacement methods are used principally by public utilities and railroads that own many similar units of small value such as poles, conductors, and telephones. The purpose of these approaches is to avoid elaborate depreciation schedules for individual assets. The distinction between the two methods is that the retirement method charges the cost of the retired asset (less salvage value) to depreciation expense; the replacement method charges the cost of units purchased less salvage value from the units replaced to depreciation expense. In the replacement method the original cost (sometimes called aboriginal cost) of the old assets is maintained in the accounts indefinitely.

To illustrate these two methods, let us assume that the transmission lines of DOF Company originally cost Br. 1, 000, 000 and that 8 years later lines costing Br. 150, 000 are replaced with lines having a cost of Br. 200, 000. Any salvage value from the old transmission lines is considered a reduction of the depreciation expense in the period of retirement or replacement under both methods. Neither makes use of an accumulated depreciation account.

Entries under Retirement and Replacement Methods

Retirement method	Replacement method
Installation of lines – 1990	
Plant assets-lines…….1, 000, 000	Plant assets-lines –1, 000, 000
Cash…….1, 000, 000	Cash……1, 000, 000
Retirement of old asset – 1998	
Depreciation Expense 150, 000	no entry
Plant assets-lines……...150, 000	
Cost of new asset – 1998:	
Plant assets-line……..200, 000	Depreciation Expense – 200, 000
Cash…….200, 000	Cash……..……200, 000

2.3.3.3.3 Group and Composite Method

Depreciation methods are usually applied to a single asset. In certain circumstances, however, multiple-asset accounts are depreciated using one rate. Two methods of depreciating multiple-asset accounts are employed: the group method and the composite method. The term group refers to a collection of assets that are similar in nature; composite refer to a collection of assets that are dissimilar in nature. The group method is frequently used where the assets are fairly homogeneous and have approximately the same useful lives. The composite approach is used when the assets are heterogeneous and have different lives.

The average depreciation or composite rate is determined by dividing the depreciation per year by the total cost of the assets.

2.3.3.3.4 Interest method of Depreciation

For many years the annuity and sinking fund methods of depreciation have received attention from accounting theorists because of their focus on cost recovery and rate of return on the investment in depreciable plant assets. A depreciable plant asset represents a bundle of future services to be received periodically over the economic life of the asset. The cost of such an asset may be viewed as the present value of the equal periodic rents (services) discounted at a rate of interest consistent with the risk factors identified with the investment in the plant asset.

- *Annuity method*

This method is appropriate when the periodic cost (depreciable) of using a long-lived plant asset is considered to be equal to the total of the expired cost of the asset and the implicit interest on the un recovered investment in the asset. Depreciation expense is debited and accumulated depreciation and interest revenue are credited periodically.

- *Sinking-Fund Method*

This method might be used when a fund is to be accumulated to replace a plant asset at the end of its economic life. Under the sinking-fund method, the amount of annual depreciation expense is equal to the increase in the asset replacement fund. The increase in the fund consists of the equal periodic deposits (rents) plus the interest revenue realized at the assumed rate on the sinking-fund balance.

To illustrate the annuity method and sinking-fund method of depreciation, assume that a trunk with an economic life of five years and a net residual value of Br. 42, 117.50 is acquired for Br. 500, 000 at beginning of year 1.

Assume also that the fair rate of interest for this type of investment is 10% compounded annually.

Required: A) using annuity method

1. Compute the yearly depreciation expense using the annuity method.
2. Prepare a summary of annuity method of depreciation.
3. Present the journal entries to record depreciation at the end of year 1 using the annuity method.

B) Using sinking-fund method

4. Compute the yearly sinking-fund deposit using the sinking fund method of depreciation.
5. Prepare a summary of sinking-fund method of depreciation.
6. Present the journal entries to record depreciation using the sinking-fund method of depreciation for years 1 and 2

Solution:

1. Annual depreciation expense under annuity method.

$$\text{Depreciation} = \frac{Cost\ of\ asset\ less\ present\ value\ of\ net\ residual\ value}{\text{Pr}esent\ value\ of\ ordinary\ annuity\ of\ 5\ rents\ of\ 1\ at\ 10\%}$$

$$= \frac{Br.500{,}000 - (Br.42{,}117.50 x 0.620921)}{3.790787}$$

$$= \text{Br. } \underline{125,\ 000}$$

2. Summary of annuity method of depreciation.

Year	Dep^{n}. Expense	Implicit interest revenue	Credit to Accumulated Dep^{n}. Account	Balance of Carrying accumulated Dep^{n}. Account	amount of Truck
0					Br. 500, 000
1	125, 000	50, 000	Br. 75, 000	Br. 75, 000	425, 000
2	125, 000	42, 500	82, 000	157, 500	342, 500
3	125, 000	34, 250	90, 750	248, 250	251, 750
4	125, 000	25, 175	99, 825	348, 075	151, 750
5	125, 000	15, 192.50	109, 807.50	457, 882.50	42, 117.50
Total	Br. 625, 000	Br. 167, 117.50	Br. 457, 882.50		

3. Journal entries under the annuity method

Year 1: Depreciation expense……..125, 000

Interest Revenue……50, 000

Accumulated depreciation…….75, 000

B. Sinking-fund method

4. Yearly sinking-fund deposit

$$= \frac{Cost\ of\ asset\ less\ net\ residual\ value}{Amount\ of\ ordinary\ annuity\ of\ 5\ rents\ of\ 1\ at\ 10\%}$$

$$= \frac{Br.500{,}000 - Br.42{,}117.50}{6.1051}$$

= Br. 75, 000

5. Summary of sinking-fund method of depreciation

Year	Annual Deposit	Interest revenue	Total fund Increase	Fund Balance	Depⁿ. Expense	Balance of Acc. Depⁿ. Of Truck	Carrying amount
0							Br. 500, 000
1	Br. 75, 000	-	Br. 75, 000	Br. 75, 000	75, 000	Br. 75, 000	425, 000
2	75, 000	Br. 7, 500	82, 500	197, 500	82, 500	157, 500	342, 500
3	75, 000	15, 750	90, 750	248, 250	90, 750	248, 750	251, 750
4	75, 000	24, 825	99, 825	348, 075	98, 825	348, 075	151, 925
5	75, 000	34, 807.50	109, 807.50	457, 882.50	109, 807.50	457, 882.50	42, 117.50

6. Journal entries under the sinking fund method.

Year 1: Sinking fund……..75, 000

Depreciation expense…….75, 000

Cash…….…..75, 000

Accumulated Depreciation……75, 000

Year 2: Sinking fund…….82, 500

Depreciation Expense……82, 500

Cash……..….75, 000

Interest revenue…….……..7, 000

Accumulated Depreciation……82, 000

2.4 Depreciation methods and management decisions

Plant assets play a large part in the productive process. It is easy to see that the cost of direct material and direct labor becomes a part of finished product. It is not always so clearly recognized, however, that a business enterprise also sells the services of the plant assets used to manufacture and market its products.

The importance of depreciation stems from the various management decision that are affected by it. To the extent that depreciation is a significant part of operating costs, and that operating costs are relevant in business decisions, the relative importance of various depreciation methods are significant in decisions relating to measurement of net income and impact of inflation, computation of income taxes payable, and investment capital.

The purpose of depreciation accounting is to measure the amount that must be recovered from revenue to compensate for the portion of plant asset cost that has been used up. This idea is embodied in the phrase maintenance of capital, which often is used in relation to income measurement. During an inflationary period, any depreciation method based on historical cost tends to understate the

amount of capital consumed (depreciation). Thus, a part of reported net income essentially represents return of capital-users of financial statements should consider this shortcoming in the traditional income measurement model and should make appropriate adjustments to restate depreciation and net income in terms of current cost of plant assets.

Probably the strongest influence on depreciation policy is the income tax law. The direction of the influence is toward rapid depreciation deductions. Depreciation expense reduces taxable income and income tax expense.

The two most important questions relating to the role of depreciation in a capital investment decisions are: Is depreciation a relevant cost in the decision? How does depreciation affect the cash flows from the investment? In essence, two kinds of costs are relevant to the decision to invest capital in productive assets: future costs (costs that will be incurred as the result of the decision) and incremental costs (costs that will change as the result of the decision). The expense represented by depreciation on existing plant assets is attributable to an investment mode at some time in the past. Except to the extent that an existing plant asset may be sold and some portion of the past investment recovered, no present decision can change the amount of cost that has been sunk into that part. Thus depreciation often has been referred to as a sunk cost.

Investment decisions are frequently made on the basis of the expected rate of return on the investment. In the computation of rate of return, net cash flow from the investment generally is a more useful concept than net income from the investment. Depreciation expense does not generate cash directly; it is an expense that does not reduce cash, but is deducted to compute taxable income. Thus, depreciation expense indirectly generates larger cash flows form operations by reducing income taxes. For this reason, depreciation is viewed as a powerful instrument for increasing cash flows and reducing the pay back period (the number of years required to recover on investment in a plant asset) on new investments in plant assets.Check Your Progress –3

1. The composite depreciation method:

A) Is applied to a group of homogeneous plant assets?
B) Is an accelerated method of depreciation?
C) Disregard net residual value. In the computation of the depreciation base
D) Does not involve the recognition of a gain or loss on the retirement of an individual plant asset of the group.

2.5 Depletion of natural resources

Depreciable plant assets usually retain their physical characteristics as they are used in operations. In contrast, natural resources in essence are long-term inventories of material that will be removed physically from their sources. In either case whether accountants are dealing with a "bundle of services" or a "store of material" – the basic problem is to determine the cost of the units of services or material that are consumed during each accounting period. The portion of the cost (or other valuation) assigned to property containing natural resources that is applicable to the units removed from the property is known as depletion.

The Depletion Base

The depletion base of property containing natural resources is the acquisition cost less the estimated net residual value of the property after the resource have been removed. The estimated cost of dismantling, abandoning, or restoring the property is taken into account in the determination of the net residual value of the property.

Acquisition cost of a natural resource includes the price paid for the property and legal fees, broker's fees, and other fees incurred to acquire the property.

Estimate of Recoverable Units

The estimate of economic lives for plant assets is a relatively simple undertaking compared with the estimate of recoverable units of natural resources. The recoverable deposit of a natural resource should be measured in units of desired product, such as an ounce of silver or a pound of copper rather than in units of mined product, such as a ton of raw ore.

The most widely method of depletion for financial accounting is the output (units-of-production) method, which produces a constant depletion charge per unit of the natural resource removed. To illustrate, assume that early in year 7, Low Company acquired mining property for Br. 720, 000. It is estimated that there are 1.2 million recoverable units of the natural resource, and that the land will have a net residual value (after restoration costs) of Br. 60, 000 when the resource is exhausted. The depletion per unit of output is computed as follows:

$$\text{Depletion} = \frac{Cost - net\ residual\ value}{Estimated\ \ total\ \ recoverable\ \ units}$$

$$= \frac{Br.720{,}000 - Br.60{,}000}{1{,}200{,}000\ units}$$

= Br. 0.55 per unit

If Low Company removed 300, 000 units of the natural resources from the ground in year 7, the journal entry to record depletion is as follows:

Depletion (300, 000 x Br. 0.55)…….165, 000

Accumulated depletion of mining property……165, 000

Buildings and equipment used to remove natural resources may have an economic life shorter than the time required to complete the removal, in which case the depreciation of these assets should be recorded over their economic lives. Otherwise, depreciation is computed by the output method, similar to the computation of depletion.

The amount of cost depletion is included in the cost of the inventory of the natural resource and is recognized as an expense (cost of goods sold) only when the inventory is sold.

When additional costs are incurred in the development of mining properties or estimates of recoverable units are revised, the depletion rate is computed by dividing the carrying amount (cost less accumulated depletion, less net residual value) of the mining property (including any additional development costs) by the new estimate of recoverable units.

Check Your Progress –5

1. The cost of certain mineral rights is Br. 400, 000 and that the deposit is estimated at 1, 000, 000 tons of ore of uniform grade.

(i) What is the depletion rate?

(ii) If 90, 000 tons are mined during the year, what is the amount of depletion expense for the year?

2.6 Summary

Depreciation, as defined in accounting, is the systematic allocation of the cost of a plant asset to expense. The cost allocation approach is justified because it matches costs with revenues and because fluctuation in market values is difficult to determine. An entry for depreciation is recorded during each year of the asset's useful life. The entry includes a debit to depreciation expense and a credit to accumulated depreciation.

To compute depreciation, an accountant must establish the depreciation base to be used for the asset, the asset's economic life, and the depreciation method to be used. Determination of the first two factors requires the use of estimates.

The depreciation method selected for a particular asset should be systematic and rational. In other words, the method selected should, to the extent possible, match the probable pattern of decline in an asset's services.

Depreciation expense reduces net income for the accounting period in which it is recorded even though a current cash outflow is not involved. However, depreciation should not be considered as a source of cash. Cash is generated by revenues, not accounting procedures.

Depletion refers to the process of recording the consumption of natural resources (wasting assets). The depletion base for the natural resources includes acquisition cost, exploration costs, and intangible development costs reduced by any residual value related to the land. Depletion is normally based on the number of units extracted during the period, which corresponds the units of production method of depreciation.

2.7 Answers to Check Your progress

1. Annual depreciation expense under the straight line method is computed as:

$$= \frac{Cost - Estimated\ \text{Re}sidual\ Value(net)}{Estimated\ \ Economic\ Life}$$

$$= \frac{Br.6{,}600 - 600}{5} \quad \frac{Br.6{,}000}{5} = \text{Br. } 1,\ 200$$

2. Computation of depreciation expense under sum-of-the-years' digits method:
   a) (Br. 56, 000 – Br. 2, 000) x 8/36* = Br. 12, 000
   b) (Br. 54, 000 x 8/36 x 3/12) + (Br. 54, 000 x 7/36 x 9/12) = Br. 10, 875

   * (8 x 9) ÷ 2 = 36

3. The output method of depreciation is particularly appropriate when plant asset use fluctuates widely from year to year, and depreciation is more closely related to actual use than to functional obsolescence.
4. D
5. (i) The depletion rate is Br. 400, 000 ÷ 1, 000, 000

   = Br. 0.40/ton

   (ii) Depletion expense for the current year is

   = Br. 90, 000 x Br. 0.40/ton

   = Br. 36, 000

2.8 Model Examination Questions

Part I: True/False

_____1. The accounting concept of depreciation reflects the decline in value associated with a plant asset.

_____2. Whenever the economic nature of the asset is the primary determinant of economic life, maintenance plays an extremely vital role in prolonging economic life.

_____3. Because depreciation expense does not require the use of cash, it is theoretically correct to consider depreciation as a source of fund for the enterprise.

_____4. The replacement depreciation method is used when a new asset is purchased to replace an old asset.

_____5. The computation of depletion is essentially the same as the units-of-output method.

Part II: Choose the best answer from the listed alternatives

_____1. Which of the following most accurately reflects the concept of depreciation as used in accounting?

A. The process of charging the decline in value of an economic resource to income in the period in which the benefit occurred.
B. The process of allocating the cost of tangible asset to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset.
C. A method of allocating asset cost to an expense account in a manner, which closely matches the physical deterioration of the tangible asset involved.
D. An accounting concept that allocates the portion of an asset used up during the year to the contra asset account for the purpose of properly recording the fair market value of tangible assets.

_____2. Which of the following depreciation methods does not consider salvage value in computing the depreciation base of the asset?

A. Straight-line
B. Sum-of-the-years'-digits
C. Declining balance
D. Units-of-output-method

_____3. ABC Company purchased a machine with a cost of Br. 165, 000 and a salvage value of Br. 9, 000 on April 1, 1993. The machine will be depreciated over a 12 year useful life using the sum-of-the-year'-digits method. The amount of depreciation ABC Company would record for the year ended 12/31/94 would be:

A. Br. 22, 000
B. Br. 24, 000
C. Br. 16, 500
D. Br. 22, 500

_____4. The economic factors related to an asset's service life include:

A. Obsolescence
B. Wear and tear
C. Decay
D. Unexpected casualties

_____5. Of the following costs related to the development of natural resources, which one is not a part of depreciable cost?

A. Acquisition cost of the natural resource deposit.
B. Exploration costs
C. Tangible equipment costs associated with machinery used to extract the natural resource
D. Intangible development costs such as drilling costs, tunnels, and shafts.

Part III: Work out Exercises

1. Beckham Company purchased a mainframe computer on January 2, 1990, for Br. 1, 200, 000. The system has a useful life of six years, considering obsolescence. Its residual value is Br. 20, 000. Beckham Company uses the straight-line method.

   The following events took place in 1991.

   a. March 1: peripheral equipment costing Br. 30, 000 was added to the mainframe. This equipment can be used with several different mainframes. Beckham Company may replace the mainframe before the disposal of the equipment.
   b. September 1: an additional memory device was added to the mainframe, costing Br. 250, 000. This device has no utility apart from the mainframe but will increase the total residual of the mainframe to Br. 40, 000.

Required: Provide the general journal entry to record depreciation expense for 1991 on the mainframe and related equipment.

2. Mite Engineering Company acquired a large number of small tools at the beginning of operations on January 1, 1990, for Br. 4, 000. During 1990 and 1991, Mite disposed of several

used tools, receiving cash salvage value of Br. 400 in 1990 and Br. 500 in 1991. During 1991, Mite acquired additional tools at a cost of Br. 1, 600. Inventories of tools on hand, valued at current acquisition cost adjusted for the present condition of the tools, indicated a value of Br. 2, 800 on December, 1990, and Br. 3, 600 on December 31, 1991. Mite uses the inventory method of depreciation for small tools.

Required: Give the entries for the inventory system to record the above transactions. Include adjusting entries and the related closing entries.

3. Quick producers acquired factory equipment on January 1, 1992, costing Br. 39, 000. In view of pending technological developments it is estimated that the machine will have a resale value up on disposal in four years of Br. 8, 000 and that disposal costs will be Br. 500.

   Estimated Economic life:

   Years…….4

   Service hours 20, 000

Actual operations:	Service hours
1992	5, 700
1993	5, 000
2000	4, 800
2001	4, 400

Required: Round to the nearest birr and show computation:

1. Prepare a depreciation schedule for the service hour's method assuming the accounts are closed each December 31.
2. Compute depreciation expense for the first and second years assuming
   a) Straight-line method
   b) Sum-of-the-year'-digits method
   c) Double-declining depreciation method

4. Arizona Mining Company acquired property with copper ore reserves estimated at 2 million pounds for Br. 1, 800, 000. The property will have an estimated value of Br. 1, 000,000 after the ore has been extracted. Before any ore could be removed, it was necessary to incur Br. 500, 000 of developmental costs. In the first year, 200, 000 pounds were removed and 160, 000 pounds of ore were sold; in the second, 400, 000 pounds were removed and 410, 000 pounds were sold. In the course of the second year's production, discoveries were made that indicated that if an added Br. 1, 460, 000 is spent on developmental costs during the third year, futtock removable ore will total 2.5 million pounds. After there added costs were incurred, production for the third year amounted to 510, 000 pounds with sales of 450, 000 pounds.

   Required:

   1. Calculate the total depletion amount and the depletion expense that Arizona should report on its income statement for each of the three years. Should supporting computations and round units costs to the nearest three decimal places (assume FIFO)
   2. Give the journal entry to record depletion and depletion expense at the end of each of the three years.

5. Manara Corporation purchased the following assets January 1, 1990

Quantity	Type	Unit Cost	Estimated Unit Salvage value	Unit Useful life
10	Truck	Br. 6, 000	Br. 1, 000	5 years
5	Bus	12, 000	2, 000	8 years

Using the composite system of depreciation, what is the composite rate based on cost?

2.9 Glossary

1. Accelerated Depreciation: Depreciation methods that produce larger depreciation charges during the early years of an asset's life and smaller charges in the later years.
2. Depletion: The cost created by consuming the usefulness of natural resources.
3. Depreciation: The decrease in usefulness of all plant assets except land.
4. Declining balance method: A method of depreciation that provides declining periodic depreciation charges to expense over the estimated life of an asset.
5. Inadequacy: A condition in which the capacity of plant assets becomes too small for the productive demands of the business.
6. Obsolescence: A condition in which, because of new inventions and improvements, a plant asset can no longer be used to produce goods or services with a competitive advantage.
7. Salvage value: The amount that management predicts will be recovered at the end of a plant assets service life through a sale or as a trade-in allowance on the purchase of a new asset.
8. Straight-line method: A method that allocates an equal portion of the total depreciation for a plant asset (cost minus salvage) to each accounting period in its economic life.
9. Sum-of-the-years'-digits depreciation method: A method of depreciation that provides for declining periodic depreciation at a constant amount over the economic life of the asset.
10. Units-of-output method: A method of depreciation that provides for depreciation expense based on the expected productive capacity of an asset.

CHAPTER 3
CURRENT LIABILITIES AND PAYROLL ACCOUNTING

Learning Objectives: After studying this chapter, you should be able to;

- Describe about current liabilities.
- Discuss the importance of Payroll Accounting.
- Define of payroll related terms
- Identify possible components of payroll checks.
- Identify Major procedures or activities involved in the accounting for payroll
- Record payroll related transactions.

3.1. Introduction

Liabilities classified as current and long term liabilities. Current liabilities are liabilities that will mature (due) in less than one year or one operating cycle, whichever is shorter. Long-term liabilities are liabilities that will mature (due) in greater than one year or one operating cycle, whichever is longer. Hence there are various types of liabilities such as: Account Payable, Short Term Notes Payable, Accrued Liabilities, Unearned Revenue and so on.

Accounts Payable: accounts payable is oral promises to others to pay for goods or services purchased on open account.

Illustration: A corporation purchased inventory on open account at an invoice price of $5,000; terms were 2/10, n/30;

Purchases	5,000	
Accounts Payable		5,000

The corporation paid the invoice within the discount period

Accounts Payable	5,000	
Cash		4,900
Purchase Discounts		100

Short Term Notes Payable: notes payable is written promises to pay a certain sum of money at a specified future date.

Illustration: A corporation purchased inventory by issuing a $10,000 short term notes payable.

Purchases	10,000	
Short Term Notes Payable		10,000

Sales Tax Payable: business collect sales tax in addition to the price of the item sold. Thus the business must pay the government in less than a year.

Illustration: ABC company sold 2 TV at a unit price of $1,000 plus 15% VAT in cash

Cash	2,300	
Sales		2000
VAT Payable		300

At the end of the month, ABC Company remitted the collected VAT to the government.

VAT payable	300	
Cash		300

Current Portion of Long-term Notes Payable: most long term notes payables are paid in installments. The current portion of notes payable (also called current maturity) is the principal amount that will be paid within one year.

Illustration: ABC Company borrowed $20,000 on May 1, 2015

Cash	20000	
Long Term Notes Payable		20000

If the notes will be paid over four years with repayment of $5000 on May 1 of each four years. The following entry required to reclassify some of the long term notes payable in to the short term notes payable.

Long Term Notes Payable	5000	
Short Term Notes Payable		5000

Unearned Revenues--amounts that are received before goods are delivered or services are rendered are recognized as a current liability until the goods are delivered or the services are rendered.

Illustration: ABC Company rents the portion of its building for about ten months. Hence the company received $6000 for the next ten months.

Cash	6000	
Unearned Revenue		6000

Accrued Liabilities: accrued expenses are any expenses that has been incurred but not yet paid in cash. When expenses are accrued (debited), it often has a related unpaid amount (accrued liabilities (credited)).

Illustration: ABC Company used the services of its employees for the month of June, 2015 but not paid their salaries of $10,000

Salary Expense	10000	
Salary Payable		10000

The Payroll System in Ethiopian Context

The importance of Payroll Accounting

The concept of payroll is often referred to the total amount paid to employees of an organization as a compensation for the service rendered to a firm in a given period of time. The payroll accounting of a firm has to be given emphases of significance for the following reasons (as stated in the entitled "Accounting Principles" by Fees and Warren, Page 297):

1. Employees are sensitive to payroll errors and irregularities, and maintaining good employees moral requires that the payroll be paid on a timely, accurate basis.
2. Payroll expenditures are subject to various government regulations.
3. The payment for payroll and related taxes has significant effect on the net income of most business enterprises.

For the aforementioned reason the need for accurate system of handling the payroll of a business is unquestionable.

Definition of payroll related terms:

Salary or Wages: Salary and wages are usually used interchangeably. However, the term wages is more correctly used to refer to payments for manual labor that are paid based on the number of hours worked or the number of units produced. Therefore, they are usually paid when a particular piece of work is completed or weekly. On the other hand, compensations to employees on monthly or annual basis are termed as salaries.

It must be clear that when we say an employee, we refer to an individual who works primarily to an organization and whose activities are under the direction and supervision of the employer. Hence, an employee is different from an independent contractor, a self-employed individual who works on a fee basis to a firm.

The pay period: The pay period refers to the length of time covered by each payroll payment. Payment periods for wageworkers are usually on weekly basis. On the other hand, salaried employees' pay periods are monthly or semimonthly.

The pay day: The day on which wages or salaries are paid to employees, usually the last day of the pay period, is known as the pay day.

Basic Records of a payroll accounting system includes:

1. A payroll register (or sheet),
2. Individual employees earning records ,and
3. Usually, pay checks.

These records are generated from a payroll system that is operated manually or using computers.

- A payroll Register (sheet): The entries list of employees of a business along with each employee's gross earnings, deductions and net pay (or the take home pay) for a particular payroll period. The basic for the preparation of the payroll register can be the attendance sheets, punched (clock) cards or time cards.
- Employee earnings record: it is a summary of each employee's earnings deductions, and net pay for each payroll period and of cumulative gross earnings during the year. It is a separate record kept for each employee. The individual employees' earnings record helps the employer organization to properly summarize and file tax returns.
- Pay checks: an instrument for paying salary if the firm makes payment via writing a check in the name of each employee for the net pay or a check for the total net pay.
- Gross earning: is the total pay to an employee before deductions for the pay period.
- Payroll taxes: are taxes levied against the employer on the payroll of a firm. It is an additional payroll related expenses to an employer.
- Withholding taxes: these are taxes levied against the earnings of employees of an organization and with hold by the employer per the regulations of the concerned government.
- Payroll deductions: all the reductions from the gross earnings of an employee such as withholding taxes, union dues, fines credit associations pays etc.
- Net pay: the gross earnings after subtracting all the deductions. An employee on the pay day sometimes knows it as take home pay the amount collected.

possible components of payroll checks

1. Employee number: numbers assigned to employees for identification purpose when a relatively large number of employees are included in the payroll register.
2. Name of employees: list of the names of employees
3. Earnings: money earned by employees of a firm from various source. It may include:

a. The basic salary or regular earnings: A flat monthly salary of an employee is that paid for caring out the normal work of employment and subject to change when the employee is promoted.

b. Allowances: money paid monthly to an employee for special reasons, which may include:

I. Position allowance: a monthly some paid to an employee for bearing a particular office responsibility. E.g. head of a particular department of division.

II. House allowance: a monthly allowance given to cover housing costs of the individual employee when the employment contract requires the employer to provide housing but fail to do so.

III. *Hardship allowance: a sum of money given to an employee to compensate for an inconvenient circumstances caused by the employer. For instance, unexpected transfer to a different and distant work area or location. It is sometimes known as disturbance allowance.*

IV. *Desert allowance: is monthly allowance given to an employee because of an assignment to a relatively hot region.*

V. *Transportation (fuel) allowance: is monthly allowance to an employee to cover the cost of transportation up to work place if the employer has committed itself to provide transportation services.*

c. Over time earning: Over time work is the work performed by an employee beyond the regular working hours or days. It is the amount payable to an employee for overtime work done. In Ethiopia, in this respect, according to article 33 of proclamation No 64/1975 the following is discussed about payment for overtime work.

1. *A worker shall be entitled to be paid at a rate of one and one quarter(1.25) times his ordinary hourly rate for overtime work performed before 10 o'clock in the evening (10 pm)*
2. *A work shall be paid at the rate of one and one half (1.5) times his ordinary hourly rate for overtime work performed between 10 o'clock in the evening (10P.M.) and six o'clock in the morning (6P.M).*
3. *Over time work performed on the weekly rest day shall be paid at a rate of two (2) times the ordinary hourly rate of payment.*
4. *A worker shall be paid at a rate of two and half (2.5) times the ordinary hourly rate for overtime work performed on a public holiday.*

Hence, the gross earnings of an employee may, therefore, include the basic salary, allowances and overtime earnings. You may find sometimes other form of earnings such as Bonus that is paid to employees for achieving results better than usual.

d. Deductions: These are subtractions made from earnings of employees that is because it is required by government or permitted by the employee himself.

In our country, Ethiopia, some of the deductions against the earnings of employees are:

I. Employee income tax:

The first schedule of our income tax law, as provided in the Income Tax Proclamation of 2002, i.e. schedule A provides for the tax rate and modality of assessment of income tax collected from employment. Articles 10-13 of the proclamation govern the modalities and rates of taxation on such income.

a. **The Definition of 'Employment' for Tax Purposes**

As we have seen from the above explanation, Schedule A is devoted to employment income tax. Accordingly, a major component of this schedule is the term „employment"; and thus it is only fair to start by defining that term before we enter into a detailed discussion of the provisions that deal with this schedule.

As can be inferred from Articles 2(12) and 12 of the Income Tax Proclamation, employment is any arrangement, whether contractual or otherwise, whereby an individual to be called the employee is engaged, whether on a permanent or on a temporary basis, to perform services under the direction and control of another person to be called the employer.

Contractors are excluded from the ambit of employees by way of Article 2(12), which in (b) defines a contractor as an individual who is engaged to perform services under an agreement by which the individual retains substantial authority to direct and control the manner in which the services are to be performed.

Looking to the whole picture, employment income tax is tax that is imposed upon any payments or gains in cash or in kind received from employment by an individual, including income from former employment or otherwise from prospective employment.

c. **Exclusions from Gross Income**

As of principle, Schedule A applies to tax levied on employment income in the sense that income tax will be levied on any gains in cash or in kind which have been received from employment. However, certain exclusions have been provided by Council of Ministers Income Tax Regulations No. 78/2002. According to Article 3 of the regulation, the following categories of gains have been excluded from the ambit of taxable income and thus will not be subjected to income taxation.

A. amounts paid by employers to cover the actual cost of medical treatment of employees;
B. allowances in lieu of means of transportation granted to employees under contract of employment;
C. hardship allowance;
D. amounts paid to employees in reimbursement of traveling expenses incurred on duty;
E. amounts of travelling expense paid to employees recruited from elsewhere than the place of employment on joining and completion of employment or in case of foreigners traveling expenses from or to their country, provided that such payments are made pursuant to specific provisions of the contract;
F. allowances paid to members and secretaries of boards of public enterprises and public bodies as well as to members and secretaries of study groups set up by the Federal or Regional Government;
G. income of persons employed for domestic duties;

d. Exemptions

In addition to the exclusions provided by the income tax regulation, there are certain exemptions that have been provided by Article 13 of the Income Tax Proclamation. Accordingly, the following categories of income have been exempted from payment of income tax as prescribed by the proclamation:

A. income from employment received by casual employees who are not regularly employed provided that they do not work for more than one (1) mo nth for the same employer in any twelve (12) months period;
B. pension contribution, provident fund and all forms of retirement benefits contributed by employers in an amount that does not exceed 15% (fifteen percent) of the monthly salary of the employee;
C. subject to reciprocity, income from employment, received for services rendered in the exercise of their duties by:
    - diplomatic and consular representatives, and
    - other persons employed in any Embassy, Legation, Consulate or Mission of a foreign state performing state affairs, who are nationals of that state and bearers of diplomatic passports or who are in accordance with international usage or custom normally and usually exempted from the payment of income tax.

D. income specifically exempted from income tax by:

- any law in Ethiopia, unless specifically amended or deleted by this Proclamation;
- international treaty; or
- an agreement made or approved by the Minister.

E. The Council of Ministers may by regulations exempt any income recognized as such by this Proclamation for economic, administrative or social reasons.

F. Payments made to a person as compensation or a gratitude in relation to: (i) personal injuries suffered by that person; (ii) the death of another person.

Tax Rate and Tax Base

It has been established in the previous chapter that, at present, the rate of taxation is progressive almost all over the world. Ethiopia is no exception to this; and the rate provided by Schedule A of our income tax law is progressive as well. Accordingly, the following table shows the tax bracket with their tax rate and direct deduction

Monthly Income bracket in Birr	Tax rate	Direct deduction
0- 600	Exempted	0
601----1650	10%	60
1651---3200	15%	142.5
3201---5250	20%	302.5
5251---7800	25%	565
7801---10900	30%	955
over 10900	35%	1500

NB:- The direct deduction for each bracket of income is used to calculate implement income tax. Direct deduction is deducted from employment income tax calculated from the income in the bracket multiplied by its correspondent tax rate. Direct deduction for each tax bracket is computed by using the following formula

Direct deduction = (lower limit of tax bracket X present tax rate) – previous tax paid

For example let us compute the direct deduction of tax for income bracket of birr 3201-5250

Solution

Previous tax paid (from income up to 3200 Birr is calculated as follows

employment income	taxable income	tax rate	income tax
from Br 0-600	exempted	o	0
601-1650	1050	0.1	105
1651-3200	1550	0.15	232.5
total implement income tax			337.5

Direct deduction = (lower limit of present tax bracket X present tax rate) – previous tax paid

= (3200 X 20 %) - Br 337.5 = Br 640- 337.4 = 302.5

Illustration

To illustrate employment income tax calculation, assume Alemu kebede is a lecturer in Wollo University with monthly basic salary of Br 11,200.00. During HIDAR 2010, E.C. Alemu Kebede has worked all hours expected from him in a month. Required compute employment income tax of Alemu kebede on HIDAR 30 ,2010 E.c

Solution;- the employment income tax of Alemu kebede for Hidar 2010 e.c is calculated as follows

employment income	taxable income	tax rate	income tax
from Br 0-600	exempted	o	0
601-----1650	1050	0.1	105
1651----3200	1550	0.15	232.5
3201---- 5250	2050	0.2	410
5251-----7800	2550	0.25	637.5
7801----10,900	3100	0.3	930
10,900----11200	300	0.35	105
total employment tax of Alemu			2420

The above calculation way take time and may be led to mistakes. Shortly we can calculate the implement income tax for the above income by using direct deduction. Accordingly employment income tax equals to employment income subjected to tax time by tax rate to the income minus correspondent direct deduction. For Alemu income is Br , 11,200. This income has 35 percent of tax rate and 1,500 direct deduction. Therefore employment income tax of Alemu is

(11,200x35%)- 1500 = br 2420

II Pension contribution:

Permanent employees of who are governed by the existing regulations of the Ethiopian public servants are expected to pay or contribute 7% of their basic salary to the government pension trust fund. This amount should be withheld by the employer from the basic salary of each employee on every payroll and latter be paid to the respective government body. On the other hand, the employer is also expected to contribute towards the same fund 11% of the basic salary of every permanent employer of it. None government employers and not profit organizations use the above pension regulation if they have employees of two nad more employees.

To illustrate let as take Abebe, employee of Wollo University who has Br 13200 basic salary. The pension contribution contributed by Abebe in each month is Br 924 (13200X7%). In addition employer (Wollo university) contribute pension for abebe in each month with the amount of Br 1452 (13200X11%). Therefore the total pension contribution in each month for Abebe is 2376 (924+1452).

III Other deductions

Apart from the above two kinds of the deduction from employees earnings, these deductions can be classified in to two types. These are

1. Voluntary deductions:- these are deduction deducted by the interest or order of employees. Example of such deductions is, Contribution for saving and credit institution, association, and payment of liabilities etc.
2. Non-Voluntary deduction:- these are other payroll deductions that are imposed by laws or regulation and authorized bodies to deduct some amount from income of employees . example deduction for health insurance in some country, deduction by court order etc. Each of the major other deductions may be put in special column in the payroll register.

For example Abebe may have the following other payroll deduction

- ✓ Saving of 500 birr in credit and saving institution deductible from payroll
- ✓ Payment of liabilities for bank amount to Br 400 monthly
- ✓ Contribution to red cross society amount 2000 annually deductible monthly etc

Ultimately, the sum of the employees' income tax, pension contributions and other deductions gives the total deduction from the gross earning of the employee.

e. Net pay: This amount is held in one column of the payroll register representing the excess of gross earning over the total deductions of the employees. The column net pay total tells the grand total deductions made from the earnings of the employees.

f. Signature: Unless some other document is used, the payroll sheet may be designed to allow a column for signature of the employees after collection of the net pay.

In general, a payroll register should at least show the earnings, deductions and the net pay along with the names of the employee.

Payroll register sheet :- refers to a more column work sheet prepared to compute net pay of an employee in a month. It shows the following information

- ✓ Employees ID and full name
- ✓ Earning (basic salary allowance and other earngings)
- ✓ Deductions (such as employment income tax, pension contributed by the employee, other deduction)
- ✓ Net or home pay
- ✓ Signature

Major procedures or activities involved in the accounting for payroll

1. Gathering the necessary data. All the relevant information about every employee should be gathered. This activity requires reviewing various documents and to do some arithmetic work.
2. Include the name of the employees along with the gathered data such as earnings, deductions, and net pays in the appropriate columns of the payroll register.
3. Totaling and proving the payroll register. It must be proved that the grand total earning equal the sum of the grand totals of deductions and net pays of the register.

4. The accuracy and authenticity of the information summarized in the payroll register should be verified by a different person from the one who compiles it.
5. The pay roll is approved by the authorized personnel.
6. Paying the payroll either in cash (this may be after cashing a check issued for the total net pay of the payroll) or issuing a check for every individual employee for the net amount payable to each employee.
7. Recording the payment of the payroll and recognition of the withholding tax liabilities.
8. Recoding the payroll taxes expenses of the employer.
9. Paying and recording withholding and payroll tax liabilities to the concerned authority, in our case to Inland Revenue authority administration, on time.

Journal entries prepared in relation to payroll :-The following journal entries are prepared during preparation of payroll and payment payroll

A. When payroll is prepared and ready for payment

Salary expenses ----------xxx

Employee income tax payable ----------xx

Pension contribution payable----------xx

Credit association payable----------xx

Salary payable ----------xxx (net pay amount)

B. Recording the payment of salary to employees

Salary expenses ----------xxx

Employee income tax payable ----------xx

Pension contribution payable----------xx

Credit association payable----------xx

Cash ---------- xxx (net pay amount)

C. Record the payroll tax expenses

This journal entry is prepared to record the employment income tax withhold by the employer to the government tax authority (when the employer transferred the employment income tax to tax authority

Employment income tax payable	xxx	
Cash		xxx

D. When pension contribution is paid to social security

Pension payable	xxx	
Cash		xxx

E. When other deduction is p paid to concerned bodies

Other deduction payable by their name	xxx	
Cash		xxx

Finally the salary expense will be closed by the following journal entry

Income summery	xxx	
Salary expense		xxx

Payroll register sheet preparation cycle

The following cycle should be followed during preparation of payroll register sheet

1st receive payment request later. It is prepared by human resource administration department which contains the following information

- ✓ List of employees with their updated earnings, available deductions rather than income tax and pension
- ✓ Hours worked during the payroll period for each employees
- ✓ List of Hired and fired employees
- ✓ And other necessary information

2nd update payroll formations like earnings list of employees deductions etc (done by payroll or accounting department

3rd prepare payroll register sheet by following the following procedures

- ✓ Identify the types of earning for each employee and compute gross earning
- ✓ Identify and compute total deduction
- ✓ Compute net pay
- ✓ Prepare payroll register sheet
- ✓ Check and authorize it by concerned bodies

4th record the payroll liabilities

5th Make payment to employees and other concerned bodies and record the payment

6th close the payroll expense

Illustration

To illustrate let as take the following employees of wollo University with their earnings in and additional information for Meskerm 2010 E.C

ID NO.	NAME	INCOME OR BENEFIT						
		B S	ALLOANCE				OVERTIME WORK	
			HOME	Fuel	HEALTH	HARDSHIP		
UW-OO1	Aman Ahmed	10400	800	300			20 hours up to 10 pm	
UW-OO2	Abebaw melaku	3400	600		300	200	16 hours on weekend rest days	
UW-OO3	Seble Dinku	5200	400	200			18 hours mid night	
UW-OO4	Mekdes Adamu	1200		300	200	250	8 hours on public holy day	

In addition the following information are prepared for payroll of meskerm 2o1o E.c

1. EXCEPT Mekdes Adamu all employees are permanent
2. All employees are expected to work 160 hours per month. All impoyees fulfilled their duties except Seble dinku who has been absent for 24 hours without permission or legal evidence
3. Employee iD number uw- 001 and uw- 002 agreed for deduction of Br 500 to be contributed for saving and credit institution of the university
4. All employees have agree to buy abay bond by their basic salary amount paid in 12 months
5. The local court ordered human resource department to deduct BR 300 monthly income of Abebaw melaku

Based on the above information

A. Prepare payroll register sheet for Meskerem 2010E.C
B. Prepare journal entries on preparation of payroll, payment of salary and payment of all withholds

Solution

Prepare payroll register sheet for Meskerem 2010E.C

Step 1:- compute gross earnings of employees.

Gross earnings of Aman Ahmed (uw-001)

Gross earning equal to the sum of basic salary, allowance and overtime earnings

For Aman basic salary Br10400

Allowance = house allowance Br 800

Fuel or transport allowance 300

Total allowance 1100

Overtime earnings:- refers to earning of employees from irregular hours worked by the employees

In Ethiopian context an employee is expected to work 4o hours per week and 160 hours per month. That is 8 hours per day from Monday up Friday regularly. In addition the employee can work regular hours in the following time

- During evening up to 4 pm (up to 4 o,clock local time) (from Monday up to Friday)
- During mid night from 4 pm- 6 am (from 4 o,clock – 12 o,clock local time (from Monday up to Friday)
- During weekend rest days (Saturday and Sunday in most cases)
- During public holy day (example x-mass, good Friday, eid Adwa victory day etc)

If the employee works in the above irregular hours, the employee can get overtime earning as follows

Overtime earning = irregular hour earning rate X hours worked

Irregular hour earning rate = (regular hour earning rate X OTE multiplier)

Regular hour rate can be stated or decided by the employer. If it is not stated by the employer, it can be computed as basic salary divided by hours work expected from employee during a month.

Irregular hour earning rate can be computed by the following table

	Duration of irregular hours	Multiplier	Irregular hour earning rate
	(up to 4 o,clock local time	1.25	Regular hour earning rate x1.25
	from 4 pm- 6 am	1.5	Regular hour earning rate x1.5
	Weekend days	2	Regular hour earning rate x2
	Public holydays	2.5	Regular hour earning rate x 2.5

Accordingly overtime earning of Aman Ahmed is computed as follow

Hours worked = 16 hours on weekend rest days

Regular hour rate = BS/ hours in the month = 10400/160 =65

Irregular hour rate = regular hour earning rate x multiplier = 65x1.25 = 81.5

Overtime earning = irregular hour worked X irregular hour rate = 20 x 81.5 = 1625

Overtime earning = BS+ allowance+ OTE = 10400+1100+1625 = Br 13125

1. Gross earning of abebaw melaku

Gross earning equal to the sum of basic salary, allowance and overtime earnings

For Abebaw basic salary		Br 3400	
Allowance = house allowance	Br 600		
Health allowance	300		
Hardship allowance	200		
Total allowance			1100

Hours worked = 20 hours up to 4 pm

Regular hour rate = BS/ hours in the month = 3400/160 =21.25

Irregular hour rate = regular hour earning rate x multiplier = 21.25x2 = 42.5

Overtime earning = irregular hour worked X irregular hour rate = 16 x 42.5 = 680

Overtime earning = BS+ allowance+ OTE = 3400+1100+680 = Br 5180

2. gross earnings of Seble Deiku

Gross earning equal to the sum of basic salary, allowance and overtime earnings

For seble basic salary

Basic salary:- in Meskerem seble has been a bsent form work place for 24 hours. Therefore the her basic salary does not include amount that can be earned from work of 24 hours.

Basic salary of seble in Meskerem is calculated for 136 hours (160-24). It is regular hour rate X 136= (5200/160)x136 = Br 4420

Allowance = house allowance Br 400
Fuel 200
Total allowance 600

Hours worked = 18 during mid night

Regular hour rate = BS/ hours in the month = 5200/160 =32.5

Irregular hour rate = regular hour earning rate x multiplier = 32.5X1.5 = 48.75

Overtime earning = irregular hour worked X irregular hour rate = 18 x 48.75 = 877.5

Overtime earning = BS+ allowance+ OTE = 4420+600+877.5 = Br 5897.5

NB:- such deduction from basic salary does not affect other deductions but the income tax

Gross earnings of mekdes melaku

Gross earning equal to the sum of basic salary, allowance and overtime earnings

For mekdes basic salary Br 1200
Allowance = fuel allowance 300
Health 200
Hardship 250
Total allowance 750
Overtime earning

Hours worked = 8 during public holyday

Regular hour rate = BS/ hours in the month = 1200/160 =7.5

Irregular hour rate = regular hour earning rate x multiplier = 7.5X2.5 = 18.75

Overtime earning = irregular hour worked X irregular hour rate = 8 x 18.75 = 150

Gross earning = BS+ allowance+ OTE = 1200+750+150 = Br 2100

Step 2 compute deductions

A. employment income tax

i. Employment income tax of aman Ahmed

Taxable income: - refers to gross earning less tax deductions and exemptions. For Aman fuel allowance is not taxable income

Therefore taxable income of Aman = GE- fuel allowance = 13225- 300 = 12925

Taxable income bracket		difference	tax rate	tax
0	600	600	0	0
601	1650	1050	0.1	105
1651	3200	1550	0.15	232.5
3201	5250	2050	0.2	410
5251	7800	2550	0.25	637.5
7801	10900	3100	0.3	930
10900	12825	1925	0.35	673.75
total employment income tax				2988.75

Or The taxable income of Aman lies on the tax bracket which has 35% tax rate with direct deduction of 1500

Employment income tax f Aman = (12825X.35)- 1500 = 2,988.75

ii. Employment income tax of Abebaw

Taxable income of Abebaw = GE- fuel allowance. According to Ethiopian tax law health or medical benefit is not taxable

Taxable income of Abebaw = grass earning – (fuel allowance +health allowance =5180-500 = 4680

Taxable income bracket		difference	tax rate	tax
0	600	600	0	0
601	1650	1050	0.1	105
1651	3200	1550	0.15	232.5
3201	4680	1480	0.2	296
total employment income tax				633.5

Or There for The taxable income of Abebaw lies on the tax bracket which has 20% tax rate with direct deduction of 302.5?

Employment income tax 0f Abebaw = (4680X.2)- 302.5 = 633.5

iii. Employment income tax of seble dinku

Taxable income of Seble = grass earning – fuel allowance =5897.5 -200 = 6377.5

Taxable income bracket		difference	tax rate	tax
0	600	600	0	0
601	1650	1050	0.1	105
1651	3200	1550	0.15	232.5
3201	5250	2050	0.2	410
5251	5697.5	447.5	0.25	111.85
total employment income tax				859.35

Or the taxable income of seble lies on the tax bracket which has 25% tax rate with direct deduction of 565?

Employment income tax 0f seble = (5697.5X.25)- 565 = 859.35

iv. Employment income tax of mekdes

Taxable income of mekdes = grass earning – fuel allowance+ health allowance = 2100-750 = 1350

Taxable income bracket		difference	tax rate	tax
0	600	600	0	0
601	1350	750	0.1	75
total employment income tax				75

Or the taxable income of mekdes lies on the tax bracket which has 10% tax rate with direct deduction of 60?

Employment income tax 0f mekdes = (1350X10%)- 60 = 75

B. Pension contributions

According to the Ethiopian pension law every employee whether they are permanent or temporary they have to contribute 7% their monthly income. Accordingly the pension contribution for the above employees of University computed as follow

Name	basic salary	pension rate	monthly pension deduction
Aman ahmd	10400	0.07	728
Abebaw Melaku	3400	0.07	238
Seble +Dinku	5200	0.07	364
Mekdes adamu	1200	0.07	84

C. Other deductions:- refers that are deducted from payroll either by the interest of the employee or some legal orders. Accordingly the above employees have the following other deductions from payroll

name	deductions	amount
Aman ahmd	saving and credit	500
	abay bond (10400/12	867
	total other deduction	1367
Abebaw melaku	saving and credit	500
	abay bond (3400/12	283
	court case	300
	total other deduction	1083
Seble Dinku	abay bond (5200/12	433
Mekdes Melaku	abay bond (1200/12	100

Total deduction: - implies the sum of all deductions (income tax + pension +other deduction. For the above employees it is computed as follows

	deduction						
employemnt	income tax	pension	other				
			saving	abay	court	TOD	TD
aman	2988.75	728	500	867		1367	5083.75
abebaw	633.5	238	500	283	300	1083	1954.5
Seble	859.4	364		433		433	1656.4
mekdes	75	84		100		100	259

4th step compute net pay: refers to the difference between gross income and total deduction. For the abve employees net income of each is computed as follows

name	gross earning	total deduction	net pay (home pay)
Aman ahmd	13125	5083.75	8041.25
Abebaw Melaku	5180	1954.5	3225.5
Seble Dinku	5897.5	1656.4	4241.5
Mekdes adamu	2100	259	1841

5th prepare payroll register sheet

Payroll register sheet :- refers to a more column work sheet prepared to compute net pay of an employee in a month. It shows the following information

- ✓ Employees ID and full name
- ✓ Earning (basic salary allowance and other earnings)
- ✓ Deductions (such as employment income tax, pension contributed by the employee, other deduction)
- ✓ Net or home pay
- ✓ Signature

For Meskerm 2010 E.C wollo University, s accounting department prepares payroll register sheet as follow for the above employees

STEP 6 Prepare payroll related journal entries

After the accountant prepare and authorized the payroll register sheet the following journal entries are prepared

A. When payroll is prepared and ready for payment

accounts	debit	credit
salary expense	26302.5	
income tax payable		4681.5
pension payable		1414
payable to credit and saving		1000
paybale to abay		1683
payble to court order		300
		17954.2

B. Recording the payment of salary to employees

accounts	debit	credit
salary expense	26302.5	
income tax payable		4681.5
pension payable		1414
payable to credit and saving		1000
payable to abay		1683
payable to court order		300
Cash		17224

C. Record the payroll tax payment

This journal entry is prepared to record the employment income tax withhold by the employer to the government tax authority (when the employer transferred the employment income tax to tax authority

Employment income tax payable 4681.5

Cash 4681.5

D. When pension contribution is paid to social security

NB the amount of pension contribution to be transferred includes pension contribution by employees and pension contributions by pay employer to employees. Tis equals to (7%+11%) X basic salary

For our illustration total pension contributions = 18%(10400+3400+5200+1200) = 3636

Pension payable 3636

Cash 3636

E. When other deduction is paid to concerned bodies

accounts	debit	credit
payable to credit and saving	1000	
payable to abay	1683	
payable to court order	300	
Cash		2983

Finally the salary expense will be closed by the following journal entry

Income summery	19420	
Salary expense		19420

Summary

The term payroll is used to refer to the total amount paid to employees for a certain period. Payroll includes amounts paid for salaries to managerial or administrative employees as well as wages paid for manual labor.

Accounting systems for payroll and payroll taxes are concerned with the records and reports associated with the employer-employee relationship. It is important that the accounting system provide safeguards to ensure that payments are accord with management's general plans and its specific authorizations.

Various federal, state, and local laws require employers to keep accurate payroll records and to prepare reports and submit to the appropriate governmental units. The law also requires employees and for taxes imposed on itself. These record must be kept for specified periods of time and be available for inspection by those responsible for enforcement of the laws.

Payroll data may also be useful in negotiations with labor unions, in settling employee grievances, and in determining rights to vacations, sick leaves, and retirement pensions.

Salary and wages are usually used interchangeably. However, the term wage is more correctly used to refer to payments to unskilled manual labor. It is usually paid based on the number of hours worked or the number of units produced. Therefore, wages are usually paid when a particular piece of work is completed or on a weekly basis. On the other hand, salaries refer to payments to employees who render managerial, administrative, or similar services. Salaries are usually paid to skilled labor on a monthly or yearly basis.

A payroll register is the list of employees of a business along with each employee's gross earnings, deductions, and net pay (take-home-pay) for a particular pay period. The payroll register (sheet) is prepared based on attendance sheets, punched (clock) cards or time cards.

Components of a payroll register include Employee number, Employee name, Earnings (usually Basic or regular salary, Allowances, and overtime), Deductions, Net pay, and Signature.

Deductions are subtractions made from the earnings of employees. Deductions are either required by law or permitted by the employee himself. The principal deductions in Ethiopia are: Employee Income tax, pension contribution, and other deductions like deductions to pay life insurance premiums, to repay loans from the employer, for credit association, to pay for donation to charitable organization, contribution to 'Idir', etc.

Net pay or take-home-pay represents the excess of gross earnings over total deductions of an employee.The payroll sheet should have a column for signature of the employee to be taken when the employee collects the net pay. In general, a payroll register (sheet) should at least show the total earnings of each employee, deductions, and the net pay together with the names and signatures of employees.

Model examination

Part I write true if the statement is correct and write false if the statement is incorrect

Part II multiple choice; choose the best answer from the given alternantives given below each question.

Illustration: ABC Company pays the salary of its employees according to Ethiopian calendar month. The forth coming data relates to the month of Hidar, 1998

S. no	Name of the employee	Basic salary	Monthly allowance	Overtime hours worked	Duration of the work	Basic salary per hour
01	Senayit Bahiru	2080	100	10	Up to 10:00 pm	13
02	Petros Chala	640	------	8	10 pm to 5 am	4
03	Abdu Kedir	1280	------	6	Weeky rest day	8
04	Leila Jemal	960	50	---	-----	6
05	Kiros wolde	480	50	10	Public holiday	3

NB: note that the management of the agency usually expects a worker to work 40 hours in a week and during Hidar 1998 all workers have done as they have been expected. Besides, all workers of this agency are permanent employees except Petros chala; the monthly allowance of Keros wolde is transportation allowance; Abdu Kedir agreed to have a monthly br. 200 be deducted and paid to the credit association of the agency as monthly saving.

Instructions:

1. Prepare the payroll register or sheet for the agency for the month of Hidar 1998
2. Record the payment of the salary as of Hidar 30, 1998 using check number 41 as a sources document.
3. Record the payroll tax expenses for the month of Hidar, 1998
4. Record the payment of the claim of the credit association of the agency that arose from Hidar payroll assume that the payment was made on Tahesase 1,1998
5. Assume that withholding tax and payroll taxes of the month of Hidar, 1998 have been paid on Tahesase 5,1998 via check number 50 recorded the required journal entry

Solutions: Payroll sheet preparation is a step by step process, as illustrated below.

Over time earnings= Over time hours x (ordinary hourly rate x ordinary rate)

1. Senait : 10hrs x (13 x 1.25)= Br162.50
2. Petros : 8hrs x (4 x 1.50) = Br 48
3. Abdu: 6hrs x (8 x 2)= Br 96
4. Kiros :10hrs x (3 x 2.5)= Br 75

Gross Earnings= Basic salary + Allowances + Over time earnings

1. Seniat : 2080 + 100 + 162.50 =Br 2342.50
2. Petros : 640 + 0 + 48 = Br 688
3. Abdu: 1280 + 0 +96 = Br 1376
4. Leila : 960 + 50 + 0 = Br 1010
5. Kiros : 480 + 50 + 75 = Br 605

Gross taxable income = earnings x income tax rate x income tax

1. Seniat : Br 2342.50

Earnings	Income tax rate	Income tax
150.00	0	00
500	10	50.00
750	15	112.5
942.5	20	188.5
2342.50		351.00

Pension contribution = 4% x 2080 =Br 83.20

Total deductions = Br 351.00 + Br 83.20 = Br 434.20

Net pay = Br 2342.50 - Br 434.20 =1908.30

2. Petros : Br 688

earnings	Income tax rate	income tax
150.00	0	00
500	10	50.00
38	15	5.70
688		55.70

Pension contribution = 0% x 688 =Br 0

Total deductions = Br 0 + Br 55.70 = Br 55.70

Net pay = Br 688 - Br 434.20 =632.30

3. Abdu : 1376.00

earnings	income tax rate	income tax
150.00	0	00
500	10	50.00
726	15	108.90
1376		158.90

Pension contribution = 4% x 1280.00 =Br 51.20

Credit association pays= 200.00

Total deductions = Br 158.90 + Br 200.00 + 51.20= Br 410.10

Net pay = Br 1376.00 - Br 410.10 =965.90

4. Leila : 1010.00

earnings	Income tax rate	income tax
150.00	0	00
500	10	50.00
360	15	54.00
1010.00		104.00

Pension contribution = 4% x 960.00 =Br 38.40

Total deductions = Br104 +Br38.40 = 142.40

Net pay = Br 1010.00 - Br142.40 =867.60

5. Keros : 555.00 =605-50

earnings	income tax rate	income tax
150.00	0	00
405	10	40.50
555		40.5

Pension contribution = 4% x 480.00 =Br 19.20

Total deductions = Br40.50 +Br19.20= 62.70

Net pay = Br 605.00 – Br62.70 =542.30

Earnings:

Basic salary = 2080 + 640 +1280 +960 =5440.00

Allowances = 100 + 50 +50 = 200.00

Overtime = 162.50 + 48 +96 +75= 381.50

Ground total earning = 5440.00 +200.00 +381.50 = 6021.50

Deductions:

Employee income tax = 40.5 + 104.00 + 158.90 + 55.70 + 351.00 = 710.60

Pension contribution = 83.20 +19.20 +38.40 + 51.20 +0 = 192.00

Others deduction =200 + 0 +0 +0+ 0 +0 =200.00

Total deductions = 1102.60

Net pay totals = 4919.90

Total deductions and net pays = 1102.60 + 4919.90 =6022.50

1. Preparation of payroll sheet: see on the last page of the handout full format of payroll sheet prepared for the above illustration.
2. Recording the payment of salary

Salary expenses ----------6022.50

Employee income tax payable ----------710.60

Pension contribution payable----------192.00

Credit association payable----------200.00

Cash ----------4919.90 (Check no 41, Hidar 30, 1998).

3. Record the payroll tax expenses

ABC Company incurred payroll tax expenses of Br 288 during hidar 1998. This is because the company has to contribute 6% of the basic salary of every permanent employee to the government pension trust fund. Thus the payroll tax expenses is total basic salary of all permanent employees multiply by 6%or (2080 +1280 +960 +480) x6% =Br 288. By the amount of Br 288 the company expense, payroll tax expense and pension contribution payable increase.

Therefore, the following journal entry is made as of

Hidar 30, 1998: Payroll tax expense ----------288

Pension contribution payable----------288

The source document is an inter office memorandum that indicates the incurrence of this expense.

4. Record the payment of deduction from Abdu's earnings to the credit association

Credit association payable----------200.00

Cash ----------200 (Check no 42)

5. Recording withhold tax and payment of payroll taxes to Inland Revenue administration on Tahesase 6, 1998.

Employee income tax payable is Br.710.60 and Pension contribution payable is Br.480 (10% x 4800) 4800= 2080 +1280 +960 +480) which Total Br.1190.60

Note that the total Pension contribution payable is equal to 10% of the basic salary of all permanent employees. That is 4800 x 10% = Br 480 then, the payment is recorded as follows:

Employee income tax payable----------710.60

Pension contribution payable----------480

Cash ----------1190.60

CASE I: The following data were taken from the records of Abrham Company that pays payroll to its employees according to the Ethiopian Payroll System.

IDNO	Name of employees	Basic Salary	Allowance	Overtime Worked	Duration of overtime
001	Abel Tena	Br.2,400	250	30Hours	Upto10:00PM
002	Sarah Chala	3,200	500	20Hours	10:00 to 6:00 AM
003	Nega Girum	1,600	100	10Hours	Weekends
				18Hours	Public holidays

Additional information

- ☞ All employees are expected to render services of 160 hours per month and all of them dis except Sarah Chala who has served only 150 hours
- ☞ All employees are permanent employees except Abel Tena
- ☞ The allowance of Nega Girum is not taxable
- ☞ All employees promised to contribute 10% of their basic salary to the credit association of the company.
- ☞ Pension contribution is according to the new plan.

Required: based on the above information answer the following questions:

a. Determine the gross earnings, total deductions and net pay of all employees and
b. Record the journal entries for payment of net pay to the employees in cash, recognition of payroll tax and payment of withholding and payroll tax liabilities to the concerned authority.

Case II: ABC Agency is a government agency recently organized to rehabilitate state children. It has five employees whose salaries are paid according to the Ethiopian calendar month. The following data relates to the month of Ginbot, 2005.

S.No	Name of employees	Basic salary	Transport allowance	Overtime worked (hrs)	Duration of overtime work
1.	Aregash S.	Br. 2000	Br. 200	10	Up to 10 pm
2.	Paulos C.	Br. 3200	Br. 300	20	Weekly rest day
3.	Mohammed M.	Br. 5300	Br. 100	10	Public holiday

Additional information:

- All employees expected to work 40 hours in a week.
- All employees are permanent workers except Mohammed.
- Paulos agreed to contribute Br. 300 per month as a saving in the credit association of the agency.
- Pension contribution is according to the new plan

REQUIRED: based on the above information answer the following questions:

1. Prepare payroll register sheet for the agency for the month of Ginbot, 2005.
2. Record the necessary journal entry Related to payment of salaries and related liabilities.

ABC COMPANY

PAYROL SHEET

FOR THE MONTH ENDED HIDAR 30, 1998

Employee ID	Name of the employee	Earnings			Gross Earnings	Deductions		
		Basic salary	allowance	Overtime Income		EIT	Pension	Other
01	Senayit Bahiru	2080	100	162.5	2342.50	351.00	83.20	-
02	Petros Chala	640	------	48	688.00	55.70	-	-
03	Abdu Kedir	1280	------	96	1376.00	158.90	51.20	200.00
04	Leila Jemal	960	50	-	1010.00	104.00	38.40	-
05	Kiros wolde	480	50	75	605.00	40.5	19.20	-
Grand Total		6021.50	200.00	381.50	6021.50	710.60	192.00	200.00

Prepared By:_____ Approved By: _____

Checked By: _____ Authorized By: _____

CHAPTER FOUR
ACCOUNTING FOR PARTNERSHIPS

Chapter Objectives:

The chapter aims at discussing the concepts and accounting treatments for partnership form of business organization such as characteristics, advantages/disadvantages, recording initial investments, computing each partner's share of income or losses, and also, the accounting implications of partnership dissolution and liquidation will be described. After studying this chapter you should be able to:

- Define partnership and explain their characteristics.
- Describe the advantages and disadvantages of a partnership
- Describe and illustrate the accounting for forming a partnership and for dividing the net income or loss of a partnership.
- Describe and illustrate the accounting for partner admission and withdrawal.
- Describe and illustrate the accounting for liquidating a partnership.

4.1. Introduction

Dear Student! In Principles of Accounting-I course you have studied the three most dominant forms of business organization: sole proprietorship, partnership, and corporation. For accounting purposes, each form should be viewed as an economic unit separate from its owners, though legally only the corporation is considered separate from its owners. In Principles of Accounting-I course you have also studied the basic accounting principles and practices used in accounting for a sole proprietorship form of business organization. The accounting for corporate form of businesses will be explained in the next chapter. Therefore, the main focus of this chapter is to explain the basics of accounting for partnerships. As will be explained later in this chapter, the same accounting principles that are used in accounting for a sole proprietorship are applied in partnership form of businesses. However, there are accounting practices that are unique to partnerships. These unique accounting features relate to the formation, division of income or loss, dissolution and liquidation of partnership.

4.2. Partnership Form of Organization and Their Characteristics

A partnership is defined as an association of two or more persons who own and manage a company for profit. This association is based on a partnership agreement or contract known as the articles of a partnership.

- The partnership **agreement** should specify the **name, location**, purpose **of the business**, **the capital contributions of each partner, duties of each partner**, **the methods of income and loss division**, admission or withdrawal of partner(s), the rights of each partner upon liquidation (winding up) of a partnership, etc.

- The partnership agreement should be in writing to avoid any misunderstandings about the formation, operation, and liquidation of a partnership.

Characteristics of a Partnership

For the purposes of accounting, partnerships are treated as separate economic entities. Then we explain the principal characteristics of partnerships in the following sections.

A) Voluntary Association

A partnership is a voluntary association of individuals rather than a legal entity in itself. Therefore, a partner is responsible under the law for his or her partner's business actions with in the scope of the partnership. A partner also has unlimited liability for the debts of the partnership. Because of these potential liabilities, an individual must be allowed to choose the people who join the partnership.

B) Limited Life

Because a partnership is formed by the consent of two or more partners, it has a limited life. This means that, anything that ends the contract dissolves the partnership.

A partnership can be dissolved when 1) a new partner is admitted; 2) a partner withdraws, retires, dies or becomes bankrupt. At this point, the remaining partners should sign a new contractual agreement to continue the affairs of the business. In place of the old partnership a new partnership is formed. Thus, a partnership is said to have a limited life.

C) **Unlimited Liability**

Each partner is liable for all the debts of the partnership. When and if the partnership fails to pay its debts, creditors can seize (take) each partner's personal assets to satisfy their claims. Therefore, partnerships creditors' claims are not limited to the assets of the business, but is extends to the personal property of the partners. Each partner, then, could be required by law to pay all the obligations (debts) of the partnership.

Suppose, for example, the liabilities of ABC company (a partnership business) as of a certain date is birr 600,000, however, the total properties (assets) of ABC company could only be sold for birr 450,000. Thus, to settle creditors claims fully, the house or personal assets of the partners may have to be sold.

D) Mutual Agency

Each partner is an agent of the partnership within the scope of the business. This means that partner's act to any contract is binding on the remaining partners as long as it is with in the apparent scope of the business' operations.

For example, a partner in a public accounting firm can bind the partnership through the delivery of accounting services. But this partner cannot bind the partnership to a contract for delivering (or providing) cars because it is out of the scope of the business.

E) Co ownership of partnership property

Once invested, the properties contributed by the partners become the property of the partnership and is owned jointly by all the partners. Upon liquidation of the partnership and distribution of assets, the partner's claim on the assets is measured by the amount of the balance in his/her capital account.

Advantages and Disadvantages of Partnership

Advantages:

A partnership form of business organization has the following advantages:

1. **Easy and inexpensive to form than a corporation.** A partnership is easy to form. It only requires the consent of two or more parties. Two or more competent persons simply agree to be partners in some common business purpose.
2. **Advantageous to raise a large amount of capital and managerial skill (talent) than a sole proprietorship.** Because a partnership is formed by two or more persons, it is possible to raise a large amount of capital and managerial skill than a single owner.
3. **Not subject to separate taxation** as a case in a corporation because each partner reports his/her own share of partnership income and is individually taxed, and
4. **Not required to observe on many restrictive laws unlike a corporation.**

Disadvantages

Partnership forms of business organization have the following disadvantages:

1. **Partners assume unlimited liability**. The liability of the partners is not limited to what they have in the partnership, but it goes to the extent of their personal properties (assets).
2. Disadvantageous if each partner does not exercise his/her good judgment because one partner's act can bind a partnership into a contract.
3. **Limited life.** Partnerships are subject to possible termination due to many uncontrollable circumstances such as the death of a partner.
4. The transfer of ownership from one partner to another person is difficult unless the remaining partners approve of this.

4.3 Recording the Formation of A Partnership

In forming a partnership, the investments of each partner are recorded in separate entries. The assets contributed by a partner are debited to the partnership asset accounts. If any liabilities are assumed by the partnership, the partnership liability accounts are credited. The partner's capital account is credited for the net amount.

Illustration

Dr. Abebe and Dr.Seid decided to form a partnership business, which would provide medical services. They have been in business separately before they form the partnership. The partnership assumed the liabilities of their separate business. The assets were valued and recorded at their current fair market value.

Shown below are the assets contributed and the liabilities assumed by the partnership at their fair market value.

Dr. Abebe		**Dr.** Seid	
Cash	Birr 6.500	Cash	Birr 3,300
Accounts Receivable	8,600	Accounts Receivable	4,300
Supplies	21,000	Supplies	12,000
Medical Equipment	3,000	Medical Equipment	150,000
Accounts Payable	(2,300)	Accounts Payable	(3,200)

The journal entry on January 1, 2010 to record the investment of each partner and the formation of the partnership would be:

2010, Jan.1.	Cash	6,500	
	A/R	8,600	
	Supplies	21,000	
	Medical Equipment	3,000	
	A/p		2,300
	Abebe, Capital		36,800
2010, Jan.1.	Cash	3,300	
	A/R	4,300	
	Supplies	12,000	
	Building	150,000	
	Accounts Payable		3,200
	Seid, Capital		166,400

4.4 Division of Partnership Income and Losses

A partnership's income and losses can be distributed according to whatever method the partners specify in the partnership agreement. The agreement should be specific and clear, to avoid later disputes.

If a partnership agreement does not mention the distribution of income and losses, the law requires that they be shared equally by all partners. Also, if a partnership agreement specifies only the distribution

of income, but is silent as to losses, the law requires that losses be distributed in the same ratio as income.

The Income of a partnership normally has three components:

(1) return to the partners for the use of their capital – called interest on partners' capital,
(2) compensation for direct services the partners have rendered – called partners' salaries, and
(3) Other income for any special characteristics individual partners may bring to the partnership or risks they may take.

The breakdown of total income into its three components helps clarify how much each partner has contributed to the firm.

Income can be shared among the partners in one of the following ways:

1. Net income divided in a stated ratio such as:
    A) equally
    B) agreed upon ratio (other than equally)
    C) ratio based on beginning capital balances
2. Net Income divided by allowing interest on the capital investments, salaries, or both with the remaining net income divided in an agreed ratio.

Example 1

Assume that Dr. Abebe and Dr. Seid partnership had a net income of Birr 60,000

Case 1. Assume that the articles of a partnership provides equal share of Net Income or loss.

- In this case the capital accounts of each partner will be credited for Birr. 30,000

Income Summary----------60,000

Dr. Abebe capital----------30,000

Dr. Seid capital----------30,000

Case 2. Net income is divided in ratio of 3:2 to Dr. Abebe and Dr. Seid respectively.

Income summary----------60,000

Dr. Abebe capital (3/5 X 60,000) ----------36,000

Dr. Seid capital (2/5 X 60,000) ----------24,000

Case 3. Net income is divided in a ratio of partners' capital account balances at the beginning of the fiscal period.

Income summary ---------- 60,000

Dr. Abebe capital $\left[\frac{36800}{203200} \times 60{,}000\right]$ ----------10,860

Dr. Seid capital $\left[\frac{166400}{203200} \times 60{,}000\right]$ ---------- 49,134

- 36800 + 166400 = 203200

2. Net income is divided by allowing 5% interest on their beginning capital balances, a salary of Birr. 5,000 to Dr. Abebe and the remainder is divided equally.

Net Income Division

	Dr. Abebe	Dr. Seid	Total	Income to be Distributed
Net income				Birr, 60,000
Interest (5%)	1,840	8,320	10,160	49,840
Salary	5,000	--	5,000	44,840
Remainder	22,420	22,420	44,840	-- 0 –
Distribution	29,260	30,740	60,000	

Journal entry

Income summary ---------- 60,000

Dr. Abebe capital ---------- 29,260

Dr. Seid capital ---------- 30,740

4.5 Financial Statements for A Partnership

The income statement of a sole proprietorship and that of a partnership are the same. At the end of the period a statement of partners' capital is prepared which summarizes the effect of transactions on the capital account balances of each partner. The statement of owner's equity for Abebe and Seid using assumed data and the income division shown above is illustrated below:

Dr. Abebe and Dr Seid

Statement of partners' Capital

For the year Ended Dec, 31, 2017

	Dr. Abebe	Dr. Seid
Capital Bal. January 1, 2017	Br. 36,800	Br. 166,400
Add: Additional investment	4,200	4,300
Total	Br. 41,000	Br. 170,700
Net income distribution	29,260	30,740
	70,260	201,440
Deduct: Withdrawals during the year	5,000	5,000
Capital Bal. Dec. 31, 2017	Br. 65,260	Br. 196,440

Hence, the balance sheet of a partnership is different from that of a sole proprietorship only in the owner's equity section. In the partnership business since two or more persons owns the business, there are two or more capital accounts whereas for a sole proprietorship there will always be one capital account.

4.6 Dissolution of A Partnership

Dissolution of a partnership occurs whenever there is change in the original association of partners. When a partnership is dissolved, the partners lose their authority to continue the business as a going concern. This does not mean that the business operation necessarily is ended or interrupted, but it does mean – from a legal and accounting standpoint – that the separate entity stops to exist.

Then, the remaining partners can act for the partnership in finishing the affairs of the business or in forming a new partnership that will be a new accounting entity. A partnership is legally dissolved

(terminated) when a new partner is admitted to the partnership or an existing partner withdraws from the partnership is called partnership dissolution.

4.6.1 Admission of a New Partner:

The admission of a new partner dissolves the old partnership because a new association has been formed. Dissolving the old partnership and creating a new one require the consent of all the old partners and the ratification of a new partnership agreement

When a new partner is admitted, a new partnership agreement should be prepared. A **new partner can be admitted into a partnership in one of the following two ways:**

(1) by purchasing ownership right from one or more of the original partners, or
(2) by investing assets in the partnership.

1. Admission by Purchase of Ownership Right

When an individual is admitted to a firm by purchasing ownership right from an old partner, each partner must agree to the change. A journal entry is needed in the partnership to transfer the ownership right purchased from the capital account of the selling partner to the capital account of the new partner. The partnership's assets and liabilities remain unchanged.

Suppose, for example, Sister Helen joins the partnership of Dr. Abebe and Dr. Seid by buying ownership right of Br. 8000 from Dr. Seid. The entry to record the admission of Sister Helen and the transfer of the ownership right from the capital account of Dr. Seid to the capital account of Sister Helen in the partnership books shown below

Journal entry

Dr. Seid ---------- 8,000

Sr. Helen ----------8,000

The price that Sister Helen paid to Dr. Seid can be more or less than Br. 8,000 but that is irrelevant as it wouldn't be reflected in the record (books) of the partnership.

2. Admission by Investing Assets

Assume that instead of purchasing ownership right from the existing partners, Sister Helen invested cash of Br. 80,000 into the partnership. In this case both partnership assets and total owners' equity are increase. The journal entry must record such an investment and the increase in partnership assets.

Consider the following scenarios as an example:

1- Sister Helen receives a 50% ownership right in the partnership. Assume also that Dr. Abebe and Dr. Seid's capital balance were Br. 25,000 and Br. 55,000 respectively. Dr. Abebe and Dr. Seid share income in a ratio of 2:1 respectively.

Journal Entry

Sister Helen's capital account would be credited for Br. 80,000 i.e., (55,000 + 25,000 + 80,000) X ½.

Cash----------80,000

Sister Helen, Capital----------80,000

2- Sister Helen receives a one –fourth ownership right upon admission. Assume everything else as above. In this case Sister Helen's capital account would be credited for birr 40,000 ie, (Birr 25,000 + Birr 80,000) X ¼.

The difference Br. 40,000, (80,000 – 40,000) would be shared between the remaining two partners with the income-sharing ratio.

Journal entry

Cash----------80,000

Helen capital ---------- 40,000

Dr. Abebe capital ---------- 26,667

Dr. Seid capital ---------- 13,333

4.6.2 Retirement or Withdrawal of a Partner

When an existing partner withdraws he/she can sell his/her ownership right or he/she can withdraw assets from the partnership. Both options are considered below:

1. Sale of Ownership Right to the Existing Partner

When ownership right is sold by a withdrawing partner to an existing partner, the entry on the partnership's books transfers the retiring partner's capital balance to the buyer's capital account.

Example:

Dr. Seid withdraws from the partnership because of a disagreement. He sells his Br. 38,333 ownership right to Dr. Abebe.

Journal entry

Dr. Seid, Capital---------- 38,333

Dr. Abebe, Capital ---------- 38,333

The amount paid by Dr. Abebe is not recorded on the partnership books, because the transaction involves no flow of assets to or from the partnership.

4.7 Withdrawal of Assets From the Partnership

When a partner withdraws he/she may be paid above or below the amount shown in his/her capital balances.

Example:

I). ssume Dr. Seid was paid Br. 50,000 cash when he withdraws from the partnership of S, A & H. The capital balances of each partner were as follows as of that date:

Dr. Abebe capital ----------Br. 100,000

Dr. Seid capital ---------- --- 50,000

Sister Helen capital ---------- 35,000

Total Equities Birr 185,000

Journal entry

Dr,Seid, capital ---------- 50,000

Cash ----------50,000

Assume Dr. Seid was paid Br. 56,000 instead of Br. 50,000, the excess amount of Birr 6,000 is charged to the remaining partner's capital accounts based on the income- sharing ratio. (Assume a 3:2:1 income-sharing ratio between Dr Abebe Dr. Seid and Sister Helen respectively).

Journal entry

Dr. Seid capital ----------50,000

Sister Helen capital ---------- 1,500

Dr. Abebe capital ---------- 4,500

Cash ----------56,000

- The Birr 6,000 excess is shared on the basis of a 3:1 ratio, i.e., Dr. Abebe would be charged for 6,000 X c/4 = birr 4500, and Sister Helen would be charged for

  Birr 6000 X ¼= Birr 1500.

4.7 Liquidation of A Partnership

Liquidation of a partnership is the process of ending the business, of selling enough assets to pay the partnership's liabilities and distributing any remaining assets among the partners. Liquidation is a special form of dissolution. When a partnership is liquidated, the business will not continue.

A partnership may be liquidated if:

A. The objectives sought in forming the partnership have been achieved.
B. The time period for which the partnership was formed expires (ends)
C. Newly enacted laws have made the partnerships activities illegal,
D. The partnership becomes bankrupt.

The partnership agreement should indicate the procedures to be followed incase of liquidation. Usually, the books (records) are adjusted and closed, with the income or loss distributed to the partners and the assets are sold. The sale of the assets at the time of liquidation of a partnership is known as ***realization.***

As the assets of the business are sold, any gain or loss should be distributed to the partners according to the income and loss sharing ratio. As cash is realized, it must be applied first to outside creditors. Finally, the remaining cash is distributed to the partners in accordance with the balance of their capital accounts.

Illustration

The partnership of R, S, and T is liquidated on September 1, 2010. The income and loss sharing ratio of the partners is: R 40%, Sultan 35%, and T 25%. After discontinuing the ordinary business operations of their partnership and closing the accounts, the following summary of a trial balance is prepared:

R, S and T

Trial Balance

September 1, 2010

	Debit	Credit
Cash	10,000	
Other assets	90.000	
Liabilities		10,000
R. Capital		30,000
S. Capital		30,000
T. Capital	_____	30,000
Total	100,000	100,000

Based on the information on the trial balance, accounting for liquidation of **R, S**, and **T** partnership will be illustrated using different selling prices for the non cash assets.

Case One: Gain on Realization

Assume that R, S, and T sell all non cash assets for Birr 95,000, realizing a gain of birr 5000, (Birr 95,000 – Birr 90,000). The gain is divided among R, s and T in the income and loss sharing ratio of 40% 35%, and 25% respectively. Then, the liabilities are paid, and the remaining cash is distributed to the partners according to the balances in their capital accounts. The entries to record the steps in the liquidation of a business are as follows:

Cash……95,000

Other assets…….90, 000

Gain on sale of assets…….. 5,000

Entry to record the sale of non cash assets and the recognition of gain on realization

Gain on sale of assets…… 5,000

R Cap. (5,000 X 40%)…… 2.000

S Cap. (5,000 X 35%)……. 1,750

T Cap. (5000 X 25%)……...1,250

To distribute gain on realization

- Liabilities…….10, 000

Cash……..10,000

To record the settlement of partnership liabilities.

After the above entries are posted, the partners' capital accounts shows:

R's Beg Bal. 30,000 + 2,000 = Birr 32,000

S's Beg Bal. 30,000 + 1,750 = Birr 31,750

T's Beg Bal. 30,000 + 1,250 = Birr 31,250

The cash account now shows a balance of Birr 95,000 (10,000 + 95,000 – 10,000). The entry recorded upon distribution of this cash among the partners would, therefore, be

R, capital…… Birr 32,000

S, capital…… Birr 31,750

T, capital…… Birr 31,250

Cash----------95,000

To record the distribution of cash among the partners

Case two: Loss on Realization: No capital Deficiencies

Assume that R, S, and T sell all non cash assets for Birr 70,000, instead of Birr 95,000, incurred a loss of birr 20,000,(Birr 90,000 – Birr 70,000

Journal entry

-Cash ----------70,000

Loss on realization----------20,00

Other Assets----------90,000

To record the sale of the assets

-R capital---------- (40% X 20,000) ----------8,000

S capital---------- (35,000 X 20,000) ----------7,000

T capital ---------- (25% X 20,000) ---------- 5,000

Loss on Realization ---------- 20,000

To distribute the loss on realization

- Liabilities ---------- 10,000

Cash ----------10,000

To record the settlement of partnership liabilities

After the above entries have been posted; the accounts show cash 70,000 R, cap. Birr22, 000 S, capital. Birr 23,000 and T, cap. Birr 25,000. The entry to record the cash distribution to the partners would, therefore, be as follows:

R cap ---------- 22,000

S cap ----------23,000

T cap ---------- 25, 000

Cash ---------- 70,000

Entry to record the distribution of cash to partners

Case three*:* Loss on Realization with Deficiency in one Partner Capital

Assume the non-cash assets of R, S and T partnership are sold for only Birr 10,200, incurring a loss of Birr 79,800,(Birr 90,000 – Birr 10,200). The entries to record the division of loss among the partners and the liquidation to this point are shown below:

-Cash ---------- 10,200

Loss on sale of Assets ---------- 79,800

Other Assets---------- 90,000

To record the sale of assets

-R capital (79800 X 40%) ----------31,920

S capital (79800 X 35%) ---------- 27,930

T capital (79800 X 25%) ---------- 19,950

Loss on sale of Assets ---------- 79,800

To distribute loss on realization

- Liabilities ---------- 10,000

Cash ----------10,000

To record settlement of liabilities

At this stage of the liquidation the capital accounts of the partners have the following balances.

R capital = 30,000 – 31920 = 1,920

S capital = 30,000 – 27930 = 2,070

T capital = 30,000 – 19950 = 10,050

Only Birr 10,200 cash is available (10,000 + 10200 – 10,000) for distribution to S and T while the combined balances of their capital accounts is Birr 12,120. Therefore, additional Birr 1,920, (12120 – 10200) is needed which is the amount owed by R to the partnership.

Therefore, either R will have to pay this amount first and the cash will be distributed to S and T, or S and T will have to share the Birr 1920 loss in their income and loss-sharing ratio of 35:25.

Let’s assume, the loss was distributed since R couldn’t pay the amount immediately.

Journal Entries

S capital (35/60 X 1920) ---------- 1,120.00

T capital (25/60 X 1920) ---------- --800.00

R capital ----------1,920

To charge R's capital deficiency to S and T

S, capital ----------950.00

T, capital ----------9,250.00

Cash ----------10,200

To record the final cash distribution to partners.

The various entries in the liquidation of R, S, and T partnership are summarized in the following statement.

R, S, T partnership

Statement of Partnership Liquidation

For period Sept. 1-15, 2010

	Non cash =	Liabilities +	**Capital**		
Cash +	Asset				
			R (40%)	S (35%	T (25%)
Bal.before realization Birr 10,000	90,000	10,000	30,000	30,000	30,000
Sales of Assets &					
Division of loss +10,200	-90,000	---	-31,920	-27,930	19,950
Bal.after realization 20,000	-0-	10,000	(1920)	2,070	10,050
Payment of Liab. – 10,000	---	-10.000	---	---	---
Bal. After payment					
Of liab. 10,200	-0-	-0-	(1920)	2,070	10,050
Division of deficiency ---	---	---	1920	(1120)	800
Bal. After division of					
Deficiency – 10,200	-0-	-0-	-0-	950	9,250
Dist.of cash 10,000	---	---	---	-950	-9250
Balance -0-	-0-	-0-	-0-	-0-	-0 -

Activity Questions

1. On February 2, 2o10, Dr. Abebe and Dr. Seid made additional investments of cash Birr 4,200 and 4300 respectively. Show the entry to record the investments by the owners.

2. Assume the same agreement as in number "1" above but the net income for the year was Birr. 10,000. Determine the amount to be distributed to each partner and record the distribution in journal entry form.

3. Ali and Chala agreed to form a partnership. Ali contributed Br. 200,000 in cash, and Chala contributed assets with a fair market value of Br. 400,000. The partnership, in its initial year, reported net income of Br. 120,000.

Prepare the journal entry to distribute the first year's income to the partners under each of the following condition.

- Ali and Chala failed to include stated ratio in the partnership agreement.
- Ali and Chala agreed to share income and losses in a 3:2 ratio.
- Ali and Chala agreed to share income and losses in the ratio of their original investments.
- Ali and Chala agreed to share income and losses by allowing 10 percent interest on their original investments and sharing any remainder equally

4. What accounts are debited and credited to record the division of net income at the end of the fiscal period?

_____

_____

5. What accounts are debited and credited to record the division of net loss among the partners' at the end of the fiscal period?

_____

6. Assume the same as above except that sister Helen received ¾ ownership right upon admission as she was thought to bring goodwill to the partnership. Record the admission.

_____

_____

Summary

A partnership is an association of two or more persons to carry on as co-owners of a business for profit. This association is based on a partnership agreement or contract known as the articles of a partnership.

The advantages of partnerships include: easy of formation, possible to raise large amount of capital than a single owner, not subject to separate taxation, and the absence of many restrictive laws unlike a corporation, etc.

Partnerships have also the following disadvantages: unlimited liability, mutual agency, limited life, etc.

In accounting for partners' investment, it is necessary to maintain separate capital and withdrawals accounts for each partner and to divide the income and losses of the company among the partners. When recording the investments of the partners, all non cash assets must be recorded at their fair market value at the time they are transferred to the partnership.

A partnership income and losses can be distributed according to whatever method the partner specifies in the partnership agreement. The agreement should be specific and clear, to avoid later disputes.

At the end of each fiscal period financial statements are prepared for a partnership business. Most of the financial statements of a partnership are the same as that of a sole proprietorship with the exception of the owner's equity section of a balance sheet.

Dissolution of a partnership occurs whenever there is a change in the original association of partners. When a partnership is dissolved, the partners lose their authority to continue the business as a going concern. This does not mean that the business operation necessarily is ended or interrupted, but it does

mean - from a legal and accounting stand point - that the separate entity stops to exist. A partnership is legally dissolved when a new partner is admitted or an existing partner withdraws. The partnership agreement should indicate the procedures to be followed incase of liquidation. Usually, the records are adjusted and closed, with the income or loss distributed to the partners, and the assets are sold. The sale of the assets at the time of liquidation of a partnership is known as realization.

ANSWERS to Activity QUESTIONS

Journal entry

1. Cash----------8,500

Dr. Abebe capital---------- 4,200

Dr. Seid capital---------- 4,300

2 Net income division

Income to be

	Dr. Abebe	Dr. Seid	Total	Distributed
Net income				15,000
Interest (5%)	1,840	8,320	10,160	4,840

CHAPTER FIVE
ACCOUNTING FOR CORPORATIONS

CHAPTER OBJECTIVES

This chapter aims at discussing different issues related to a corporate form of organization such as the characteristics of a corporation, accounting and reporting practical for the issuance of stocks.

After studying this chapter, you will be able to:

- describe the characteristics, advantages and disadvantages of the corporate form of business organization
- Explain the rights of stockholders and the role of corporate directions.
- Differentiate among authorized, issued and outstanding shares.
- Account for the issuance of capital stock
- understand the nature of retained earnings and dividends
- account for treasury stock transactions
- Know how to calculate earnings per share.

5.1. Introduction

Dear Student! Assume that you are planning to start a new business. Would you choose a sole proprietorship, a partnership or a corporation? In principles of accounting 1 and previous chapter of principles of accounting you have studied about the first two forms of business organizations. In this chapter the importance of corporate form of organization will be discussed.

Definition of Corporation

A corporation is a legal entity having an existence separate and distinct from that of its owners. In the eyes of the law there are two persons and a corporation is an ‘artificial person’ having many of its own rights and responsibilities.

Characteristics of Corporation

Among the characteristics of a corporation are:

a) A corporation is a separate legal entity. According to the law a corporate entity may own property in its own name, may enter into contract and responsible for its own debts.
b) A corporation has a legal status in court. According to the law a corporation may sue and be sued as if it were a real person.
c) A corporation has its own charter. A corporation is created by obtaining charter from the state in which the company is to be incorporated.
d) A corporation pays income taxes on its earnings. The income of a corporation is subject to income taxes, which must be paid by the corporation.

Advantages of the Corporate Form of Organization

A corporate entity has many advantages not available in other forms of organization. Among the advantages are the following:

a) ***Continuous existence:*** A corporation has perpetual existence in that its continuous existence is not dissolved by the death on retirements of any of its members.
b) ***No personal liability for owners:*** Since a corporation is a separate legal entity, the creditors of a corporation have a claim against the assets of the corporation, not the personal property of the owners.
c) ***Separation of managements from ownership:*** the owners of a corporation (called stock holders or shareholders) own the corporation but they do not manage it on a daily basis. To administer the affairs of the corporation, president and other officers are hired for it. Thus, individual stockholder has no rights to participate in the management's activity of the corporation unless the stockholder has been hired as a corporate officer.

d) ***Easily transferable ownership shares:*** ownership of a corporation is evidenced by transferable shares of stocks. These shares of stocks may be sold by one investor to another without dissolving or disrupting the business organization.

Disadvantages of Corporate Form of Organization

Some of the disadvantages of the corporation are:

a) ***Double taxation:*** corporate earnings are taxed two times. The earnings are taxed first as a corporate income taxes and again as personal income taxes if the corporation. Distributes its earnings to stockholders.
b) ***Difficulties to control:*** since ownership is usually separated from managements, owners are unable to exercise active control over management actions.
c) ***Greater regulation:*** since a corporation comes into existence according to the law of the state, the law may provide for considerable regulation of the corporation's activities. For example, the withdrawal of funds from a corporation is subjects to certain limits sets by law.

5.2. Formation of a Corporation

A corporation is created by obtaining a corporate charter. The charter is given from the states in which the corporation is to be incorporated. To obtain a corporate charter an application called articles of incorporation are prepared by t he organizers called incorporators and submitted to the state corporations commissioner or other designated officials. These articles of incorporation specify the purpose of the business, its location, the names of the organizers, the classes and numbers of shares of capital stock authorized, and the consideration to be paid in by the organizers for their respective shares. The article of incorporation is approved by the state and charter is issued. Once a charter is obtained a board of directors is elected. The directors in turn hold meetings at which officers of the corporation are appointed.

1 Organization costs

In the process of incorporation, the organizers must pay for necessary costs such as payment of an incorporation fee to the state, payment of fees to attorneys for their services in drawing up the articles of incorporation, payment to promoters and variety of other outlays necessary to bring the corporation

into existence. These costs are charged to an asset account called organization costs. In the balance sheets, organization costs appear under the 'other assets' caption.

2 Rights of Stockholders

The stockholders who are the owners of a corporate entity have the following basic rights:

a) ***The rights to votes:*** the common stockholders have the right to elect the board of directors, and thereby to be represented in the management of the business.
b) ***The rights to participate in the earnings of a corporation:*** Stockholders in corporations may not make withdrawal of company assets. However, the earnings of a profitable corporation may be distributed to stockholders is the form of cash dividend. The payment of a dividend always requires formal authorization by the board of directors.
c) ***The rights to share in the distribution of assets upon liquid action:*** when a corporation ends its existence, the creditors of the corporation must first be paid is full; any remaining assets are dividend among stockholders in proportion to the number of shares owned.
d) ***Pre-emptive rights:*** the current stockholders has the right to purchase the shares of the corporation on a prorate basis when new stocks are offered for sale. This preemptive rights is designed to provide each stockholder the opportunity to maintain a proportional ownership in the corporation.

Authorization and Issuance of Stocks

The state officials approve the articles of incorporation, which specify the number of shares a corporation is authorized to issue. The total number of shares that may be issued is known as ***the authorized shares***. When the corporation receives cash is exchange for stock certificates, which represents the number of shares issued, the shares become ***issued shares***. Shares that are issued and held by the stockholders are called ***outstanding shares***. Sometimes a corporation requires shares from its own shareholders. These shares are called ***treasury stocks***, which reduce the number of outstanding shares.

A corporation may choose not to issue immediately all the authorized shares even though it is customary to have a large number of authorized shares than presently needed. If more capital is needed, the previously authorized shares will be readily available for issue. A corporation can apply to the state for permission to increase the number of authorized shares.

Types of Stocks/Shares

Many corporations issue several classes of capital stock, each providing investors with different rights and opportunities. The basic types of stock issued by every corporation is called ***common stock***. Common stock possessed the traditional rights of ownership such as voting rights, participation residual dividends, and residual claim to assets in the event of liquidation. When any of these rights is modified, the term preferred stock is used. Preferred stock specifies different rights that distinguish it from common stock. Some of the distinctive features for preferred stocks are priority claims on dividends, cumulative dividend rights, priority as to assets is the event of liquid action of a corporation and no voting power.

Stocks according to their nature are classified into ***par value*** and ***no-par stocks***. Par value stocks with a designated dollar amount per share as stated in the corporate charter and printed on the stock certificates. On the other hand, some states allow corporations to issue stocks without designating a par value. Such stocks are called ***no-par stocks***. When no par stocks are issued by a corporation, the entire issuance price is viewed as a legal capital, which is subject to withdrawal. Sometimes some states authorize the issuance of no-par stock with a stated, or assigned, value per share that is established permanently by the corporate directors and is in the laws. Most corporations use a stated value for no par stock.

Issuance of Par-value Stocks

a. Authorization

Authorization of par value stocks, specified in the unit may be recorded as a memo entry in the general journal and in the ledger accounts. Most states require the total number of shares authorized be shown on each stock certificate, in addition to the number of shares represented by that particular stock certificates.

b. Par value stock issued for cash

When stocks are issued to various investors, a stock certificate specifying the number of shares represented is prepared for each investor/or stockholder. When par value stock is issued for cash, the capital stock account is credited with the par value of the shares issued regardless of whether the issuance price is more or less than par. If par value stock is issued for more than par value (at premium), paid in capital in excess of par account is credited for the excess of selling price over par. This paid in capital is excess of par does not represent a profit to the corporation rather it is part of the invested capital. If par value stock is sold by corporation for less than par (at discount), a negative stockholders' equity accounts, Discount on common (or preferred) stock, is debited for the amount of the discount.

For example, assume that 50,000 shares of Br. 2 par value common stock have seen authorized and that 10,000 of these authorized shares are issued at a price of Br. 10 each. The entry would be:

Cash……100.000

Common Stock……..20,000

Paid-in-capital is excess of par…… 80,000

c. Par value stock issued on a subscription basis

During the start-up of a corporation, prospective investors may sign a contract to purchase a specified number of shares on credits with payments due at one or more specified future dates. One reason for this procedure is to attract small investors. Another reason is to appeal to investors who prefer not to invest cash until the corporation is ready to start business operations. A corporation may also sell its capital stock on credit after incorporation.

When stock is subscribed, the company debits stock subscription receivable for the subscription price, credits capital stock subscribed for the par value of the subscribed shares, and credits paid in capital in excess of the subscription price over par value. Later, as cash is collected, the entry is a debit to cash and a credit to stock subscription receivable. When the entire subscription price is collected, the stock certificates are issued for the subscribers. The issuance of stock is recorded by debiting capital stock

subscribed and crediting capital stock. The following illustration demonstrates the accounting procedures for stock subscriptions.

Assume that 120,000 shares of RAM corporation common stock, par br. 10, are subscribed for at Br. 12 by Jhon . The total is payable in three installments. The following entries are processed by RAM Corporation.

Common stock subscription Receivable	1,440,000	
Common stock subscribed		1,200,000
Paid-in-capital in excess of par		240,000
To record receipt of subscription for 120,000 shares		
Cash	480,000	
Common stock subscription receivable		480,000
To record receipt of 1st payment		
Cash	480,000	
Common stock subscription Receivable		480,000
To record receipt of final payment		
Cash	480,000	
Common stock subscription Receivable		480,000
To record receipt of final payment		
Common stock subscribed	1,200,000	
Common stock		1,200,000

To record issuance of stock

d. Non Cash Issuance of Capital Stock

Corporations sometimes issue capital stock for non-cash assets such as in exchange for real estate. The current markets value of the stock issued or the non-cash consideration received, whichever is must reliable, determinable, is used to record the transaction. If the market value of either capital stock issued or the no cash items are not reliable, the value are established by the corporation's board of directors.

e. Issuance of No-par Stock

Some states allow corporations to issue stock without designating a par or stated value. When this no par stock is issued, the entire issuance price is credited to the capital stock account and is viewed as legal capital not subject to withdrawal.

Accounting for Retained Earnings and Dividends

1 Nature of Retained Earnings

Capital provided to a corporation by stockholders in exchange for shares of either preferred or common stock is called ***paid in capital*** or ***contributed capital***. The second major type of stockholders' equity is a retained earnings. The amount of the retained earnings account at any balance sheet date represents the accumulated earnings (net income) of the company since the date of incorporation, less any losses and all dividends distributed to stockholders.

2 Natures of Dividends

A dividend is a distribution of earnings to stockholders is the form of assets or shares of the issuing company's stock. Type of dividends includes the following.

a) Cash dividend

Cash disbursed

Property Dividend

Non cash assets disbursed

b) Stock Dividend

Corporations own stock disbursed

c) Liquidating Dividend

Return of contributed capital

d) Scrip Dividend

Creation of a liability by declaring a dividend to be paid at a specific future date

3 Relevant dividend dates

Prior to payment, dividends must be declared by the board of directors of the corporation. The important dividend dates are:

a) ***Date of Declaration:*** on this date, the corporation's board of directors formally approves and announces the dividend to be distributed. The declaration is recorded on this date as a debit to dividends and a credit to dividends payable.
b) ***Date of payment:*** this date is determined by the board of directors and is usually stated is declaration. At the date of payment the liability recorded at the date of declaration is debited and the appropriate asset account is credited.

4 Dividend and Characteristics of preferred stock

A corporation with both preferred stock and common stock may declare dividends on the common only after it meets the requirements of the stated dividend on the preferred. The preferred dividend may be stated in monetary terms or as a percent of par.

i. Participating and non-participating preferred stock

A participating preferred stock receives a minimum dividend but also receives higher dividend when the company pays substantial dividends on common shares. The preferred stockholders' right may be to receive dividend only a stated amounts. Such stock is said to be ***nonparticipating.***

To illustrated, assume the following information

- Common stock issued 4,000
- Preferred stock issued 2,000
- Dividend per share of preferred stock Br. 10

The corporation reported net income of Br. 150,000 for the third year and the BOD declared both of the net income as dividend. If the preferred stock issued by the corporation is participating, the preferred stockholders will receive. Br. 30,000 (Br. 20,000 + Br. 10,000), and the common stockholders will receive Br. 60,000 (Br. 40,000 + Br. 20,000).

ii. Cumulative and Non-cumulative preferred stock

Cumulative preferred means that if the company fails to pay a preferred dividend, its obligation accumulates and all omitted dividends must be paid in the future before any common dividends are paid. The cumulative preferred stockholders would receive all accumulated unpaid dividends (called dividend in arrears) before the holders of common shares receive anything. Preferred stock not having this cumulative rights is called no cumulative.

For example, assume the following information

- Cumulative preferred, 10% of Br. 100 par (10,000 shares issued)
- Common stock of Br. 90 par (40,000 shares issued)
- The Board of Directors (BOD) did not declare dividend in year 2
- Year 3 dividend declared by the BOD amounts to Br. 320,000.
- Year 1 dividend declared and distributed amounts to Br. 200,000.

If the preferred stock is cumulative, the preferred stockholders will receive Br. 200,000 (Br. 100,000 + Br. 100,000), and the common stock holders will receive Br. 120,000 (Br. 320,000 – Br. 200,000).

Accounting for Treasury Stocks

Treasury stock is a corporation's own stock (preferred or common) that has been issued and required by the issuing corporation. A corporation may also accept shares of its own stock in payment of a debits owed by a stockholder or as a donation from a stockholder.

Treasury stock does not reduce the number of shares issued, but does reduce the number of outstanding shares. The purchase of treasury stock decreases both assets and stockholders' equity. Moreover, treasury stock does not carry voting, dividend, preemptive, or liquidating rights and is not assets.

1 Reasons to acquire Treasury Stocks

In general treasury steps are to acquire for the following reasons to:

a) support (increase) the markets price of the stock
b) I increase earnings par share by reducing the number of shares outstanding.
c) reduce dividend payment payments by reducing the number of shares outstanding.
d) provide shares for reassurance to employees as a bonus
e) use the share acquired for stock dividend
f) reissue with a higher price

2 Recording and reporting Treasury stock Transactions

There are several methods of accounting for the purchase and the resale of treasure stock. A commonly used method is the cost basis. When the stock is purchased by the corporation, treasury stock account is debited for the price paid for it. The par and the price at which the stock was originally issued are ignored. When the stock is resold, treasury stock is credited at the price paid for it, and the difference between the price paid and the selling price is debited or credited to an account entitled paid in capital from sale of treasury stock.

To illustrate the cost method, assume that ABC Corporation had 50,000 shares of Br. 10 par common stock outstanding at the beginning of the current year. The company purchased 500 shares for cash and received 500 shares in settlement of a debt from stockholders. The markets price of stocks was Br. 30/share. The following entry is required involving the transactions.

Treasury stock	30,000	
Cash		15,000
Notes Receivable		15,000

If the company sells 600 shares of the treasury stock for Br. 31 each, the entry would be:

Cash	18,600	
Treasury stock		18,000
Paid in capital from sale of		600
Treasury stock		

Paid in capital from sale of treasury stock is reported in the paid in capital section of the balance sheet. Treasury stock is deducted from the total of the paid in capital and Retained earnings.

Equity per Share

The amount appearing on the balance sheet as total stockholders' equity can be stated in terms of the equity per share. When there is only one class of stock, the equity per share is determined by dividing total stockholders' equity by the number of shares outstanding. For a corporation with both preferred and common stock, it is necessary first to allocate the total equity between the two classes. To illustrate, consider the following statements of stockholders' equity at December 31, 2017.

- 9 to preferred stock, Br. 50 par value, authorized 20,000 shares, issued and		
Outstanding 12,000 share		Br. 600,000
- Common stock, no par, stated value Br. 2 per share,		
authorized 500,000 shares, issued 400,000 shares of which 25,000		
shares are held is the treasury		800,000
- Paid in capital is excess of per		
-Preferred	Br. 50,000	
-Common	1,000,000	
	1,050,000	
- Retained earnings		2,000,000
Subtotal		Br. 4,450,000
- Less cost of 25,000shares of common stock		
Reacquired and held in treasury		250,000
- Total stockholders' equity		Br. 4,200,000

If the preferred stock is entitled to receive Br. 105 per share upon liquidation and if there is no preferred dividend in arrears, the computation of earnings per share are as follows:

Preferred EPS = Equity allocated to preferred stock

Number of o/s shares of preferred stock

= 105 X 12,000

12,000

= Br. 105/share

Common EPS = Equity allocated to common stock

Number of o/s shares of common stock

= 2,940,000

375,000

= Br. 7.84 /share

Activity Questions

Activity -1

1. When a business is organized as a corporation:

    a) stockholders are liable for the debts of the business
    b) stockholders do not have to pay personal income taxes on dividend received.
    c) each stockholder has the rights to make managerial decision.
    d) owners cannot withdraw assets from the business at will

2. Explain the meaning of the term double taxation at it applies to corporate profits.

Activity –2

1. State the classification (assets, liability, stockholders' equity, revenue or expense) of each of the following accounts

    a) subscription receivable
    b) organization costs
    c) paid in capital is excess of par value
    d) retained earnings
    e) preferred stock

2. If a corporation has outstanding 1,000 shares of Br. 9 cumulative preferred stock of Br. 100 par and dividends have been passed for the preceding three years, what is their amount of preferred dividends that must be declared is the current year before a dividend can be declared on common stock?

    a) Br. 9,000 c) Br. 36,000

    b) Br. 27,000 d) None

Activity -3

1. A corporation reacquired 1,000 shares of its own Br. 50 par common stock for Br. 75,000 recording it at costs. What effects does it has on stockholders' equity?
2. If the Retained Earnings account has a debit balance, how is it presented in the balance sheet and what is it called?

Summary

- A Corporation has the following most important characteristics:
- Separate legal existence, limited liability, and transferable units of stocks.

- The primary advantages of a corporation are no personal liability of stockholders for the debts of the business, the transferability of ownership shares, continuity of existence and ability to hire professional managements.

- Stockholders in a corporation normally have the rights to elect the board of directors, to share in dividends declared by the directors, to share is the distribution of assets if the corporation is liquidated, and to subscribe to additional shares if the corporation decides to increases the number of shares outstanding.
- Common stock represents the true residual ownership of a corporation. These share have voting rights and cannot be called. Preferred stock has preference over common stock with respects to dividends and to distributions in the events of liquidation.
- When capital stock is issued, appropriate asset accounts are debited for the market price of stock. A capital stock account is credited for the par value of the issued shares. The difference between the market value received and the par value of the issued shares is credited or debited to additional paid in capital accounts.

- The stockholders; equity sections are classified into two: paid-in-capital and retained earnings.
- Any treasury stock held at the end of an accounting period is deducted from the total of the paid-in-capital and retained earnings of the corporation.
- To determine the equity per share, the equity allocated to each class is divided by the number of shares outstanding of the respective class.

Answer to Activity Exercises

ACTIVITY - 1

1. D
2. According to double taxation concept corporate income is taxed two times; when earned to the corporation and then again taxed to the stockholders when distributed as dividends.

ACTIVITY - 2

1. a) Assets

   b) Assets

   c) Stockholders' equity

   d) Stockholders' equity

   e) Stockholders' equity

2. C

ACTIVITY - 3

1. The stockholders'eq2uity decrease for Br. 375,00
2. The debit balance is deducted from paid in capital and is called defects.
3. EPS = $\frac{\text{Total stockholders' equity}}{\text{Number of shares outstanding}}$