
UNIT 1. INVENTORIES

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1.0 AIMS AND OBJECTIVES

This unit aims at discussing the meaning, importance and effects of inventories. It also discusses the inventory systems and determining actual quantities in inventories. After studying this unit, you will be able to:

- explain the meaning of inventories
- describe the effect of inventory on the financial statements of the current period and the following period
- identify and describe the two principal inventory systems

- identify the procedures for determining the actual quantities in inventory.

1.1 INTRODUCTION

In the last section of Principles of Accounting I, you have learned about the principles and practices of accounting for receivables – one of the current asset items in the balance sheet of a retail business. In this unit you will learn and discuss the concepts in accounting for inventories.

Inventories are asset items held for sale in the ordinary course of business or goods that will be used or consumed in the production of goods to be sold. They are mainly divided into two major:

- Inventories of merchandising businesses
 - Inventories of manufacturing businesses
- i. Inventories of merchandising businesses are merchandise purchased for resale in the normal course of business. These types of inventories are called merchandise inventories.
 - ii. Inventories of manufacturing businesses manufacturing businesses are businesses that produce physical output. They normally have three types of inventories. These are:
 - Raw material inventory
 - Work in process inventory
 - Finished goods inventory

1. **Raw material inventory** -is the cost assigned to goods and materials on hand but not yet placed into production. Raw materials include the wood to make a chair or other office furniture's, the steel to make a car etc.

2. **Work in process inventory**- is the cost of raw material on which production has been started but not completed, plus the direct labor cost applied specifically to this material and allocated manufacturing overhead costs.

3. **Finished goods inventory**- is the cost identified with the completed but unsold units on hand at the end of each period.

In this unit only the determination of the inventory of merchandise purchased for resale commonly called **merchandise inventory** will be discussed.

1.2 IMPORTANCE OF INVENTORIES

Merchandise purchased and sold is the most active elements in merchandising business, i.e. in wholesale and retail type of businesses. This is due to the following reasons:

- 1.The sale of merchandise is the principal source of revenue for them.
- 2.The cost of merchandise sold is the largest deductions from sales.
- 3.Inventories (ending inventories) are the largest of the current assets or those firms.

Because of the above reasons inventories, have effects on the current and the following period's financial statements. If inventories are misstated (understated or overstated), the financial statements will be distorted.

Check Your Progress Exercise -1

1. List the four types of inventories

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2.Why do we consider inventories the most active elements merchandising businesses?

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1.3 THE EFFECTS OF INVENTORIES ON CURRENT AND FOLLOWING PERIOD'S FINANCIAL STATEMENTS.

1.3.1 Effect of ending inventory on current period's financial statements

Ending inventory is the cost of merchandise on hand at the end of accounting period. Let us see its effect on current period's financial statements.

Income statement

a.
$$\text{Cost of goods (merchandise) sold} = \text{Beginning inventory} + \text{Net purchase} - \text{Ending inventory}$$

As you see, ending inventory is a deduction in calculation cost of merchandise sold. So, it has an indirect (negative) relationship to cost of merchandise sold, i.e. if ending inventory is understated, the cost of merchandise sold will be overstated, and if ending inventory is overstated, the cost of merchandise sold will be understated.

b.
$$\text{Gross Profit} = \text{Net sales} - \text{Cost of merchandise sold}$$

Here, the cost of merchandise sold had indirect relationship to gross profit. So, the effect of ending inventory on gross profit is the opposite of the effect on cost of merchandise sold. That is, if ending inventory is understated, the gross profit will be understated and if ending inventory is overstated, the gross profit will be overstated. This is a direct (positive) relationship.

c.
$$\text{Operating income} = \text{Gross Profit} - \text{Operating Expenses}$$

Gross profit and operating income have direct relationships. Thus, the effect of ending inventory on net income is the same as its effect on gross profit, i.e. direct (positive) effect (relationship).

Balance Sheet

1. **Current assets** - Ending inventory is part of current assets, even the largest. So, it has a direct (positive) relationship to current assets. If ending inventory balance is understated (overstated), the total current assets will be understated (overstated). Since current assets are part of total assets, ending inventory has direct relationship to total assets.
2. **Liabilities**- No effect on liabilities. Inventory misstatement has no effect on liabilities.
3. **Owners' equity** - The net income will be transferred to the owners' equity at the end of accounting period. Closing income summary account does this. So, net income has direct relationship with owners' equity at the end of accounting period. The effect-ending inventory on owners' equity is the same as its effect on net income, i.e. if ending inventory is understated (Overstated), the owners' equity will be understated (Overstated).

1.3.2 Effects of beginning inventory on current period's financial statements

Beginning inventory is inventory balance that was left on hand in the previous period and transferred to the current period. Its effect is summarized below:

Income Statement

1. Cost of merchandise sold= Beginning inventory + Net Purchases - Ending inventory

As you see, beginning inventory is an addition in determining cost of goods sold. It has direct effect on cost of merchandise sold. That is, if the beginning inventory is understated (Overstated), the cost of merchandise sold will be understated (Overstated)

2. *Gross Profit = Net Sales - Cost of merchandise sold*

The effect of beginning inventory on gross profit is the opposite of the effect on cost of merchandise sold, i.e. indirect (negative) relationship. If the beginning inventory is understated, the gross profit will be overstated and if it is overstated, the gross profit will be understated.

3. *Net income = Gross Profit - Operating expenses*

The effect of beginning inventory on net income is the same as its effect on gross profit.

Balance sheet

1. ***Current assets*** – The inventory included in current assets is the ending inventory. So, beginning inventory has no effect on current assets.
2. ***Owners' equity***– If the effect comes from the previous year, the beginning inventory will not have an effect on ending owners' equity since the positive or negative effect of the previous year will be netted off by the negative or positive effect of the current year. But if the error is made in the current period, it will have indirect effect on ending owners' equity.

1.3.3 Effect of ending inventory on the following period's financial statements

The ending inventory of the current period will become the beginning inventory for the following period. So, it will have the same effect as beginning inventory of the current period. Let us summarize it.

Income statement of the following period

Cost of merchandise sold	direct relationship
Gross profit▶	indirect relationship

Net income → indirect relationship

Balance sheet of the following period

The ending inventory of the current period will not have an effect on the following period's balance sheet items.

Illustration - 1

The following amounts were reported in Belay Company's financial statements for three consecutive fiscal year ended December 31.

	2000	2001	2002
a) Cost of merchandise sold	Br. 130,000	Br. 154,000	Br. 140,000
b) Net income	40,000	50,000	
	42,000		
c) Total Current assets	210,000	230,000	
	200,000		
d) Owner's equity	234,000		260,000
	224,000		

In making the physical counts of inventory, the following errors were made:

- Inventory on December 31, 2000, under stated by Br. 12,000
- Inventory on December 31, 2001, overstated by Br. 6000

Required:

Determine the correct amount of the items listed above.

Solution

	2000	2001	2002
a) <i>Cost of merchandise sold:</i>			
Reported	Br. 130,000	Br. 154,000	Br. 140,000

Adjustment of				
2000 error	(12,000)			12,000
—				
2001 error	—		<u>6,000</u>	
<u>(6,000)</u>				
Corrected	Br. <u>118,000</u>	Br. <u>172,000</u>		Br.
<u>136,000</u>				

b) Net income:

Reported	Br. 40,000	Br. 50,000		Br.
42,000				
Adjustment of				
2000 error	12,000	(12,000)		
—				
2001 error	—	<u>(6,000)</u>		
<u>6,000</u>				
Corrected	Br. <u>52,000</u>	Br. <u>32,000</u>		Br.
<u>48,000</u>				

c) Total current assets:

Reported	Br. 210,000	Br. 230,000		Br.
200,000				
Adjustment of				
2000 error	12,000	—		
—				
2001 error	—	<u>(6,000)</u>		
—				
Corrected	Br. <u>222,000</u>	Br. <u>224,000</u>		Br.
<u>200,000</u>				

d) Owner's equity:

Reported	Br. 234,000	Br. 260,000		Br.
224,000				

	Adjustment of			
	2000 error	12,000		—
—				
	2001 error	—	(6,000)	
—				
	Corrected	Br. <u>246,000</u>	Br. <u>254,000</u>	Br.
<u>224,000</u>				

Check Your Progress Exercise -2

1. Why does an understated ending inventory understate net income for the period by the same amount?

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2. Why does an error in ending inventory affect two accounting periods?

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1.4 INVENTORY SYSTEMS: PERIODIC VS PERPETUAL

There are two principal systems of inventory accounting periodic and perpetual.

1.4.1 Periodic inventory system

Under this system there is no continuous record of merchandise inventory account. The inventory balance remains the same through out the accounting period, i.e. the beginning inventory balance. This is because when goods are purchased, they are debited to the purchases account rather than merchandise inventory account.

The revenue from sales is recorded each time a sale is made. No entry is made for the cost of goods sold. So, physical inventory must be taken periodically to determine the cost of inventory on hand and goods sold.

The periodic inventory system is less costly to maintain than the perpetual inventory system, but it gives management less information about the current status of merchandise.

This system is often used by retail enterprises that sell many kinds of low unit cost merchandise such as groceries, drugstores, hardware etc.

The journal entries to be prepared are:

1. *At the time of purchase of merchandise:*

Purchases	XX		}	
Accounts payable or cash				XX
2. *At the time of sale of merchandise:*

Accounts receivable or cash	XX		}	
price				at retail
Sales		XX		
3. *To record purchase returns and allowance:*

Accounts payable or cash	XX	
Purchase returns and allowance		XX
4. *To record adjusting entry or closing entry for merchandise inventory:*

Income Summary	XX	
Merchandise inventory (beginning)		XX

To close beginning inventory

Merchandise inventory (ending)	XX	
Income summary		XX

To record ending inventory

1.4.2 Perpetual inventory system

Under this system the accounting record continuously disclose the amount of inventory. So, the inventory balance will not remain the same in the accounting period. All increases are debited to merchandise inventory account and all decreases are credited to the same account.

There are no purchases and purchase returns and allowances accounts in this system. At the time of sale, the cost of goods sold is recorded in addition to Journal entry for the sale. So, we can determine the cost of inventory as well as goods sold from the accounting record. No need of physical counting to determine their costs.

Companies that sell items of high unit value, such as appliances or automobiles, tended to use the perpetual inventory system.

Given the number and diversity of items contained in the merchandise inventory of most businesses, the perpetual inventory system is usually more effective for keeping track of quantities and ensuring optimal customer service. Management must choose the system or combination of systems that is best for achieving the company's goal.

Journal entries to be prepared are:

1. At the time of purchase of merchandise

Merchandise inventory	XX	} at cost
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Accounts payable/cash	XX
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To record cost of goods sold

2. At the time of sale of merchandise

Accounts receivable or cash	XX	} at retail
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price

Sales	XX
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To record cost of goods sold

To record the sales

}

Cost of goods sold	XX	
Merchandise inventory	XX	at cost

To record the cost of merchandise sold

3. *To record purchase returns and allowances*

Accounts payable or cash	XX
Merchandise inventory	XX

4. No adjusting entry or closing entry for merchandise inventory is needed at the end of each accounting period.

Illustration - 2

In its beginning inventory on Jan 1, 2002, NINI Company had 120 units of merchandise that cost Br. 8 Per unit. The following transactions were completed during 2002.

February 5 Purchased on credit 150 units of merchandise at Br. 10 per unit.

9 Returned 20 defective units from February 5 purchases to the supplier.

June 15 Purchased for cash 230 units of merchandise at Br 9 per unit.

September 6 Sold 220 units of merchandise for cash at a price of Br. 15 per unit. These

 goods are: 120 units from the beginning inventory and 100 units for February

 Purchases.

December 31 260 units are left on hand, 30 units from February 5 purchases.

Required: Prepare general journal entries for NINI Company to record the above transactions and adjusting or closing entry for merchandise inventory on December 31,

- a) Periodic inventory system
- b) Perpetual inventory system

Solution

a)	February 5	Purchases (150 x Br.10)	1,500
		Account payable	1,500
	9	Accounts payable (20 x Br. 10)	200
		Purchase returns and allowances	
		200	
	June 15	Purchases (230 x Br. 9)	2,070
		Cash	2,070
	September 6	Cash (220 x Br. 15)	
		3,300	
		Sales	3,300
	December 31	To record or close the merchandise inventory account	
		Income summary (120 x Br. 8)	960
		Merchandise inventory (beginning)	
		960	
		_To close the beginning inventory	
		Merchandise inventor (ending)	2,370
		Income summary [(30 x Br. 10) + (230 x Br. 9)]	
		2,370	
		_ To record the ending merchandise inventory	
b)	February 5	Merchandise inventory	1,500
		Accounts payable	
		1,500	
	9	Accounts payable	200

	Merchandise inventory	
200		
June 15	Merchandise inventory	
2,070		
	Cash	2,070
September 6	i) To record the sales	
	Cash	3,300
	Sales	
3,300		
	ii) To record cost of merchandise sold	
	= (120 x Br. 8) + (100 x Br. 10)	
	= Br. 960 + Br. 1,000 = Br. 1,960	
	Cost of merchandise sold	1,960
	Merchandise inventory	1,960
December 31	No entry is needed to record or close merchandise inventory account.	

1.5 DETERMINING ACTUAL QUANTITIES IN THE INVENTORY

The physical count of inventory is needed under both inventory systems. Under periodic inventory system, it is needed to determine the cost of inventory and goods sold.

The inventory account under a perpetual inventory systems is always up to date. Yet events can occur where the inventory account balance is different from inventory on hand. such events include theft,, loss, damage, and errors. The physical count (some times called “taking an inventory”) is used to adjust the inventory ac count balance to the actual inventory on hand.

We determine a birr (dollar) amount for physical count of inventory on hand at the end of a period by:

- (1) Counting the units of each product on hand
- (2) Multiplying the count for each product by its cost per unit

(3) Adding the cost for all products

At the time of taking an inventory, all the merchandise owned by the business on the inventory date, and only such merchandise, should be included in the inventory. The merchandise owned by the business may not necessarily be in the warehouse. They may be in transit.

The legal title to the merchandise in transit on the inventory date is known by examining purchase and sales invoices of the last few days of the current accounting period and the first few days of the following accounting period. This legal title depends on shipping terms (agreements).

There are two main types of shipping terms. FOB shipping point and FOB destination

- (1) **FOB shipping point**- the ownership title passes too the buyer when the goods are shipped (when the goods are loaded on the means of transportation, i.e. at the seller's point). The purchaser is responsible for freight charges.
- (2) **FOB destination** - the title passes to the buyer when the goods arrive at their destination, i.e. at the buyer's point.

So, in general, goods in transit purchased on FOB shipping point terms are included in the inventories of the buyer and excluded from the inventories of the seller. And goods in transit purchased on FOB destination terms are included in the inventories of the seller and excluded from the inventories of the buyer.

There are also a problem with goods on consignment at the time of taking and inventory. Goods on consignment to another party (agent) called the consignee. A Consignee is to sell the goods for the owner usually on

commission are included in the consignor's inventories and excluded from the consignee's inventories.

Check Your Progress Exercise -3

ABC Company, found in Addis, purchased goods from XYZ Company, found in Mekele, on FOB shipping point terms.

1. Who will cover transportation charges? Why?

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2. Assume these goods are in transit at the end of accounting period. In which company's inventories do we include these goods?

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1.6 SUMMARY

Inventories are goods held for sale in the ordinary course of business or goods that will be used or consumed in the production of goods to be sold. They are included in the current asset section of the balance sheet.

Goods purchased and sold are the most active elements in the merchandising businesses due to many reasons. Because of this reason, they have significant effects on the current and the following period's financial statements.

There are two principal systems of inventory accounting periodic and perpetual. In the periodic system, only the revenue from sales is recorded at the time the sale is made no entry is made until the end of the period to record the merchandise inventory and the cost of goods sold. In the perpetual inventory system, sales and cost of merchandise sold are

recorded at the time each sale is made. In this way, the accounting records continuously disclose the amount of inventory on hand.

The first step in “taking an inventory” is to count the merchandise on hand. To this count is added merchandise in transit that is owned. Therefore, it is normally necessary to examine purchases and sales invoices of the last few days of the accounting period and the first few days of the following period to determine who has legal title to merchandise in transit on the inventory date.

1.7 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress Exercise 1

1. - Merchandise inventory
 - Raw material inventory
 - Work in process inventory
 - Finished goods inventory
2. - It is due to many reasons including the following
 - The sale of merchandise is the main source of revenue
 - The major deduction from sales is cost of merchandise sold
 - Inventories are the largest of the current assets.

Check Your Progress Exercise 2

1. Ending inventory has direct effect on net income of the current period. So, if ending inventory is understated, the net income will be understated by the same amount. In other way round, if ending inventory is understated, cost of goods sold will be overstated, resulting in an understatement of gross margin and net income.
2. Because the ending inventory for the current period will become beginning inventory for the following period.

Check Your Progress Exercise 3

1. The buyer (ABC Company). The title to the goods is passed to ABC Company at the seller's point. So, while in transit, they are the properties of ABC company.
2. In ABC Company

1.8 MODEL EXAMINATION QUESTIONS

A. Short answer questions

1. Define inventories
2. From the two inventory systems, which method is better considering internal controls?
3. If ending inventory is misstated, it will not have an effect in the owners' equity of the following period. Why?

B. Workout questions

2. Abera Company reported annual net income as follows

2000	Br. 151,400
2001	152,400
2002	128,120

Analysis of its inventories shows that the following incorrect inventory amounts were used (the correct amounts are also shown)

	<i>Incorrect inventory</i>	<i>Correct</i>
<i>inventory</i>		
<i>Amount</i>	<i>Amount</i>	
December 31,2001	Br. 24,000	Br.
28,000		
December 31,2001	27,000	
23,000		

Compute the annual net income for each of the three years assuming the correct inventories had been used.

3. Condensed income statement for FANTU Supermarket for two years are shown below:

	19 x 4	19
	x 3	
Sales (net)	Br. 126,000	Br. 105,000
Cost of Goods Sold	<u>75,000</u>	
	<u>54,000</u>	
Gross Margin	Br. 51,000	Br.
	51,000	
Operating Expenses	<u>30,000</u>	-
	<u>30,000</u>	
Net Income	<u>Br. 21,000</u>	<u>Br. 21,000</u>

After the end of 19 x 4 it was discovered that an error had resulted in a Br. 9000 understatement of 19 x 3 ending inventory.

Required: Compute

- the corrected net income for 19 x 3
- the corrected cost of goods sold for 19 x 4
- the corrected net income for 19 x 4
- what effect will the error have on net income and ending owner's equity for 19 x 5?

4. MAMO Co. engaged in the following transactions in Megabit 1995:

- Megabit 1- Sold merchandise to Belew Co. on credit, terms n/30, FOB shipping point, Br. 2100 (cost br. 1260)
- 3 - Purchased merchandise on credit from Semi Co., terms n/30, FOB shipping point, Br. 3800
- 5 - Paid Express Transit for freight charges on merchandise received, Br. 290

- 6 - Purchased store supplies on credit from Hadiya Trading, terms n/20, Br. 636
- 8 - Purchase merchandise on credit from Semi Co., terms n/30, FOB shipping point, Br. 3600, which includes Br. 200 freight costs paid by Semi Co.
- 12 - Returned some of the merchandise received on Megabit 3 for credit, Br. 600

Refer to the following exercise in order to answer questions a - f.

The following information is related to the business for three consecutive fiscal years.

	19 x 3	19 x 2
19 x 1		
Net sales	Br. 430,000	Br. 425,000
400,000		Br.
Cost of goods sold	240,000	243,000
240,000		
Gross Profit	189,200	182,000
160,000		
Operating Expenses	96,800	92,400
86,500		

Assume that you have found everything in order except for the following:

- i. The ending inventory was understated by Br. 15,000 and Br. 3000 at the end of 19 x 1 and 19 x 2 respectively.
- ii. The ending inventory was overstated by Br. 20,200 at the end of 19 x 3

The business enterprise uses the periodic inventory system and the above errors had not been brought to attention prior to your investigation.

- a. What was the correct amount of cost of goods sold for 19 x 1?

- b. What was the correct amount of cost of goods sold for 19 x 2?
- c. What was the correct amount of cost of goods sold for 19 x 3?
- d. What was the correct amount of Net income for 19 x 2?
- e. What was the correct amount of Net income for 19 x 3?
- f. Compute the correct gross profit percentage for 19 x 1?

Megabit 15 – Sold merchandise on credit to MERON Trading, terms n/30, FOB shipping point, Br. 1200 (cost Br. 720)

16 – Returned some of the store supplies purchased in Megabit 6 for credit, Br. 200

17 – Sold merchandise for cash Br. 1000 (cost, Br. 600)

18 – Accepted for full credit a return from Belew Company and returned merchandised to inventory, Br. 200 (Cost Br. 120)

24 – Paid Semi Company for purchase of Megabit 3 loss return of Megabit 12

25 – Received full payment from Belew Company for his Megabit 1 purchase less the return on Megabit 18

Required:

1. Prepare general journal entries to record the transactions, assuming use of the periodic inventory system.
2. Prepare general journal entries to record the transactions, assuming use of the periodic inventory system.
3. Compute the cost of goods sold and net sales during Megabit.
4. Compute the Gross Profit on sale for the month of Megabit.

1.9 GLOSSARY

1. **Cost of merchandise sold-** The cost of the merchandise purchased by a merchandise enterprise and sold
2. **Current asset-** Cash or another asset that may reasonably be expected to be realized in cash or sold or consumed, usually within a year or less, through the normal operations of a business.

3. **Finished goods inventory-** The cost of finished products on hand that have not been sold
4. **FOB destination-** Terms of agreement between buyer and seller where by ownership passes when merchandise is received by the buyer, and the seller absorbs the transportation costs.
5. **FOB shipping, point-**Terms of agreement between buyer and seller, whereby ownership passes when merchandise is delivered to the shipper, and the buyer absorbs the transportation costs.
6. **Gross profit-** The excess of net revenue from sales over the cost of merchandise sold.
7. **Net income-** The final figure in the income statement when revenues exceed expenses.
8. **Purchases returns and allowances-** Reduction in purchase, resulting from merchandise returned to the vendor or from the vendor's reduction in the original purchase price; a contra account to purchases.
9. **Work in process inventory-** The direct materials costs, the direct labor costs, and the factory overhead costs, which have entered into the manufacturing process, but are associated with products that have not been finished.

UNIT 2: DETERMINING THE COST OF INVENTORY

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2.0 AIMS AND OBJECTIVES

This unit aims at discussing inventory cost determination and inventory costing methods.

After going through this unit, you will be able to:

1. describe the determination of the cost of inventory
2. aware of the most common inventory costing methods under a periodic system
3. compare the effect of the methods on operating results
4. describe the accounting for inventory under the perpetual system.

2.1 INTRODUCTION

This chapter is the continuation of the previous chapter, in which we have discussed the meaning and concepts of inventory. In this chapter, we will discuss the determination of the cost of inventory.

Costs included in merchandise inventory are those expenditures necessary, directly or indirectly, to bring an item to a salable condition and location. In other words, cost of an inventory item includes its invoice price minus any discount, plus any added or incidental costs necessary to put it in a place and condition for sale. Added or incidental costs can include import duties, transportation-in, storage, insurance against losses while the goods are in transit, and costs incurred in an aging process (for example, aging of wine and cheese).

Minor costs that are difficult to allocate to specific inventory items may be excluded from inventory cost and treated as operating expenses of the period. This is based on materiality principle or the cost-to-benefit constraint.

Check Your Progress Exercise -1

1. An art gallery purchases a painting for Br. 11,400 on terms FOB shipping point. Additional costs in obtaining and offering the artwork for sale include. 130 for transportation-in, Br. 150 for import duties, Br. 100 for insurance during shipment, Br. 180 for advertising, Br. 400 for training, and Br. 800 for sales salaries. For computing inventory, what cost is assigned to the painting?

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2.2 INVENTORY COSTING METHODS UNDER PERIODIC INVENTORY SYSTEM

One of the most important decisions in accounting for inventory is determining the per unit costs assigned to inventory items. When all units are purchased at the same unit cost, this process is simple since the same unit cost is applied to determine the cost of goods sold and ending inventory. But when identical items are purchased at different costs, a question arises as to what amounts are included in the cost of merchandise sold and what amounts remain in inventory. A periodic inventory system determines cost of merchandise sold and inventory at the end of the period. We must record cost of merchandise sold and reductions in inventory as sales occur using a perpetual inventory system. How we assign these costs to inventory and cost of merchandise sold affects the reported amounts for both systems.

There are four methods commonly used in assigning costs to inventory and cost of merchandise sold. These are:

- ✍ Specific identification
- ✍ First-in first-out(FIFO)
- ✍ Last-in first-out (LIFO)
- ✍ Weighted average

Let us see these costing methods under ***periodic inventory*** system based on the following illustration

Illustration:

Beza Company began the year and purchased merchandise as follows:

Jan-1	Beginning inventory	80 units@ Br. 60 = Br. 4,800
Feb. 16	Purchase	400 units@ 56 = 22,400
Sep.2	Purchase	160 units @ 50 = 8,000
Nov. 26	Purchase	320 units@ 46 = 14,720
Dec. 4	Purchase	<u>240</u> units@ 40 = <u>9,600</u>
	Total	<u>1200</u> units Br. <u>59, 520</u>

The ending inventory consists of 300 units, 100 from each of the last three purchases.

2.2.1 Specific Identification Method

When each item in inventory can be directly identified with a specific purchase and its invoice, we can use specific identification (also called specific invoice pricing) to assign costs. This method is appropriate when the variety of merchandise carried in stock is small and the volume of sales is relatively small. We can specifically identify the items sold and the items on hand.

Example

From the above illustration, the ending inventory consists of 300 units, 100 from each of the last purchases. So, the items on hand are specifically known from which purchases they are:

Cost of ending inventories under specific identification method

Br. 40 x 100	=	Br. 4,000
Br. 46 x 100	=	4,600
Br. 50 x <u>100</u>	=	5,000
<u>300units</u>		<u>Br. 13,600</u>

► Cost of Ending inventory cost = Br. 13,600

► The cost of merchandise sold = Cost of goods available for sale -

Ending inventory

= Br. 59,520 - Br. 13,600

= Br. 45,920

2.2.2 First-in, First-out (FIFO)

This method of assigning cost to inventory and the goods sold assumes inventory items are sold in the order acquired. This means the cost flow is

in the order in which the expenditures were made. So, to determine the cost of ending inventory, we have to start from the most recent purchase and continue to the next recent. Because the first purchased items (old purchases) are the first to be sold they are used (included) in the computation of cost of goods sold.

For example, easily spoiled goods such as fruits, vegetables etc., must be sold near the time of their acquisition. So, the inventory on hand will be from the recent purchases. As an example, consider the previous illustration on page 21.

The cost of ending inventory under FIFO method

$$\begin{array}{rcl}
 & = \text{Br. } 40 \times 240 & \text{Br. } 9,600 \\
 & = \text{Br. } 46 \times \underline{60} & \underline{2,760} \\
 & \text{300 units} & \underline{\text{Br. } 12,360} \\
 & & \\
 > \text{Cost of Ending inventory} & & \text{Br. } 12,360 \\
 > \text{Cost of merchandise sold} = \text{Br. } 59,520 - \text{Br. } 12,360 & & \\
 & & \underline{\text{Br. } 47,160}
 \end{array}$$

2.2.3 Last-in first-out (LIFO)

This method of assigning cost assumes that the most recent purchases are sold first. Their costs are charged to cost of goods sold, and the costs of the earliest purchases are assigned to inventory. The cost flow is in the reverse order in which expenditures were made.

In calculating the cost of goods sold, we will start from the earliest purchases.

As an example, take the previous illustration

The cost-ending inventory under FIFO method

$$= \text{Br. } 60 \times 80 = \text{Br. } 4,800$$

$$= \text{Br. } 56 \times 220 = 12,320$$

300 units

$$\text{Ending inventory cost} = \text{Br. } 17,120$$

$$\begin{aligned} \text{Cost of merchandise sold} &= \text{Br. } 59,520 - \text{Br. } 17,120 \\ &= \text{Br. } 42,400 \end{aligned}$$

2.2.4 Weighted Average Method

This method of assigning cost requires computing the average cost per unit of merchandise available for sale. That means the cost flow is an average of the expenditures.

To calculate the cost of ending inventory, we will calculate first the cost per unit of goods available for sale

$$\begin{aligned} \text{Average cost per unit} &= \frac{\text{Cost of goods available for sale}}{\text{Total units available for sale}} \end{aligned}$$

Then the weighted average unit cost is multiplied by units on hand at the end of the period to calculate the cost of ending inventory. Also, the same average unit cost is applied in the computation of cost of goods sold.

As an example, take the previous illustration

$$\begin{aligned} \text{Weighted average unit cost} &= \text{Br. } \frac{59,520}{1,200} = \text{Br. } 49.60 \end{aligned}$$

$$\begin{aligned} > \text{Ending inventory cost} &= \text{Br. } 49.60 \times 300 \\ &= \text{Br. } 14,880 \end{aligned}$$

$$\begin{aligned} > \text{Cost of merchandise sold} &= \text{Br. } 59,520 - \text{Br. } 14,880 \\ &= \text{Br. } 44,640 \end{aligned}$$

2.3 COMPARISON OF INVENTORY COSTING METHODS

If the cost of units and prices at which they are sold remains stable, all the four methods yield the same results. But if prices change, the three methods usually yield different amounts for:

- Ending inventory
- Cost of merchandise sold
- Gross profit or net income

In periods of rising (increasing) prices: (or if there is inflationary trend):

FIFO yields – higher ending inventory

- _ Lower cost of merchandise sold
- _ Higher gross profit (net income)

LIFO yields _ Lower ending inventory

- _ Higher cost of merchandise sold
- _ Lower gross profit (net income)

> Weighted average yields the results between the two.

In periods of declining (decreasing) prices:

FIFO yields _ Lower ending inventory

- _ Higher cost of merchandise sold
- _ Lower gross profit or net income

LIFO yields _ higher ending inventory

- _ Lower cost of merchandise sold
- _ Higher gross profit or net income

> Weighted average- between the two

Check Your Progress Exercise -2

1. Which of the methods of inventory costing will in general yield an inventory cost nearly approximating current replacement cost?

-
-
-
2. Does the terms FIFO and LIFO refer to techniques employed in determining quantities of various merchandise on hand?
-
-
-

2.4 INVENTORY COSTING METHODS UNDER PERPETUAL INVENTORY SYSTEM

Under perpetual inventory systems we will apply the inventory costing methods each time sale of merchandise is made. We calculate the cost of goods (merchandise) sold and inventory on hand at the time of each sale. This means the merchandise inventory account is continually updated to reflect purchase and sales.

Illustration:

The beginning inventory, purchases and sales of Nesru Company for the month of January fare as follows:

		<i>Units</i>	<i>Cost</i>
Jan. 1	Inventory	12	Br. 10.00
6	Sale	5	
10	purchase	10	Br. 12.00
20	Sale	8	
25	purchase	8	Br. 12.50
27	Sale	10	
30	purchase	15	Br.
			14.00

2.4.1 First-in first-out Method

The assignment of costs to goods sold and inventory using FIFO is the same for both the perpetual and periodic inventory systems. Because each withdrawal of goods is from the oldest stock on hand. The oldest is the same whether we use periodic inventory system or perpetual inventory system.

Let us calculate the cost of goods sold and ending inventory under perpetual inventory system from the above illustration.

Perpetual - FIFO

Date	Purchase			Cost of merchandise sold			Inventory		
	Qty.	Unit cost	Total cost	Qty	Unit cost	Total cost	Qty	Unit cost	Total cost
Jan. 1							15	Br. 10.00	Br. 150.00
6				5	Br. 10.00	Br. 50.00	10	10.00	100.00
10	10	Br. 12.00	Br.120.00				10	10.00	100.00
							10	0.00	0.00
								12.00	120.00
20				8	10.00	80.00	2	10.00	20.00
							10	0.00	0.00
								12.00	120.00
25	8	12.50	100.00				2	10.00	20.00
							10	0.00	0.00
							8	12.00	96.00
								0.00	0.00
								12.50	100.00
								0.00	0.00

27				2	10.00	20.00	2	12.0	24.
				8	12.00	96.00	8	0 00	
								12.5	100.
								0 00	
30	15	14.00	210.00				2	12.0	24.
							8	0 00	
							5	12.5	100.
								0 00	
								14.0	210.
								0 00	
				23		Br. 246.00	25		Br. 334.00

So, the cost of merchandise sold and ending inventory under perpetual-FIFO method are Br. 246 and Br. 334 respectively.

Let us see them under periodic - FIFO method:

Units on hand = units available for sale - units sold

$$= (15 + 10 + 8 + 15) - (5 + 8 + 10)$$

$$= 48 - 23 = 25$$

Cost of ending inventory = Br. 14 x 15 = Br. 210

$$\text{Br. } 12.50 \times 8 = 100$$

$$\text{Br. } 12 \times 2 = \underline{24}$$

$$\text{Br. } \underline{\underline{334}}$$

Cost of goods available for sale = Br. 120 + Br. 100 + Br. 210 = Br. 580

Cost of goods sold = Br. 580 - Br. 334

$$\underline{\underline{\text{Br } 246}}$$

So, the same results of cost of goods sold and ending inventory under both periodic inventory systems.

2.4.2 Lasting, First-Out method

Unlike FIFO method, different results may occur under periodic and perpetual inventory system. The most recent purchases change when new purchase occurs.

Let us calculate first the cost of goods sold and ending inventory for the above illustration under perpetual inventory system. Then, we will see the results under periodic inventory system.

Perpetual - LIFO

Date	Purchase			Cost of merch. Sold			Inventory		
	Qty	Unit cost	Total cost	Qty	Unit cost	Total cost	Qty	Unit cost	Total cost
Jan. 1							15	Br. 10.00	Br. 150.00
6				5	Br. 10.00	Br. 50.00	10	10.00	100.00
10	10	Br. 12.00	Br. 120.00				10	10.00	100.00
							10	12.00	120.00
20				8	Br. 12.00	Br. 96.00	10	10.00	100.00
							2	12.00	24.00
25	8	12.50	100.00				10	10.00	100.00
							2	12.00	24.00
							8	12.50	100.00
27				8	12.50	100.00	10	10.00	100.00
				2	12.00	24.00			
30	15	14.00	210.00				10	10.00	100.00
							15	24.00	210.00
				23		Br. 270.00	25		Br. 310.00

So, the cost of merchandise sold and ending inventory under perpetual inventory system are Br. 270 and Br. 310 respectively.

The results under periodic inventory system are:

Cost of ending inventory = Br. 10 x 15 = Br. 150

Br. 12 x 10 = 120

25

Br. 270

Cost of merchandise sold = Br. 580 - 270

= Br. 310

As you see, the results are different under periodic & perpetual inventory systems.

2.4.3 Weighted average cost method.

Under this method, the average unit cost is calculated each time purchased is made to be applied on the sales made after the purchases. The results may be different under periodic and perpetual inventory system.

Let us calculate the cost of merchandise sold and ending inventory comes out from the previous illustration under perpetual inventory system.

Average Cost Method (Moving Average)

Date	Purchase			Cost of merchandise sold			Inventory		
	Qty	Unit cost	Total cost	Qty	Unit cost	Total cost	Qty	Unit cost	Total cost

Jan. 1							15	Br. 10.00	Br. 150.00
6				5	Br. 10.00	Br. 50.00	10	10.00	100.00
10	10	12.00	Br. 120.00				20	11.00 $= \frac{100+120}{10+10}$	220.00
20				8	11.00	88.00	12	11.00	132.00
25	8	12.00	100.00				20	11.60 + $\frac{132+100}{12+8}$	232.00
27				10	11.60	116.00	10	11.60	116.00
30	15	14.00	210.00				15	13.04 $\frac{116+210}{10+15}$	326.00
				23		Br. 254.00	25	Br. 13.04	Br 326.00

So, the cost of goods sold and ending inventory under perpetual inventory system are Br. 254.00 and Br. 326.00, respectively.

The results under periodic inventory system are:

Weighted average unit cost = $\frac{\text{Br. 580}}{48}$ = Br. 12.08

Ending inventory cost = Br. 12.08 x 25
= Br. 302

Cost of merchandise sold = Br. 580 - Br. 302
= Br. 278

So, the result is different under periodic and perpetual inventory systems.

Check Your Progress Exercise -3

1. What are the advantages of perpetual inventory system over the periodic inventory system?

.....
.....
.....

2. In periods of steadily rising prices, which inventory method will give the highest,

- i) inventory cost,
- ii) lowest inventory cost
- iii) highest net income, and
- iv) lowest net income?

3. Do the FIFO and LIFO inventory methods result in different quantities of ending inventory?

.....
.....
.....

2.5 SUMMARY

The cost of merchandise inventory is made up of the purchase price and all expenditure incurred in acquiring such merchandising including transportation, customs duties, and insurance against losses in transit.

Under periodic inventory system, in determining the cost of merchandise sold and the inventory at the end of the period, it is customary to use an assumption as to the flow of costs of merchandise through an enterprise. The four methods of costing an inventory are specific identification, FIFO, LIFO and weighted average of which the last three are the cost flow assumptions. The FIFO method of costing inventory is based on the assumption that costs should be charged against revenue in the order in which they were incurred. The LIFO method is based on the assumption

that the most recent costs incurred should be charged against revenues. The weighted average method is based on the assumption that costs should be charged against revenue according to the weighted average unit costs of the goods sold.

If the cost of units and the prices at which they are sold remain stable, all three inventory costing methods will yield the same results. However, during a period of rising prices, the use of FIFO method will result in a higher amount of gross profit than the other two methods. In a period of declining prices, the use of LIFO method will result in a higher amount of gross profit than the other two methods. The average cost method is often viewed as a compromise between the FIFO and LIFO methods.

Under a perpetual inventory system, costs are assigned to the cost of merchandise sold account each time a sale occurs. Specific identification assigns a cost to each item sold by referring to its actual cost. Weighted average assigned a cost to items sold by taking the current balance in the merchandise inventory account and dividing it by the total items to determine the weighted average cost per unit.

2.6 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. Total c cost is Br. 12,180, computed as: Br. 11,400 + 130 + Br. 150 + Br. 100 + Br. 400.

Br. 180 for advertising and Br. 800 for sales salaries are not added to cost of the inventory. They are included in operating expenses

Check Your Progress 2

- 1) First-in, First-out (FIFO) method
- 2) No, They are the methods of determining cost of the inventory.

Check Your Progress 3

- 1) For internal control purpose. This is by comparing the perpetual inventory record and inventory amount through physical count; we can determine the inventory shortage or overage.
- For preparation of interim financial statements, there is no need of counting the inventory. Frequent comparisons of balance with predetermined maximum and minimum levels facilitate the timely recording of merchandise to avoid both excess inventory and the cost of sales.

2.7 MODEL EXAMINATION QUESTIONS

A. *Short answer questions*

- When costs and prices are rising, does LIFO or FIFO report higher net income?
- In periods of declining prices, which method are not preferable income tax purposes?

B. *Workout question*

Tale Company had the following beginning inventory and purchases during 2002:

		Item X	
Date		Unit's	Unit cost
Jan. 1	Inventory	400	Br. 14
March 10	Purchase	200	15
May 9	Purchase	300	16
Sep. 22	Purchase	250	20
Nov. 28	Purchase	100	21

At December 31, 2002, there were 550 units of X on hand.

Sales of units were as follows:

Jan.15	200 units at Br. 30
April 1	200 units at Br. 30

Nov. 1 300 units at Br. 35

Additional data for use in applying the specific identification method

(1) Jan. 15 sale - 200 units @ Br. 14

(2) April 1 Sale - 200 units @ Br. 15

(3) Nov. 1 Sale - 200 units @ Br. 20

Required:

- a. Calculate the cost of merchandise available for sale
 - b. Apply the four different methods of inventory costing to calculate ending inventory & Cost of merchandise sold under:
 - i) Periodic inventory system
 - ii) Perpetual inventory system
-
1. What is the difference between goods flow and cost flow?
 2. What are the relative advantages and disadvantages of FIFO and LIFO methods of inventory costing?
 3. Why do you think it is more expensive to maintain a perpetual inventory system?
 4. What are the three most important advantages of the perpetual inventory system?
 5. A company using a perpetual inventory system sells merchandise to a customer on account for Br. 1250; the cost of the merchandise was Br. 1000.
 - a) What entries would be made on the general ledger accounts as a result of the transaction?
 - b) What is the amount of gross profit realized from this specific sale?

II. Choose the best answer from the given alternatives

1. The inventory system that does not attempt to record the cost of goods sold each time sale is made is;
- a) FIFO b) Periodic c) Perpetual d) Physical
- e) b and d f) c and d
2. If merchandise inventory is being valued at cost and the price level is consistently falling, which method of costing will yield the largest net income?
- a) LIFO b) FIFO c) Average cost d) a or b
- e) None of the above
3. Identify the correct statement
- a) If the FIFO method of inventory costing is selected by a company the method shall be used for all inventory items.
- b) Under the average cost method, the same unit cost is used to compute both the cost of goods sold and the cost of inventory.
- c) One of the major drawbacks of LIFO is that it does not attempt to match current costs with current revenues.
- d) All of the above
- e) None of the above
4. Identify the wrong statement:
- a) The FIFO method in periods of rising prices causes businesses to report more than their true profit resulting in the payment of excess income taxes.
- b) Over a period of rising prices a business that use LIFO method may report the value of inventory at a cost figure far below what it currently pays for the same item.

- c) Pricing the inventory and cost of goods sold using the specific identification method is the same under both periodic and perpetual systems.
 - d) The FIFO method of inventory costing is not the best measure of the current balance sheet value of inventory.
 - e) None of the above.
5. In which method of inventory costing the flow of cost and income determination is given due consideration?
- a) Average cost b) FIFO c) LIFO
 - d) Gross profit e) None of the above

III. Problems

1. Eyassu Furniture Company sold 2200 doors during 19 x 5 at Br. 320 per door. Its beginning inventory on January 1 was 130 doors at Br. 112. Purchases made during the year were as follows:

February	225 doors @ Br. 124
April	350 doors @ Br. 130
June	700 doors @ Br. 140
August	300 doors @ Br. 132
October	400 doors @ Br. 136
November	250 doors @ Br. 144

The company's selling and administrative expenses for the year were Br. 202,000, and the company uses the periodic inventory system.

Required:

1. Prepare a schedule to compute the lost of goods available for sale.
2. Prepare an income statement under each of the following assumptions:
 - (a) costs are assigned to inventory using the average cost method

- (b) costs are assigned to inventory using the FIFO method
- (c) costs are assigned to inventory using LIFO method

2.8 GLOSSARY

- 6. **Cost-to-benefit constraint-** it is a concept that says accounting information is used disclosed if the cost perceived to be associated with it is balanced against the benefits perceived to be associated with it.
- 7. **First-in, First-out (FIFO) method-** method of inventory costing based on the assumption that the costs of merchandise sold should be charged against revenue in the order in which the costs were incurred.
- 8. **Last-in, First-out (LIFO) method-** a method of inventory costing based on the assumption that the most recent merchandise costs should be charged against revenue.

UNIT 3: ADDITIONAL VALUATION PROBLEMS FOR INVENTORIES

Contents

- 3.0 Aims and Objectives
- 3.1 Introduction
- 3.2 Valuation at Lower of Cost or Market
- 3.3 Estimating Inventory Cost
 - 3.3.1 Method of Inventory Costing
 - 3.3.2 Retail Gross Profit Method
- 3.4 Summary
- 3.5 Answers to Check Your Progress
- 3.6 Model Examination Questions
- 3.7 Glossary

3.0 AIMS AND OBJECTIVES

This chapter aims at discussing various valuation methods like lower of cost or market, retail method and gross profit method.

After studying this chapter, you would be able to:

1. explain the valuation of inventory at other than cost, including valuation at the lower of cost or market.
2. acquaint yourself with various methods of estimating cost of an inventory, including retail method and gross profit method.

3.1 INTRODUCTION

an attempt has been made in this unit to explain valuation of inventory valuation and the problems such as valuation at lower of cost or market, retail method and gross profit method of estimating an inventory cost.

3.2 VALUATION AT LOWER OF COST OR MARKET (LCM)

It was explained how costs are assigned to ending inventory and cost of goods sold using one of 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 the market value of replacing inventory when market is lower than cost. 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; 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 item*
- (2) To major categories of items*
- (3) To the whole of inventory*

The less similar the items are that make up inventory, 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.

<i>Inventory</i>	<i>units</i>	<i>per unit</i>	
<i>Items</i>	<i>on hand</i>	<i>cost</i>	<i>market</i>
Cycles:			
Roadster	50	Br. 15,000	Br. 14,000

<i>Sprint</i>	20	9,000	9,500
Off Road:			
<i>Trax-4</i>	10	10,000	11,200
<i>Blaz'm</i>	6	16,000	14,500

Let us see LCM computation under the three ways:

(1) Separately to each individual item

<i>Inventory items</i>	<i>Total cost</i>	<i>Total market</i>	
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	<u>96,000</u>	<u>87,000</u>	
<u>87,000</u>			
Categories sub total	Br. 196,000	Br. 199,000	
Totals	Br. <u>1,126,000</u>	Br. <u>1,089,000</u>	<u>Br.</u>
<u>1,1,067,000</u>			

(2) Major categories of items

<i>Inventory</i>	<i>Categories</i>	<i>Categories</i>
LCM		
<i>categories</i>	<i>total cost</i>	<i>total market</i>
Cycles	Br. 930,000	Br. 890,000
Br. 890,000		
Off. Road	<u>196,000</u>	<u>199,000</u>
<u>199,000</u>		

Totals	<u>Br. 1,126,000</u>	<u>Br. 1,089,000</u>
	<u>Br. 1,086,000</u>	

When LCM is applied to the whole of inventory, the market cost is Br. 1,089,000. 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.

Check Your Progress Exercise -1

1. In the phrase lower of cost or market, what is meant by “market”?

.....

2. Blen Trading value its inventory, shown below, at the lower of cost or market. Compute Blen's inventory value using (i) item - by - item method, and (ii) the major category method.

	Quantity	Per Unit	
		Cost	Market
Category I			
Item A	200	Br. 5.00	Br. 4.00
Item B	300	4.00	4.00
Item C	400	10.00	8.60
Category II			
Item X	500	8.00	9.20

Item Y	300	14.00	14.50
--------	-----	-------	-------

3.3 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

- 1) Monthly income statements are needed. It may be too costly, to take physical inventory. This is especially the case when periodic inventory system is used.
- 2) When a catastrophe such as a fire has destroyed the inventory. In such case, to ask claims from insurance companies, there is a need of estimated inventory.

To estimate the cost of inventory, two methods are used. These are retail method and gross profit method.

3.3.1 Retail method of inventory costing

This method is mostly used by retail business. The estimate is made based on the relationship between the cost and the retail price of merchandise available for sale.

The steps to be followed are:

- (1) Calculate the cost to retail ratio =
$$\frac{\text{Cost of merchandise available for sale}}{\text{Retail Price of merchandise available for sale}}$$
- (2) Calculate the ending inventory at retail price
Ending inventory at retail price = retail price of merchandise available for sale - **Sales**
- (3) Calculate the estimated cost of ending inventory

Estimated cost of ending inventory = Cost to retail ration X
Ending inventory at retail

Example

	Cost	Retail
Sep. 1, beginning inventory	Br. 25,000	Br. 40,000
Purchases in September (net)	125,000	
160,000		
Sales in September (net)		140,000

(1) Cost retail ration = $\frac{\text{Br. 25,000} + \text{Br. 125,000}}{\text{Br. 40,000} + \text{Br. 160,000}} = 0.75$

(2) Ending inventory at retail = (Br. 40,000 + Br. 160,000) - Br. 140,000
 = Br. 60,000

(3) Estimated ending inventory at cost = 0.75 X Br. 60,000
 = Br. 45,000

Check Your Progress Exercise -2

- Enterprises using the retail method of inventory costing determine the merchandise inventory at retail is Br. 300,000. If the ratio of cost of retail price is 65%, what is the estimated cost of inventory?

.....

- Does the retail inventory method mean that inventories are measured at retail value on the balance sheet? Explain.

.....

3.3.2 Gross profit method

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 steps are as follows:

- (1) The gross profit rate is estimated and then estimated gross profit is calculated.

$$\text{Estimated gross profit} = \text{Gross profit rate} \times \text{Sales}$$

- (2) Cost of merchandise sold is estimated

$$\text{Estimated cost of merchandise sold} = \text{Sales} - \text{Estimated gross profit}$$

- (3) Calculate the estimated cost of ending inventory

$$\text{Estimated cost of ending inventory} =$$

$$\text{Cost of merchandise available for sale} - \text{Estimated cost of merchandise sold.}$$

Example

Oct. 1, beginning inventory (cost) - Br. 36,000

Net purchases during October (cost) 204,000

Net sales during October 220,000

Estimated gross profit rate is 40%

The ending inventory is estimated as follows:

$$\begin{aligned} (1) \text{ Estimated gross profit} &= 0.4 \times 220,000 \\ &= \underline{\text{Br. 88,000}} \end{aligned}$$

$$\begin{aligned} (2) \text{ Estimated cost of merchandise sold} \\ &= \text{Br. 220,000} - \text{Br. 88,000} \\ &= \underline{\text{Br. 132,000}} \end{aligned}$$

$$\begin{aligned} (3) \text{ Estimated cost of ending inventory} \\ &= (\text{Br. 36,000} + 204,000) - \text{Br. 132,000} \\ &= \text{Br. 240,000} - \text{Br. 132,000} \end{aligned}$$

$$= \underline{\text{Br. 108,000}}$$

Check Your Progress Exercise-3

1. Cost of merchandise available for sale is Br. 200,000 and net sales for the period is Br. 180,000. If the cost of merchandise sold percentage of sales is 60%, what is the estimated cost of the inventory to be reported on the financial statements?

.....
.....
.....

2. What are some of the reasons that may cause management to use the gross profit method of estimating inventory?

.....
.....
.....

3.4 SUMMARY

If the market price of an item of inventory is lower than its cost, the lower of cost or market method is used to value inventory. Market, as used in the phrase lower of cost or market; is interpreted to mean the cost to replace merchandise on the inventory date. It is possible to apply the lower of cost or market basis to each item in the inventory, to major classes or categories, or to the inventory as a whole.

When it is impractical or impossible to take a physical inventory or to maintain perpetual inventory records, two commonly used methods of estimating inventory would be applied:

- 1) the retail method and
- 2) the gross profit method

The retail method of inventory estimation is based on the relation ship of the cost of merchandise available for sale to the retail prices of the same

merchandise. The inventory at retail is determined by deducting net sales for the period from the retail price of the goods that were available for sale during the period. The inventory at retail is then converted to cost on the basis of the ratio of cost to selling price of the merchandise available for sale.

The gross profit method of estimating inventory is based upon the historical relationship of the gross profit to the sales. The rate of gross profit is multiplied by the sales to determine the gross profit. To determine the cost of merchandise sold, the gross profit is then subtracted from sales. The estimated cost of ending inventory is computed by subtracting the cost of merchandise sold from cost of merchandise available for sale.

3.5 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. The cost to replace merchandise on the inventory date
2. (i) Item - by - item method:

<i>Category I</i>	<i>Total Cost</i>	<i>Total Market</i>	<i>LCM</i>
Item A	Br. 1000	Br. 800	Br. 800
Item B	1200	1320	1200
Item C	4000	3440	3440
<i>Category II</i>	<i>Total Cost</i>	<i>Total Market</i>	
<i>LCM</i>			
Item X	Br. 4000	Br. 4600	Br.
			4000
Item Y	4200	4350	
			1200
Inventory of LCM			<u>Br.</u>
			<u>13,640</u>

(ii) The Major Category Method

Category I	Total Cost	Total Market	LCM
Item A	Br. 1000	Br. 800	
Item B	1200	1320	
Item C	4000	3440	
Totals	<u>Br. 6200</u>	<u>Br. 5560</u>	<u>Br.</u>
			<u>5560</u>
Category II	Total Cost	Total Market	
LCM			
Item X	Br. 4000	Br. 4600	
Item Y	<u>4200</u>	<u>4350</u>	
Totals	<u>Br. 8200</u>	<u>Br. 8950</u>	Br.
			<u>8200</u>
Inventory of LCM		<u>Br. 13,760</u>	

Check Your Progress Exercise 2

1. It is Br. 195,000 computed as $0.65 \times \text{Br. } 300,000$
2. No, the inventory at retail is converted to cost on the basis of the ratio of cost to retail. Therefore, it is reported on the balance sheet at its estimated cost.

Check Your Progress Exercise 3

1. It is Br. 92,000 computed as follows
$$\begin{aligned}\text{Cost of merchandise sold} &= \text{Br. } 180,000 \times 0.60 = \text{Br. } 108,000 \\ \text{Estimated cost of ending inventory} &= \text{Br. } 200,000 - \text{Br. } 108,000 \\ &= \text{Br. } \underline{92,000}\end{aligned}$$
2. To replace the retail method when records of the retail prices of beginning inventory and purchases are not kept.
To prepare interim financial statements, and to estimate the inventory lost or destroyed by theft, fire, or other hazards.

3.6 MODEL EXAMINATION QUESTIONS

A. Short answer questions

1. From three ways of applying lower of cost or market, which one results in minimum value of inventory?
2. When do we use the inventory estimation methods to determine the cost of inventory?

B. Work out questions

1. Crystal Corporation's ending inventory includes the following items.

<i>Product per unit</i>	<i>Units on hand</i>	<i>Unit cost</i>	<i>Replacement cost</i>
W	40	Br. 30	Br. 34
X	50		48 40
Y	60		26 24
Z	44		20 20

Replacement cost is determined to be the best measure of market. Calculate lower of cost or market for the inventory

- a. As a whole
- b. Applied separately to each products

2. The records of the unlimited provided the following information for the year ended December 31:

	<i>At cost</i>	<i>At retail</i>
Jan. 1 beginning inventory	Br. 160,450	Br.
264,900		
Purchases	1,100,140	
1,828,200		

Purchases returns	17,600	
34,100		
Sales	—	
1,570,200		
Sales returns	—	
15,600		
Transportation in	13,000	—

Required: calculate the estimated cost of ending inventory

- a. By retail method
 - b. By gross profit method if the gross profit rate is 30%
3. Rahel Company's Dress shop had net retail sales of Br. 1,000,000 during the current year. The following additional information was obtained from the accounting records:

	At Cost	At Retail
Beginning Inventory	Br. 160,000	Br. 240,000
Net Purchase	560,000	
880,000		
Transportation - In	41,600	

Required:

- a) Estimate the company's ending inventory at cost using the retail method.
 - b) Assume that a physical inventory taken at year-end revealed an inventory on hand of Br. 72,000 at retail value. What is the estimated amount of inventory shrinkage (loss due to theft, damage, and so forth) at cost?
4. Fantu and his family is a large retail furniture company that operates in two adjacent warehouses. One warehouse is a showroom, and the other is used to store merchandise. On the night of March 13,

a fire broke out in the storage warehouse and destroyed the merchandise stored there.

Fortunately, the fire did not reach the showroom, so all the merchandise on display was saved.

Although, the company maintained a perpetual inventory system, its records were rather had hazard, and the last reliable physical inventory was taken on December 31. In addition, there was not control of the flow of the goods between the show room and the warehouse.

Thus, it was impossible to tell what goods should be in either place. As a result, the insurance company required an independent estimate of the amount of loss. The insurance company examiners were satisfied when they were provided with the following information.

1. Merchandise Inventory on December 31	Br.
1,454,800	
2. Purchase, January 1 to March 13	
2,412,200	
3. Purchase Returns, Jan. 1 to March 13	(10,706)
4. Freight - In, Jan 1 to March 13	53,100
5. Sales, January to March 13	
3,959,050	
6. Sales Returns, Jan 1 to March 13	
(29,800)	
7. Merchandise Inventory in Showroom March 13	
402,906	
8. Average gross Margin	44%

Required:

Prepare a schedule that estimates, the amount of the inventory lost in the fire.

5. **Sanete Trading Company** switched recently to the retail inventory method to estimate the cost-ending inventory. To test this method, the company took a physical inventory one month after its implementation. Cost, retail, and the physical inventory data are as follows:

	<i>At Cost</i>	<i>At Retail</i>
Beginning Inventory, January 1	Br. 472,132	Br.
622,800		
Purchase	750,000	
1,008,400		
Freight - In	8,350	
Purchases Returns and Allowances		(25,200)
(34,800)		
Sales		1,060,000
Sales Returns and Allowances		
(28,000)		
January 31, Physical Inventory		
508,200		

Required:

- Prepare a schedule to estimate the amount of **Sanete Company's** January 31 inventory using the retail method.
- Use the company's cost ratio to reduce the retail value of the physical inventory to cost.
- Calculate the estimated amount of inventory shortage of cost and at retail.

UNIT 4: ACCOUNTING FOR PLANT ASSETS AND DEPRECIATION

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4.0 AIMS AND OBJECTIVES

This unit aims at discussing the meaning and nature of plant assets, acquisition costs, and the related cost allocation (depreciation) of plant assets. The units also discuss the different methods of computing depreciation and the accounting procedures involved in recording the transactions relating to disposal of plant assets.

After having studied and worked through this unit, you will be able to:

- determine the acquisition cost of tangible assets
- compute depreciation for plant assets using various depreciation methods
- record depreciation expense in the accounting records
- distinguish expenses from expenditures that should be capitalized
- differentiate depreciation for financial reporting from depreciation for income tax

4.1 INTRODUCTION

In the previous chapter you have learnt about the accounting for current assets (i.e. accounting for cash, receivables and inventories). In this

chapter you will learn about the issues of plant assets and its related depreciation.

Most business enterprise holds such major assets as land, buildings, equipments, furnitures, tools, and etc. These assets help produce revenue over many periods by facilitating the production and sale of goods or services to customers. Because these assets are necessary in a company's day-to-day operations, companies do not sell them in the ordinary course of business. Keep in mind, though; one company's long-term asset might be another company's short-term asset. For example, a delivery truck is a long-term asset for most companies, but a truck dealer would regard a delivery truck as a current asset merchandise inventory.

4.2 NATURE AND MEANING OF LONG-TERM ASSETS

Assets that can be used by a business enterprise for relatively long period (usually more than one year) are called ***Long-Term Assets***.

Long-term assets are divided into ***tangible*** and ***intangible*** categories.

Tangible assets (also called plant assets or fixed assets) are assets with physical substance that can be charged in the operations of business for a relatively longer period of time, usually more than one year or one operating cycle whichever is longer. Examples are land, buildings, equipments and machineries, trucks, etc.

In contrast, intangible assets are assets without a physical feature that can be charged in the operations of business for long period of time. They generally consist of rights or advantages held such as goodwill, patents, copyrights, franchise, trade marks, organization costs, etc.

4.3 DETERMINATION OF THE ACQUISITION COST OF PLANT ASSETS

The acquisition cost of plant (fixed) assets is the cash or cash-equivalent purchase price, including incidental costs required to complete the purchase, to transport the asset, and to prepare it for use.

For example, expenditures related to the acquisition of a plant asset such as freight, insurance while in transit, and installation are included in the cost of the asset because they are necessary if the asset is to function. According to the matching principle, therefore, such costs are allocated to the economic life of the asset rather than charged as expenses in the current period.

Land

The acquisition cost of land includes the negotiated cash price plus other costs such as the cost of land surveys, legal fees, title fees, broker's commissions, cost of preparing the land to build on, and even the demolition costs of old structures that might be torn down to get the land ready for its intended use.

Under the historical cost assumption, land is reported in the balance sheet at its original cost. Land is not subjected to depreciation because land does not have a limited useful life.

The following illustration will help us how to determine the cost of land.

Illustration-1

A business enterprise acquires a piece of land for future site. It pays a cash price of Br. 210,000, pays brokerage fees of Br. 7500 and title fees of Br. 3000, pays Br. 5000 to have unwanted building removed, and pays, Br. 1500 to have the site graded. The business receives

Br. 2000 salvage from the old building. The cost of the land is determined as follows:

Cash prices (negotiated price).....	Br.
210,000.00	

Title	
Fees.....	3,000.00
Brokerage	
Fees.....	7,500.00
Cost of Grading.....	
1,500.00	
Cost of removing (demolition) unwanted building	Br. 5000
Less: Salvage received.....(2000).....	
3,000.00	
Total cost of land.....	<u>Br.</u>
<u>225,000.00</u>	

Generally, land is part of property, plant and equipment. If the major purpose of acquiring and holding land is speculative, it is more appropriately classified as an investment. If the land is held on a real estate concern for resale, it should be classified as inventory. When the land has been purchased for the purpose of constructing a building, all costs incurred up to the excavation for the new building are considered land costs. Removal of old buildings clearing, grading and filling are considered land costs because these costs are necessary to get the land in condition for its intended purpose. Any proceeds obtained in the process of getting the land ready for its intended use, such as salvage receipts on the demolition of an old building are treated as reductions in the price of the land.

Cost of buildings

When an existing building is purchased its cost includes, the purchase price plus all repairs and other expenses required to put it in a usable conditions. On the other hand, when a business constructs a new building, the cost includes all reasonable and necessary expenditures, such as those for materials, labor, part of the overhead and other indirect costs, engineers and architects' fees, insurance during construction,

interest incurred on construction loans during the period of construction, lawyers' fees, and building permits. If outside contractors are used in the construction, the net contract price plus other expenditures necessary to put the building in usable condition are included.

Cost of equipment

The term “ equipment” in accounting includes office equipment, store equipment, factory equipment, delivery equipment, machinery, furnitures and fixtures, and similar fixed assets. The cost of such assets includes the invoice (purchase) price, transportation and handling charges, insurance on the equipment while in transit, assembling and installation costs, and costs of conducting trial runs. As indicated earlier, all costs of getting an asset ready for its intended use are costs of that asset.

4.4 NATURE AND MEANING OF DEPRECIATION

As plant assets are used in the operations of a business, their value to provide service decreases through usage and the passage of time.

This cost allocation of plant asset, called ***depreciation***, is recorded in the accounting books periodically.

Depreciation is frequently misunderstood. The term depreciation, as used in accounting, does not refer to the physical deterioration of an asset or the decrease in **market value** of an asset overtime.

Depreciation means the allocation of the cost of a plant asset to the periods that benefit from the services of the asset.

The term depreciation is used to describe the gradual conversion of the cost of the asset into an expense.

Depreciation is not a process of **valuation**. Accounting records are kept in accordance with the cost principle; they are not indicators of changing price levels. It is possible that, through an advantageous buy and specific

market conditions the market value of a building may rise. Nevertheless, depreciation must continue too be recorded because it is the result of an allocation, not a valuation process.

4.5 FACTORS THAT AFFECT THE COMPUTATION OF DEPRECIATION

Four factors affect the computation of depreciation. They are:

- (1) Cost
- (2) Residual value
- (3) Depreciable cost, and
- (4) Estimated economic (useful) life.

Cost- is the net purchase price plus all reasonable and necessary expenditures to get the asset in place and ready for use.

Residual value- also known as *salvage value*, disposal value, scrape value, or trade-in value represents the estimated market value of the asset at the time of its retirement.

Depreciable cost - represents the difference between the asset cost and its estimated residual value. For example, an item of equipment that costs Br. 5000 and has a residual value of Br. 500 would have a depreciable cost of Br. 4500, (Br. 5000 - Br. 500). The depreciable costs must be allocated over the estimated economic life of the asset.

Estimated economic (useful) life- the estimated economic life of an asset is the total number of service units expected from the asset. Service units may be measured in terms of years the asset is expected to be used, units expected to be produced, miles or kilometers expected to be driven, or similar measures. In determining the estimated useful life of an asset, the accountant should consider all relevant information, including (1) past experience with similar repair assets, (2) the asset's present condition, (3) the company's repairs and maintenance policy, (4) current

technological and industry trends, and (5) local conditions such as whether.

4.6 METHODS OF COMPUTING DEPRECIATION

Depreciation methods differ primarily in the amount of cost allocated to each period. A list of depreciation amounts for each year of an asset's useful life is called **depreciation schedule**.

The most common methods of computing depreciation for plant assets are:

- (1) The straight line method
- (2) The units of production method
- (3) The double-declining balance method, and
- (4) The sum-of-the-years-digits method.

4.6.1 Straight-Line Depreciation

When this method is used to allocate depreciation, the depreciable cost of the asset is spread evenly (uniformly) over the useful life of an asset. The straight-line method is based on the assumption that depreciation depends only on the passage of time. The depreciation expense for each period is computed by dividing the depreciable cost by the number of accounting periods in the asset's estimated useful life. The depreciation expense to be reported is the same in each year. The following illustration will help us to understand the Straight-Line method of computing depreciation.

Illustration - 2

Suppose, for example a business enterprise acquires a new computer (office equipment) at a cost of Birr 6000. It is estimated that the computer has an estimated residual value of Birr 1000 at the end of its estimated useful life of 4 years. The yearly (annual) depreciation would be Birr 1250m computed as follows:

$$\text{Annual depreciation} = \frac{\text{Cost} - \text{Salvage value}}{\text{Estimated useful life}}$$

$$= \frac{\text{Birr } 6000 - \text{Birr } 1000}{4 \text{ years}} = \text{Birr } 1250$$

The depreciation to be reported for each of the four years would be as follows:

Depreciation Method- Straight-Line Method

Year	Cost	Yearly Depreciation	Accumulated Depreciation	Carrying value (Book Value)
Beginning of first year	Br. 6000	-	-	Br. 6000.00
End of first year	6000	Br. 1250.00	Br. 1250.00	4750.00
End of second year	6000	1250.00	1250.00	3500.00
End of third year	6000	1250.00	3750.00	2250.00
End of fourth year	6000	1250.00	5000.00	1000.00

NB. There are three important points to note from the depreciation schedule for the straight-line depreciation method. First, the depreciation is the same each year. Second, the accumulated depreciation increases uniformly. Third, the carrying (Book) value decreases uniformly until it reaches the estimated residual value.

4.6.2 Units of Production Method

The production method of depreciation is based on the assumption that depreciation is mainly the result of use and that the passage of time plays no role in the depreciation process. If we assume that the office equipment from the previous illustration has an estimated useful life of 10,000 hours, the depreciation cost per hour would be determined as follows:

$$\text{Hourly depreciation} = \frac{\text{Cost} - \text{Salvage value}}{10000} = \text{Br. } 0.50$$

Rate Estimated units of useful life 10,000
operating hrs.

If we assume that the use of the equipment was 2800 hours for the first year, 3600 hours for the second, 2400 hours for the third, and 1200 hours for the fourth, the depreciation schedule for the office equipment would appear as follows:

Depreciation Schedule - Production Method

Year	Cost	Hours	Depreciation Per Hour	Yearly Depr.	Accum. Depr.	Carrying value (Book value)
Beginning of the First year	Br. 6,000	-	Br. 0.50	-	-	Br. 6,000.00
End of first year	6,000	2,800	0.50	Br. 1,400.00	Br. 1,400.00	4,600.00
End of second year	6,000	3,600	0.50	1,800.00	3,200.00	2,800.00
End of third year	6,000	2,400	0.50	1,200.00	4,400.00	1,600.00
End of fourth year	6,000	1,200	0.50	600.00	5,000.00	1,000.00

Under the production method, there is a direct relation between the amounts of depreciation each year and the units of output or use. Also, the accumulated depreciation increases each year indirect relation to units of output or use. Finally, the carrying amount decreases each year in direct relation to units of output or use until it reaches the estimated residual value.

Under the production method, the units of output or use that is used to measure estimated useful life for each asset should be appropriate for that asset. For example, for one machine number of units produced may be an appropriate measure, for another number of hours may be a better

measure. The production method should be used only when the output of an asset over its useful life can be estimated with reasonable accuracy.

4.6.3 Declining Balance Method

This method of depreciation results in relatively large amount of depreciation in the early years of an assets life and smaller amounts in later years. This method is based on the assumption of the passage of time. Since most kinds of plant assets are most efficient when new, and so they provide more and better service in the early years of useful life. It is consistent with the matching rule to allocate more depreciation to the early years than to later years if the benefits or services received in the early years are greater.

The declining-balance method is the most common accelerated method of depreciation. Under this method depreciation is computed by applying a fixed rate to the book value of the asset, resulting in higher depreciation charges during the early years of the asset's life. Though any fixed rate might be used under the method, the most common rate is a percentage equal to twice the straight-line percentage. When twice the straight-line rate is used, the method is usually called the ***double-declining balance method***.

Referring to the previous example, the equipment had an estimated useful life of four years. Consequently, under the straight-line method, the depreciation rate for each year was 25 percent, (100/ estimated useful life of the asset for 100/ 4 years).

Therefore, under the double-declining balance method, the fixed rate is 50 percent (2X 25 percent). This fixed rate of 50 percent is applied to the remaining carrying value at the end of each year. Estimated residual value is not taken into account in computing depreciation except in the last year of an asset's useful life, when depreciation is limited to the

amount necessary to bring the carrying value down to the estimated residual value. The depreciation schedule for this method is as follows:

Depreciation Schedule, Double-Declining Balance Method

Year	Cost	Fixed Depr. Rate	Yearly Depreciation	Accumulated Depreciation	Carrying Value (BV)
Date of purchase	Br. 6000	50%	-	-	Br. 6000
End of first year	6000	50%	Br. 3000	Br. 3000	3000
End of Second year	6000	50%	1500	4500	1500
End of third year	6000	50%	750	5250	750
End of fourth year	6000	50%	250	550	500

NB. The fixed rate of 50% is always applied to the Book value at the end of the previous year. The depreciation is greatest in the first year and declines each year after that. Finally, the depreciation in the last year is limited to the amount necessary to reduce book value to residual value, $Br. 250 = Br. 750 - Br. 500$ (i.e. Previous book value minus residual value).

Check Your Progress Exercise -1

1. What is the major justification of using the production method of depreciation?

.....

4.6.4 The Sum of The Years Digits Method

Like the declining balance method, the sum of the years digits method provides a higher amount of periodic depreciation expense in the earlier use of the asset's life and a decline depreciation expense thereafter because a successively smaller fraction is applied each year to the

depreciable cost of the asset. Under this method, first we must determine the denominator of the fraction, which is the sum of the digits representing the years of life. While computing depreciation, the denominator of the fraction is unchanged and would remain the same. On the other hand the numerator of the fraction, decreases year by year (4/10,3/10,2/10,1/10). At the end of the asset's useful life, the balance remaining should be equal to the salvage value. For example, for a plant asset with an estimated life of 4 years, the denominator of the fraction is $4+3+2+1 = 10$. The depreciation schedule for this method is as follows:

Depreciation Schedule- Sum - of - the - Years - Digits Method

Year	Depreciable Cost	Rate	Yearly Depreciation	Accumulated Depreciation	Book Value
Date of purchase	Br6000	-	-	-	Br. 6000
End of first year	6000	4/10	Br. 2200	Br. 2200	3800
End of second year	6000	3/10	1650	3850	2150
End of third year	6000	2/10	1100	4950	1050
End of fourth year	6000	1/10	550	5500	500

Check Your Progress Exercise -2

1. What happens if the estimated economic life of the asset is, let say, 25 years? How would you calculate the sum-of-years-digits?

.....

.....

.....

NB. The above illustration for the sum of year's digit method is based on the assumption that the first use of the asset coincide with the beginning

of the fiscal period. When the first use of the asset does not coincide with the beginning of a fiscal year, it is necessary to allocate each full year's depreciation b/n the two fiscal years benefited. Assuming that the asset in the example was placed in service after four months of the fiscal year had been elapsed, the depreciation for that fiscal year would be Br. 1466.67 computed as follows:

First year depreciation = $4/10 \times (6000 - 500) \times 8/12$ Br.
1466.67

Therefore, the depreciation for the second year would be
....Br. 1833.33

Computed as follows:

$= 4/10 \times (6000 - 500) \times 4/12$ Br.
733.33

$= 3/10 \times (6000 - 500) \times 8/12$
1100.00

Total, second fiscal year depreciation..... Br.
1833.33

4.7 COMPARISON OF DEPRECIATION METHODS

The straight-line depreciation provides a uniform or equal depreciation charges to expense throughout the service life of the asset.

The production method of depreciation provides for periodic charges to depreciation expense that may vary considerably, depending upon the amount of usage of the asset. The production method does not generate a regular pattern because of the random fluctuation of the depreciation from year to year.

The major limitation of the production method is that it is not appropriate in situation in which depreciation is a function of time instead of activity.

Another problem in using the production method is that an estimate of units of output or service hours received is often difficult to determine.

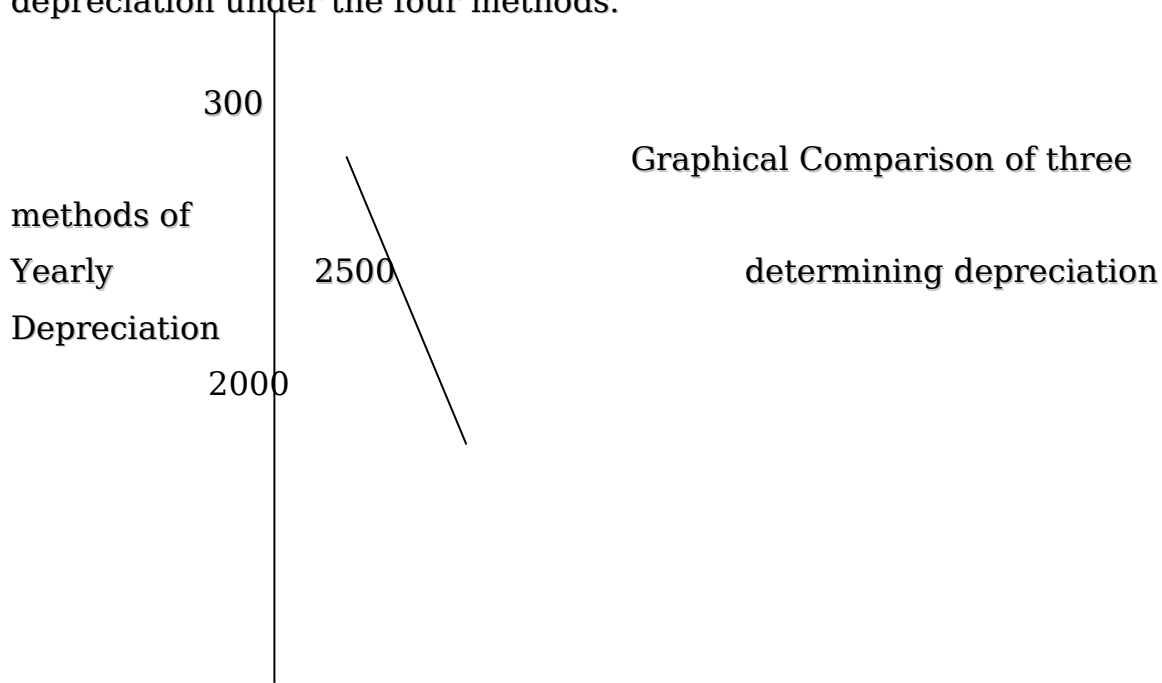
Both the declining balance and the sum of the years digits methods are referred to as accelerated depreciation methods, because they provides (report) relatively higher depreciation expense in the earlier uses of the life of the asset and a gradually declining periodic expense thereafter.

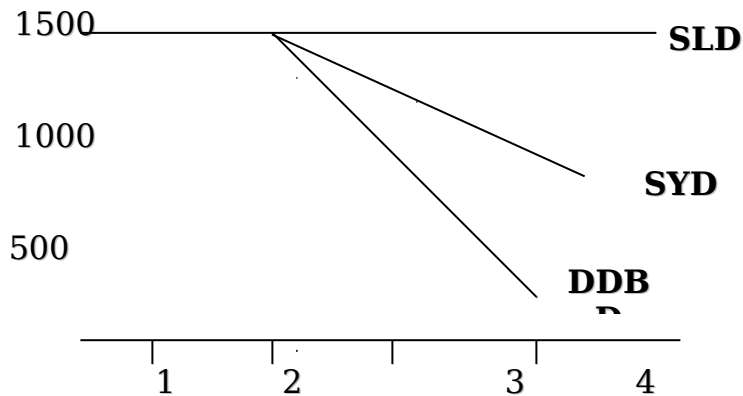
The main justification for this approach is that more depreciation should be charged in earlier years because the asset suffers its greatest loss of services in those years.

Accelerated depreciation method also recognizes that changing technologies make some equipment lose their capacity to yield services rapidly. Thus, it is appropriate to allocate more to depreciation in the early years, than in later years.

Another argument in favor of an accelerated method is that repair (maintenance) expense is likely to be greater in later years than in early years. Thus, the reduced amounts of depreciation reported in later years of the asset's life are offset to some extent by increased repair (maintenance) expense.

A visual comparison may provide a better understanding of the three-depreciation methods disc ribe above. Figure 4-1 compares the yearly depreciation under the four methods.





In the above graph that shows yearly depreciation, straight-line depreciation is uniform at Birr 1375 per year over the four years period. However, the declining balance method begins at an amount greater than straight line (Br.3000) and decreases each year to amounts that are less than straight line (ultimately, Br. 250). The production method does not generate a regular pattern because of the random fluctuation of the depreciation from year to year. In general companies use different methods of deprecation for goods reason. The straight-line method can be advantageous for financial reporting because it can produce the highest net income, and the accelerated depreciation method can be beneficial for tax purposes because it can result in lower income taxes.

Check Your Progress Exercise -3

- Under what situation is the production method of depreciation appropriate?

.....

- State and describe the draw back of the production method of depreciation?

.....

4.8 RECORDING DEPRECIATION

The amount by which a fixed asset decreases is an expense of the business. The amount of depreciation expense should be recorded each fiscal period. If depreciation expense is not recorded, the income statement will not contain all the expenses of the business. This will cause the net income to be reported higher than it should be. Income tax laws allow a business to deduct depreciation as an expense in determining net income. If depreciation expenses are not included on the income tax reports, the business will pay more income taxes than it should be.

Depreciation may be recorded by an entry at the end of each month, or the adjustment may be delayed until the end of the year.

To record the periodic cost expiration (allocation) of plant asset, the expense account, depreciation expense is debited and the part of the entry that records the decrease in the plant asset is credited to a contra asset account entitled Accumulated Depreciation or Allowance for Depreciation. The use of this contra asset account permits the original cost to remain unchanged in the plant asset account. This facilitates the computation of periodic depreciation, the listing of both cost and accumulated depreciation on the balance sheet, and reporting required for property and income tax purposes.

NB. An exception to the general procedure of recording depreciation monthly or annually is often made when a plant asset is sold, traded-in, or discarded.

Check Your Progress Exercise -4

1. What would be the journal entry to record the depreciation expense of a machine that costs Br? 3000, with no salvage value and has an estimated economic life of 10 years if the straight-line method is

applied? Assuming that the machine was placed in service after two months had been elapsed in the current period

.....

.....

Illustrative Problem

TORA-BORA Construction Company acquired a new crane for Birr 360,500 at the beginning of year 1. The crane has an estimated residual value of Birr 35,000 and an estimated useful life of five years. The crane is expected to last 10,000 operating hours. It was used 1800 hours in year 1, 2000 hours in year 2. and 2500 hours in year 3. Based on the information given above:

- 1) Compute the annual depreciation and the carrying value for the crane for each of the first three years under each of the following methods:
 - a) Straight line method,
 - b) Units of production method,
 - c) Double-declining-balance method, and
 - d) Sum-of-the-years-digits method.
- 2) Prepare the adjusting entry that would be made each year to record the depreciation calculated under the straight line method.

Solution:

1) a) *Straight Line Method:*

$$\text{Annual depreciation} = \frac{\text{original cost} - \text{estimated salvage value}}{\text{Estimated Economic life}}$$

$$= \frac{\text{Br. } 36,500 - \text{Br. } 35,000}{5 \text{ years}}$$

$$= \frac{\text{Br. } 325,500}{5} = \text{Br. } 65,100$$

Therefore, depreciation for the first year, second year, and for the third year, is uniformly
Br. 65,100.

b) Units of Production Method:

$$\text{Hourly Depreciation Rate} = \frac{\text{Original Cost} - \text{Salvage value}}{\text{Estimated Operating Hours}}$$

$$= \frac{\text{Br. } 360,500 - 35,000}{10,000 \text{ operating hours}}$$

$$= \text{Br. } 32.55$$

During the first year the crane has been in operation for 1800 hours.
Therefore, the depreciation for the first year is Br. 58,590, computed as follows:

$$\text{Br. } 32.55 \times 1800 \text{ hours} = \text{Br. } 58,590$$

$$\text{Second year depreciation} = \text{Br. } 32.55 \times 2000 \text{ hours} = \text{Br. } 65,100$$

$$\text{Third year depreciation} = \text{Br. } 32.55 \times 2500 \text{ hours} = \text{Br. } 81,375$$

c) Double-declining- balance Method:

To proceed with the double-declining-balance method, first we have to determine the rate. The double-declining rate for the asset can be obtained by the following formula:

$$\text{Rate} = \left(\frac{100}{\text{Estimated Life}} \right) \times 2$$

$$\text{Rate} = \frac{100}{5 \text{ years}} \times 2 = 40\%$$

Unlike the 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 at the beginning of each period. Therefore,

$$\text{First year depreciation} = 40/100 \times 36,500 = \text{Br. } \underline{144,200}$$

$$\begin{aligned} \text{Second year depreciation} &= 40/100 \times (360,500 - 144,200) \\ &= 40/100 \times 216,300 = \text{Br. } \underline{86,520} \end{aligned}$$

$$\begin{aligned} \text{Third year depreciation} &= 40/100 (360,500 - 230,720) \\ &= 0.4 \times 129,780 = \text{Br. } \underline{51,912} \end{aligned}$$

d) Sum-of-the-years-digits Method

To work with this method, we must determine the denominator of the fraction,

The denominator or the fraction for an asset with an estimated economic life of 5 years is $5+4+3+2+1 = \underline{15}$

- Depreciation for year 1 is therefore, $5/15 \times (\text{OC} - \text{Salvage value})$
- Which is $5/15 \times (325,500) = \text{Br. } \underline{108,500}$
- Second year depreciation = $4/15 \times (325,500) = \text{Br. } \underline{86,800}$
- Third year depreciation = $3/15 \times 325,500 = \text{Br. } \underline{65,100}$

4.9 SPECIAL DEPRECIATION METHODS

Some times each of the four depreciation methods discussed so far may not be suitable because the assets involved have unique characteristics, or the nature of the industry requires that a special depreciation method

be use of these methods, the group and composite methods are discussed below:

4.9.1 Group And Composite Methods

Depreciation methods are usually applied to a single asset. Under some circumstances, however, a number (group) of asset accounts are depreciated using one rate. For example, an enterprise such as Ethiopian Telecommunication Corp. might depreciate telephone poles, microwave systems, or switchboards by groups.

Group depreciation - the term “group” refers to a collection of assets that are similar in nature. The group method is frequently used when the assets are fairly homogeneous and have approximately the same useful lives. The group method more closely approximates a single-unit cost procedure because the dispersion from the average is not as great.

Composite-rate depreciation - the term “composite” refers to collection of assets that are not similar (or dissimilar) in nature.

The composite method is used when the assets are heterogeneous and have different lives.

When depreciation is computed on the basis of a composite group of assets of differing life spans, a rate based on averages must be developed. This is done by (1) computing the annual depreciation for each asset, (2) determining the annual depreciation, and (3) dividing the sum thus determined by the total cost of the assets.

Illustration - 3

TANA Transport share Co. depreciates its group of cars, buses, and trucks on the basis of composite-depreciation method. The composite-rate depreciation is computed in the following manner:

<i>Estimated Asset method)</i>	<i>Original Annual Dep. Cost</i>	<i>Residual Value Cost</i>	<i>Depreciable Life</i>	<i>(straight line</i>
Cars	Br.400,000	Br. 80,000	Br. 320,000	8
years	Br. 40,000			
Buses	2,400,000	240,000	2,160,000	10
years	216,000			
Trucks	<u>1,500,000</u>	<u>150,000</u>	<u>1,350,000</u>	9 years
<u>150,000</u>				
	<u>Br. 4,300,000</u>	<u>Br. 470,000</u>	<u>Br. 3,830,000</u>	
	<u>Br. 406,000</u>			

$$\text{Composite depreciation rate} = \frac{\text{Br. 406,000}}{\text{Br. 4,300,000}} = 9.44\%$$

If no change exists in the asset account, the group of assets will be depreciated to the residual or salvage value at the rate of Br. 406,000 (Br. 4,300,000 x 9.44%) a year.

The composite depreciation rate may be applied against total asset cost on a monthly basis, or some reasonable assumption may be made regarding the timing of increases and decreases in the group. A common practice is to assume that all additions and retirements have occurred uniformly throughout the year. The composite rate is then applied to the average of the beginning and ending balances of the account. Another acceptable averaging technique is to assume that all additions and retirements during the first-half of the year occurred as of the first day of the year, and that all additional and retirements during the second half of the year occurred on the first day of the following year.

NB. If an asset within the composite group is retired before, or after, the average service life of the group is reached, the resulting **gain** or **loss** should not be recognized. This practice is justified because some assets will be retired (disposed) before the average service life of the group and

others after the average life. For this reason, the debit to Accumulated Depreciation is the difference between original costs and cash received.

Illustration - 4

Suppose that TANA Transport share Co. in the previous example, sold one of the trucks with the cost of Br. 75,000, at a selling price of Br. 40,000, at the end of the fourth year. Therefore, the entry to record the disposal would be:

Solution:

Original cost of the asset.....	Birr 75,000
Less: cash receipts from sale of asset.....	40,000
Accumulated Depreciation of the asset.....	Birr 35,000
Accumulated Depreciation.....	35,000
Cash.....	40,000
Cars, Buses, and Trucks.....	75,000

4.10 REVISION OF DEPRECIATION RATES

When a plant asset is acquired, depreciation rates are carefully determined based on past experience with similar assets and other relevant information. The provisions for depreciation are only estimates, however, and it may be necessary to revise the estimated economic life and that of salvage value during the life of the asset. Unexpected physical deterioration or unforeseen obsolescence may make the useful life of the asset less than originally estimated. Good maintenance procedures, revision of operating procedures, or similar improvements may prolong the life of the asset beyond the original estimate.

Illustration - 5

Assume that a delivery truck originally acquired for Br. 75,000 is estimated to have a 16-year life with a residual value of Br. 3000. However, after 10 years of intensive use, it is determined that the delivery truck will last only 4 more years, (instead of 6 years) but its estimated residual value at the end of the four years will be Br. 6000, (instead of Br. 3000).

Solution:

Before the revision of the estimated life and the residual value of the asset at the beginning of the 11th year, the asset account and its related accumulated depreciation account would appear as shown below:

Delivery Trucks		Accumulated	Depr-
Delivery Truck			
Cost	75,000		45,000 Balance at the end of the 10 th Year

After the revision, at the beginning of the 11th year, the remaining depreciable cost and the revised annual depreciation by the straight-line method are computed as follows.

Original Cost of the truck.....			
			Birr
75,000			
Less: Accumulated depreciation already taken.....			
<u>45,000</u>			
Remaining cost of the delivery truck.....			
			Birr
30,000			
Less:			
	Revised	estimated	salvage
value.....			
		<u>6,000</u>	
Revised annual depreciation		<u>30,000 - 6000</u>	

4 years Birr 6,000

The new annual periodic depreciation expense is computed by dividing the revised depreciable cost of Br. 24,000 by the remaining revised useful life of 4 years. Therefore, the new periodic depreciation charge is Br. 6000. The annual adjusting entry for depreciation for the next two years would be as follows:

Year 11

Dec. 31, Depreciation Expense - Delivery Truck.....6000
 Accumulated Depreciation - Delivery Truck.....
6000

Year12

Dec. 31 Depr. Expense-Truck.....6000
 Accum. Depreciation-Truck.....60000

Depreciation of partial years

So far, the illustrations of the depreciation methods have assumed that the plant assets were purchased at the beginning or end of the accounting period. However, business does not often buy assets exactly at the beginning or end of the accounting period. In most cases, they acquire the assets when they are needed and sell or discard them when they are no longer useful or needed. The time of year is normally not a factor in the decision. Thus, it is often necessary to calculate depreciation for partial years.

Illustration - 6

Assume that a piece of equipment is purchased for Br. 5000 and that it has an estimated useful life of five years, and an estimated residual value of Br. 500. Assume further that the equipment is purchased on October 2 and that the yearly accounting period ends on December 31. Depreciation must be recorded for three months, October through December, or 3/12 of a year. This factor is applied to the calculated depreciation for the

entire year. The three months' depreciation under the straight-line method is calculated as follows:

Solution:

Annual depreciation = $\frac{\text{Original cost} - \text{Estimated Salvage value}}{\text{Estimated useful life}}$

$$= \frac{\text{Br. } 5000 - \text{Br. } 500}{5 \text{ years}} = \text{Birr } 900$$

Depreciation for partial year (Oct - Dec. 31) is therefore, $\text{Br. } 900 \times 3/12$
= Br. 225

If the company used the double declining balance method on the above equipment, the depreciation on the asset would be: $\text{Br. } 5000 \times 40/100 \times 3/12$, = Br. 500, depr. For three months,

If the company used the sum-of-years-digits method, the depreciation on the asset would be:

Birr $(5000 - 500) \times 5/15 \times 3/12 = \text{Birr } \underline{375}$, and the depreciation for the second year would be:

$$(5000 - 500) \times 5/15 \times 9/12 = \text{Br. } 1125$$

$$(5000 - 500) \times 4/15 \times 3/12 = \underline{\quad 300 \quad}$$

Therefore, total 2nd year depreciation Br. 1425

NB. In this specific example depreciation was recorded from the beginning of October. If the equipment had been purchased on October 16, or thereafter, depreciation would be calculated beginning November 1, as if the equipment were purchased on that date.

4.11 CAPITAL AND REVENUE EXPENDITURES

Capital Expenditures- are expenditures that improve the operating efficiency (or capacity) or costs incurred to achieve greater future benefits.

In addition to the acquisition of plant assets, capital expenditures included additions and betterments.

An addition is an enlargement to the physical layout of a plant asset. Suppose for example, if a new wing is added to a building, the benefits from the expenditure will be received over several years, and the amount paid for it should be debited to the asset account.

A betterment, on the other hand, is an improvement that does not add to the physical layout of the asset. Installation of an air conditioning system is an example of betterment, Replacement of a concrete floor for a wooden floor is also betterment that will provide benefits over a number of years, so its cost should be charged (debited) to an asset account.

Another types of capital expenditures include **extraordinary repairs**. Extraordinary repairs are repairs of amore significant nature. They affect the estimated residual value or estimated useful life of an asset. For example, a boiler for heating a building may be given a complete overhaul, at a cost of Br. 3000 that will prolong its economic life by 5 years.

Extraordinary repairs are recorded by debiting the accumulated depreciation account, under the assumption that some of the depreciation previously recorded has now been eliminated. The effect of this reduction in the accumulated depreciation account is to increase the book value of the asset by the cost of the extraordinary repair. As a result, the new book value of the asset should be depreciated over the new estimated useful life.

Illustration - 7

Suppose for example, a machine costing Br. 35,000 had no estimated residual value and an original estimated useful life of ten years, has been depreciated for 7 years. At the very beginning of the 8th year, the machine was given a major overhaul costing Br. 3000. This expenditure extended the useful life of the machine 3 years beyond the original estimate. The computation of the new book value and the entry for the extraordinary repair would be as follows:

Solution

To record extraordinary repair

Jan. 4. Accumulated Depreciation – Machinery.....	3000.00
Cash	3000.00
<i>Extraordinary repair to machinery</i>	

The revised annual depreciation for each of the six years remaining in the machine's useful life would be calculated as follows:

Cost of Machine.....	Birr 35,000
Accum. Depreciation before extraordinary repair	Br.
24,500	
Less: extraordinary repair (Debited to Accum. Depr.)....	<u>3000</u>
	<u>21,500</u>
Book value (carrying value) after extraordinary repair...	
Br.13,500	
Revised Annual periodic depreciation= $\frac{13500}{6 \text{ years}}$	<u>2,250</u>

Revenue expenditures

Revenue expenditures are expenditures incurred in order to maintain the normal operating efficiency of the asset.

Among the more usual kinds of revenue expenditures for plant asset are the repairs, maintenance, lubrication, Cleaning and inspection necessary to keep an asset in good working condition.

Ordinary repairs are expenditures that are necessary to keep an asset in good operating conditions. Trucks must have tune-ups, their tires and batteries must be replaced regularly, and other routine repairs must be made. Offices and halls must be painted regularly, and broken tiles or woodwork must be replaced. Such repairs benefits only the current period and therefore must be charged against the revenue in the current fiscal period.

Check Your Progress Exercise -5

- 1) Discuss the difference between ordinary repairs and extraordinary repairs?

4.12 SUMMARY

Almost all business enterprises of any size or activity use assets of a durable nature. Such assets, commonly refereed to as property, plant, and equipment, plant assets, or fixed assets, support the operating activities in every business organization, instead of being a part of the operating activities. Such assets include land, building, and equipments (machinery, furniture, tools).

The major characteristics of plant (or fixed) assets are:

- 1) they are acquired for use in the operations of a business, they are not intended for resale purpose. If the business holds them for resale they are categorized under the caption 'Inventories', in the balance sheet.
- 2) they are long-term in nature and usually subject to depreciation long-term assets are capable of repeated usage in the operating activities of the business, and

3) they possess physical features.

One of the big issues in accounting for plant assets is the determination of cost. The acquisition cost of a plant asset includes the cash or cash equivalent purchase price of obtaining the asset and bringing it to the location and condition necessary for its intended use.

Cost of Land: Includes the negotiated cash price plus other costs such as the cost of land surveys, legal fees, broker's commissions, title fees, cost of preparing the land to build on, and the cost of tearing-down (or razing) old building, and any expenditures associated with the acquisition of land that are necessary to get the land ready for its intended use.

Cost of buildings: Includes the purchase price plus all repairs and other expenses required to put it in a usable condition. When a business constructs a new building, the cost includes all reasonable and necessary expenditures, such as materials, labor, part of the overhead and other indirect costs, engineers and architects' fees, insurance during construction period, lawyers fees, and building permits.

Cost of Equipments: Includes the invoice price, transportation and handling costs, insurance on the equipment while in transit, assembling and installation costs, and costs of conducting test (trial) runs.

As plant assets are used in the operation of a business, their value to provide services decreases through usage and the passage of time. This cost allocation of plant asset through usage and the passage of time are called **depreciation**.

Depreciation is frequently misunderstood. The term doesn't refer to the decrease in market value of an asset overtime; no it is a process of valuation. Instead, the term is used to describe the gradual conversion of the cost of the asset into an expense account. Four factors affect the computation of depreciation. They are:

- (1) cost, (2) residual value, (3) depreciable cost, and (4) estimated useful life of the asset. Business may be different methods to compute depreciation

The most common methods of computing depreciation for plant assets are (1) straight line method, (2) production method, (3) double-declining balance method, and (4) sum-of-years-digits method.

After the determination of periodic depreciation, the amount of depreciation expense should be recorded each fiscal period by debiting the depreciation expense and crediting a contra asset account called Accumulated Depreciation. The use of this contra asset account permits the original cost to remain unchanged in the plant asset account.

Sometimes each of the four depreciation methods may not be appropriated because the assets involved have unique characteristics or the nature of the industry requires that a special depreciation method be used. Of these methods, the group and composite methods are often used by business enterprises.

When a plant asset is acquired, depreciation rates are carefully determined based on past experience with similar assets and other relevant information, however, it may be necessary to revise the estimated economic life and that of salvage value during the life of the asset. Unexpected physical deterioration or unforeseen obsolescence may make the useful life of the asset less than originally estimated. Good maintenance procedures, revision of operating procedures, or similar improvements may prolong the life of the asset beyond the original estimate.

After plant assets are acquired and ready for use, additional costs are incurred that range from ordinary repairs to significant additions. The major problem is allocating these costs to the proper time periods. These

costs are divided into two major categories: capital, and revenue expenditures.

Capital expenditures are expenditures that improves the operating capacity (or efficiency) or expenditure that increases the useful life of the asset beyond the original estimate. The most common capital expenditures are (1) additions, (2) betterments, and (3) extraordinary repairs.

Revenue expenditures, on the other hand, are expenditures incurred in order to maintain the normal operating efficiency of the asset. The most usual kinds of revenue expenditures for a plant asset are the repairs, maintenance, lubrication, cleaning, and inspection necessary to keep an asset in good working condition. Such expenditures benefits only the current period and therefore must be charged against the revenue in the current fiscal period.

4.13 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise - 1

1. The justification for using the production method is that, it assumes that depreciation is a function of use or productivity instead of the passage of time. Moreover, under the production method there is a direct relation between the amounts of depreciation each year and the units of output or use.

Check Your Progress Exercise - 2

1. There is an easy means of computing the denominate of the fraction.

$$\text{It is: } \frac{n(n+1)}{2} = \frac{25(25+1)}{2} = 325$$

Check Your Progress Exercise - 3

(1) Where loss of services is a result of activity or productivity, the production method will be best match costs and revenues. And, when the units of output or use that is used to measure estimated useful life for each asset is reasonably determined.

(2) The major limitation (or drawback) of the production method is that it is not appropriate in situations in which depreciation is a function of time instead of activity. For example a building is subject to a great deal of steady deterioration from the elements (time) regardless of its use. Another drawback in using the production method is that an estimate of units of output or service hours received is often difficult to determine.

Check Your Progress Exercise - 4

$$1. \text{ Annual depreciation} = \frac{\text{original cost} - \text{salvage value}}{\text{Estimated life}}$$

Since the asset had been placed in service after two months had been elapsed, only depreciation for 10 months will be recognized.

$$\text{Therefore, } \frac{10}{2} \times 300 = \text{Br. } 250.00$$

Depreciation Expense..... 250.00

Accumulated Depreciation.....250.00

Check Your Progress Exercise - 5

1. Ordinary repairs: are expenditures made to maintain plant assets in normal operating condition, they are charged to an expense account in the period in which they are incurred on the basis that is benefits on one accounting period. Ordinary repairs affect the expenses of one accounting period only.

Extra ordinary repairs - on the other hand, are repairs of a more significant nature. They affect the estimated residual value or estimated useful life of the asset. Extraordinary repairs increase the life of the asset beyond the original estimate. Hence, it benefits the operating activity of

the business for several years. Extraordinary repairs should be debited to the Accumulated Depreciation account instead of debiting to an expense account.

4.14 MODEL EXAMINATION QUESTIONS

TYPE A: Answer the following questions:

1. Explain the meaning of deprecation
2. Describe in detail the major characteristics of plant (fixed) assets.
3. Briefly describe the factors that affect the computation of depreciation.
4. Distinguish between an addition to plant assets and a betterment.
5. What accounting treatment is normally given to the following items in accounting for plant assets?
 - a) Additions
 - b) Extraordinary (major) repairs.
 - c) Betterments.

TYPE B: For each of the following questions choose the best answer from the given alternatives.

1. Which of the following statements best describe the purpose of accounting for depreciation?
 - A) Depreciation is an attempt to measure the decrease in market value of an asset during a period of time.
 - B) Depreciation is the allocation of the cost of a natural resource over its useful life as it is used up.
 - C) Depreciation is the allocation of an equal amount of cost of a tangible asset to each year of its economic life.
 - D) Depreciation is the allocation of the cost of a tangible asset over its useful life.
 - E) None of the above

1. Which of the following expenditures incurred in connection with the acquisition of equipment is not a proper charge to the asset account?
 - A) Freight or transportation costs.
 - B) Cost of test runs to ready the machine for operation
 - C) Taxes and tariffs
 - D) Cost of vandalism
 - E) B and D
2. If the Double-declining depreciations rate of a plant asset is 50%, then its estimated life will be:
 - A) 50 years.
 - B) 10 years
 - C) 5 years
 - D) 4 years
 - E) None of the above
3. Which of the following methods will yield the highest depreciation expense during the first year of an asset's life?
 - A) Straight line method
 - B) Sum-of-years-digits method
 - C) Double-declining balance method
 - D) All of the above
 - E) None of the above
4. If the adjusting entry to record depreciation expense was overlooked, then:
 - A) Total assets will be understated
 - B) Liabilities would be overstated
 - C) Owner's capital would be overstated
 - D) Net income would be overstated
 - E) C and D

TYPE C: Work out the following questions:

On October 5, 2001, NOON C. acquired a new machine at a cost of Birr 250,000. the machine has a useful life of 5 years and scrape value of Br. 10,000. it is estimated that the equipment will produce 2,000,000 units of products throughout its life. The equipment produced 95,000 units and 300,000 units of products during the fiscal periods ending December 31, 2001 and December 31,2001 respectively. On the basis of the above date, compute deprecation expense to be recorded on Dec. 31, 2002.

- 1) Under the units of production method.
- 2) Under the declining-balance method.
- 3) Under the sum-of-years-digits method
- 4) Under the straight-line method.

4.15 RECOMMENDED (REFERENCE) BOOKS

- | | | |
|----------------------------------|---|--|
| 1. Fees and Warren | : | Principles of Accounting, 16 th Edition. |
| 2. Horngren, Sundem, and Elliot. | : | Introduction to Financial Accounting, 8 th Edition. |
| | | Pearson Educational Inc. New Delhi, 2002 |
| 3. Roger H. Hermanson, | : | |
| Jems D, Edwards and | : | Accounting principles 4 th Edition, |
| R.F Salmonson | | (1989) IRWIN Inc. |

4.16 GLOSSARY

1. **Accumulated Depreciation:** The cumulative sum of all depreciation recognized since the date of acquisition of the particular assets.

2. **Book Value, (net book value):** The balance of an account shown on the book, net of any contra accounts. For example the book value of equipment is its acquisition cost minus accumulated depreciation.
3. **Capitalized:** A cost that is added to an asset account, as distinguished from being expensed immediately.
4. **Contra account:** A separate but related account that offsets or is a deduction from a companion account. An example is accumulated depreciation.
5. **Depreciable Value:** The amount of the acquisition cost to be allocated as depreciation over the total useful life of an asset. It is the difference between the total acquisition cost and the predicted residual value.

UNIT 5. DISPOSAL OF PLANT ASSETS

Contents

- 5.0 Aims and Objectives
- 5.1 Introduction
- 5.2 Disposal of Plant Assets
 - 5.2.1 Recording Discarding of a plant asset
 - 5.2.2 Recording The Sale of Plant Assets
 - 5.2.3 Recording Exchanges of Plant Assets
- 5.3 Accounting for Intangible Assets and Natural Resources
- 5.4 Summary
- 5.5 Answer to Check Your Progress
- 5.6 Model Examination Questions
- 5.7 Reference Books
- 5.8 Glossary

5.0 AIMS AND OBJECTIVES

This unit aims at discussing the meaning of disposing of plant assets, the different ways of disposing plant assets, and the accounting procedures involved in recording transactions relating to the discarding sale and exchange of plant or (fixed) assets.

After going through this unit, you will be able to;

- understand the concept of disposing of plant assets.
- examine the different ways of disposing of plant assets.
- analyze and record the transactions involving the discarding, sale, and exchange of plant assets.
- differentiate accounting for financial reporting from accounting for income tax with respect of exchange of plant assets.

5.1 INTRODUCTION

So far we have seen how to account for property, plant, and equipment assets, from calculating acquisitions cost to depreciating this cost up to the end of the asset's useful life. Plant assets, such as equipment, delivery trucks, or machineries cannot be used forever. The assets may wear out or the business may replace them with newer model. When a plant asset is no longer useful to a business the asset may be disposed of either through discarding, sale, or traded-in with similar) or dissimilar) assets. This chapter therefore, is presented this concept in detail.

5.2 DISPOSALS OF PLANT ASSETS

A plant asset rarely lasts exactly as long as its estimated life. If it lasts longer than its estimated life, it is not depreciated past the point at which its carrying value equals its residual value. The purpose of depreciation is to spread the depreciable cost of the asset over the economic life of the asset. Thus, the total accumulated depreciation should never exceed the total depreciable cost. If the asset is still used in the business beyond the end of its estimated life, its cost and accumulated depreciation remain in the ledger accounts. Proper records will thus be available for maintaining control over plant assets. If the residual value is zero, the book value of a fully depreciated asset is zero until the asset is disposed off. If such an asset is discarded, no gain or loss results. A plant asset may be disposed by:

(1) Discarding it as worthless; (2) Selling it; or (3) Trading it in on a new asset

5.2.1 Recording Discarding of a Plant Asset

If a plant asset is of no further use to the business and cannot be sold or traded, then the plant asset is discarded. If the asset has no book value. (i.e., if it is fully depreciated), the plant asset account is credited for the amount of the original cost of the item being discarded. At the same time, the accumulated depreciation account is debited for the amount of the

total accumulated depreciation of the item being discarded. In this case neither gain nor loss is realized. On the other hand, if a plant asset has a book value (if not fully depreciated) at the time it is discarded, the business incurs a loss.

Illustration - 1

Suppose for example, on July 5, year 5, equipment that was acquired On Jan 10, year 1, at a cost of Br. 11,000, is discarded as worthless. The discarded equipment has a carrying value of Br. 2000 at the time of disposal. The carrying value is computed as the difference between the cost of asset Br. 11,000 and accumulated depreciation, Br. 9000. A loss equal to the carrying value should be recorded when the equipment is discarded.

Solution:

The journal entry required to discard the plant asset as of July 5, year 5, is:

Year 5

July 5. Accumulated Deprecation, Equipment 9000.00

Loss on disposal of plant Asset.....2000.00

Equipment 11000.00

Discarding Equipment no longer used in the business.

5.2.2 Recording the Sale of Plant Asset

The entry to record the sale of an asset for cash is similar to the one illustrated above except that the receipt of cash should also be recorded. The following entries show how to record the sale of equipment under three assumptions about the selling price. In the first case, the Br. 2000 cash received is exactly equal to the book value of the equipment (which is equal to Br. 2000).

Case 1. Sold at an amount equal to Book value, Br. 2000, no gain or loss results.

Year 5

July 5. Cash	2000.00
Accumulated Depreciation, Equip.....	9000.00
Equipment	
.....	11000.00

Sale of equipment at an amount equal to book value

Case 2. Sold at Br. 1500 cash; Loss of Br. 500, (BV = Br. 2000)

Year 5

July 5. Loss on sale of equipment.....	500.00
Accumulated Depreciation.....	9000.00
Cash	1500.00
Equipment.....	11000.00

Sale of equipment at less than the book value. Loss of Br. 500

Case 3. Sold at Br. 3000 cash; gain of Br. 1000, cash received through Sale less book value of the asset (Br. 3000 – Br. 2000)

Year 5

July 5.	
Cash	3000.00
Accumulated Depr, Equipment.....	9000.00
Equipment.....	11000.00
Gain on sale of plant asset.....	1000.00

*Sale of equipment at more than the book value; gain of Br. 1000,
(Br. 3000 – Br.2000) recorded*

5.2.3 Recording Exchange of Plant Assets

Businesses also dispose of plant assets by trading them in on the purchase of other plant assets. Exchanges may involve similar assets, such as an old machine traded-in on a newer model, or dissimilar assets, such as a machine traded-in on a truck. In either case, the purchase price is reduced by the amount of the trade-in allowance.

The basic accounting for exchanges of plant assets is similar to accounting for sales of plant assets for cash. If the trade-in allowance received is greater than the carrying value of the assets surrendered, there has been a gain. If the trade-in allowance is less than the carrying value, there has been a loss.

There are special rules for recognizing these gains and losses, depending on the nature of the assets exchanged.

Exchange	Losses	Gains
Recognized	Recognized	
<i>For Financial Reporting Purposes:</i>		
- Of similar assets..... - Yes.....No		
- Of Dissimilar assets..... - Yes	Yes.....	

For Income Tax purposes:

- Of similar assets..... No.....
- No
- Of dissimilar assets..... Yes.....
- Yes

Both Gains and Losses are recognized when a company exchanges dissimilar assets. Assets are dissimilar when they perform different functions; assets are similar when they perform the same function.

For financial reporting purposes, gains on exchanges of similar assets are not recognized because the earning lives of the asset surrendered are not considered to be completed.

When a company trades-in an older machine on a newer machine of the same type, the economic substance of the transaction is the same as that of a major renovation and upgrading of the older machine.

Accounting for exchange of similar assets is complicated by the fact that neither gains nor losses are recognized for income tax purposes.

Loss Recognized on the Exchange

A loss is recognized for financial reporting purposes on all exchange in which a material loss occurs.

Illustration-2

To illustrate the recognition of a loss, assume that the business exchange a machine with a cost of Br. 11,000, and accumulated depreciation of Br. 9000 for a newer more modern machine on the following terms:

Cost of new machine	Birr 12000.
Trade-in Allowance for old machine.....	<u>(1500)</u>
Cash payment required (Boot).....	Birr <u>10500.</u>

Solution

In the illustration above, the trade-in allowance (1500) is less than the carrying value (Br. 2000) of the old machine. The loss on the exchange is Br. 500, (Br. 2000 – Br. 1500). Therefore, the journal entry required to record the exchange of assets would be as follows:

Year 5.

July 5. Equipment (New).....	120,00.00
Accum. Depreciation-Equip.....	9,000.00

Loss on Exchange of plant assets.....	500.00
Equipment (old).....	11,000.00
Cash.....	10,500.00

Check Your Progress Exercise -1

1. What is the justification for the non-recognition of gains? That results from the exchange of similar assets?

.....

.....

.....

Loss Not Recognized on the Exchange

In the previous illustration, in which a loss was recognized, the new asset was recorded at the purchase price of Br. 12000 and a loss of Br. 500 was recognized. If the transaction is for similar assets and is to be recorded for income tax purpose, the loss should not be recognized. In this case, the cost basis of the new asset will reflect the effect of the unrecorded loss. The cost basis for the new asset, therefore, is computed by adding the cash payment to the carrying value of the old asset:

Carrying (Book) value of old Equipment.....	Birr
2,000.00	
Cash paid (Boot given).....	
<u>10,500.00</u>	
Cost-basis of new Equipment	Birr
<u>12,500.00</u>	

Note that no loss is recognized in the entry to record this transaction.

Year 5.

July 5. Equipment (New).....	12,500.00
Accumulated Depreciation.....	9,000.00
Equipment (old).....	11,000.00

Cash..... 10,500.00
To record exchange of Equipments - cost of old Equipments and its related Accumulated Depreciation removed from the accounts; new equipment recorded at amount equal to book value of old equipment plus boot given.

NB. The new equipment is recorded (reported) at a purchase price of Br. 12000 plus the unrecognized loss of Br. 500. the post postponement of the loss. Since depreciation of the new equipment will be computed based on a cost of Br. 12500 instead of Br. 12000, the “unrecognized” loss results in more depreciation each year on a new equipment than the loss had been recognized.

Gain Recognized on the Exchange

Gains on exchanges are recognized for financial reporting purposes when dissimilar assets are exchanged. To illustrate the recognition of a gain, assume the following terms in which the machines being exchanged serve different functions:

Price of new machine.....Birr 12,000.00
 Trade-in Allowance for old machine.....(3000)
 Cash payment required (Boot given).....Birr 9,000.00

Here the trade-in allowance (Br. 3000) exceeds the carrying value (Br. 2000) of the old machine by Br. 1000. thus, there is a gain on the exchange, if the trade-in allowance represents the fair mark value of the old machine. Assuming that this condition is true, the entry to record the transaction is as follows:

Years 5

July 5. Equipment (New).....12,000

Accumulated Depreciation.....	9,000
Equipment (old).....	11,000
Cash	9,000
Gain on exchange of Equip.....	1,000
<i>To record the exchange of Equipments to remove cost of old equipment and the related accumulated depreciation, new equipment recorded at cost price; gain recognized.</i>	

Gain Not Recognized on the Exchange:

A gain on an exchange should not be recognized in the accounting records if the assets perform similar functions. The cost basis for the new equipment must indicate the effect of the unrecorded gain. This cost basis is computed by adding the cash payment to the carrying value of the old asset:

Carrying value of old equipment	Birr 2,000.00
Cash paid (Boot Given).....	<u>9,000.00</u>
Cost basis of new Equipment.....	Birr <u>11,000.00</u>

The entry to record the transaction is as follows:

Year 5

July 5. Equipment (New).....	11,000.00
Accumulated Depreciation.....	9,000.00
Equipment (old).....	11,000.00
Cash.....	9,000.00

To record exchange of Equipment to remove the cost of old equipment and the related accum. depr. of old assets; new equipment recorded at a cost equal to BV of old asset plus cash paid.

As with the no recognition of losses, the no recognition of the gain on exchanges is, in effect, a postponement of the gain. Since depreciation will be computed on the cost basis of Br. 11,000, the “unrecognized” gain is reflected in less depreciation each year on new equipment than if the gain had been recognized.

Illustrative Problem:

ABC Corporation acquired machine X for Br. 84,000 on January 10, 1999. Machine X had an estimated useful life of six years with no salvaged value. The machine was depreciated on the basis of Sum-of-the-years-digits’ method. On May 5, 2002, machine X was exchanged for another similar machine Y. The new machine had a cash price of Br. 95,000. In addition to Machine X, cash of Br. 25,000 and three notes for Br. 45,000 was given up in the exchange. Machine Y has an estimated useful life of seven years and salvage value of Br. 1000. Machine Y is to be depreciated using the straight-line method. The corporation had the experience of recording the exchange for financial reporting purposes.

Required: With reference to the above information:

1. Compute the cost-basis for Machine Y in line with corporation experience.
2. Pass the journal entry made by ABC Corporation to record the exchange of the machine.
3. Compute the depreciation expense to be made on Machine Y for 2002 fiscal year ending Dec. 31 for financial reporting purpose.
4. Compute the cost-basis of Machine Y for income tax regulation.
5. Pass the journal entry to record the exchange for purposes of income tax regulation.

Solution to Illustrative Problem:

1. Depreciation for the year 1999, on Machine X is:

$$\frac{n(n + 1)}{2} = \frac{6(6 + 1)}{2} = 21$$

$$\frac{6}{21} \times 84,000 = \dots\dots\dots 24,000.00$$

- Depreciation for 2000, $5/2 \times 84,000$
20,000.00
 - Depreciation for 2001, $4/21 \times 84,000$
16,000.00
 - Depreciation for 2002 (for four months only) $3/12 \times 84,000 \times 4/12$..
4,000.00
- Total Accumulated Depreciation as of May 5, 2002, Br.
64,000.00

Old Equipment Traded-In (Machine X)

Cost.....Birr 84,000
Accumulated Depreciation, May 5, 2002.....64,000
Book Value..... Birr 20,000

New Equipment Traded-In (Machine Y)

Purchase (List) price.....Birr
95,000

♦ Trade-in Allowance on old Machine.....
25,000

Boot Given (cash + Notes)..... Br
70,000

Therefore, the cost-basis of Machine Y can be obtained by adding the Book Value and the amount of Boot given which is ; Br. 20,000 + 70,000 = Br. 90,000. There is unrecognized gain on the exchange.

(2) 2002

May 5. Machine Y.....90,000.00

Accumulated Depreciation	64,000.00
Machine	
X.....	84,000.00
Cash.....	25,000.00
Notes	
payable.....	45,000.00

3. Depreciation Expense on Machine Y for year ending Dec. 31,2002 by the straight line method is:

Ann. Depr. = Br. $\frac{90,000.00 - 10,000.00}{7 \text{ Years}}$ = Br. 12714.29, since the Machine is employed in

service after four months had been elapsed, the depreciation for 8 months, (May through

Dec. 31) would be:

$$\text{Br. } 12714.29 \times \frac{8}{12} = \underline{\text{Br. } 8476.20}$$

4. The cost-basis for Machine Y for income tax regulation is:

Since gains and losses resulting from the exchange of similar assets are not recognized for income tax purposes, the cost basis of the Machine is the same that is Br. 90,000.

5. Journal entry to record the exchange of machine Y for purposes of income tax regulation would be:

2002

May 5. Machine Y.....	90,000
Accumulated Depreciation, Machine X.....	64,000
Machine X.....	84,000
Cash	25,000
Notes Payable.....	45,000

5.3 ACCOUNTING FOR INTANGIBLE ASSETS AND NATURAL RESOURCES

Intangible Assets: are long-term assets that do not have physical substance and in most cases relate to legal rights or advantages held.

Intangible assets include patents, copyrights, trademarks, franchises, organization costs, leaseholds, leasehold improvements, and goodwill. The allocation of intangible assets to the periods they benefits is called ***amortization.***

Intangible assets are accounted for at acquisition cost, that is, the amount paid for them. Some intangible assets such as goodwill and trademarks may be acquired at little or no cost. Even though they may have great value and be needed for profitable operations they should not appear on the balance sheet unless they have been purchased from another party at a price established in the market place.

The, Accounting Principles Board (APB) has decided that a company should record as assets the costs of Intangible assets acquired from others. However, the company should record as expenses the cost of developing intangible assets. Also, intangible assets that have a determinable useful life such as patents, copyrights, and leaseholds, should be written off through periodic amortization over that useful life in much the same way that plant assets are depreciated.

Even though some intangible assets, such as goodwill and trademarks, have no measurable limit on their lives, they should also be amortized over a reasonable length of time (not to exceed forty years).

Illustration - 3

Assume that on Jan 2,2002 MOHA Soft Drink Bottling company purchased a patent on a unique bottle cap for Br. 54,000.

The entry to record the patent would be as follows:

2002

Jan 2. Patent.....54,000

Cash.....54,000

To record the purchase of Bottle cap patent

Assume that MOHA's management determines that, although the patent for the bottle cap will last for seventeen years, the product using the cap will be sold only for the next six years. The entry to record the annual amortization would be as follows:

Amortization Expense.....9,000.00

Patent.....9,000.00

To record annual amortization of patent (Br. 54000/ 6 years)

Note that the patent account is reduced directly by the amount of the amortization expense. This is in contrast to other long-term asset accounts in which depreciation or depletion is accumulated in a separate contra account.

If the patent becomes worthless before it is fully amortized, the remaining carrying value is written off as a loss. For instance, assume that after the first two years MOHA soft Drink Bottling Company's chief competitor's offers a bottle with a new type of cap that makes MOHA's cap obsolete. The entry to record the loss is:

Loss on patent.....36,000.00

Patent.....36,000.00

To record the loss resulting from patents becoming worthless.

Depletion of Natural Resources

We now turn our attention to another group of long-lived assets natural resources, such as minerals, oil, and timber or lumber. These natural resources are extracted from the earth.

Depletion is the accounting measure used to allocate the acquisition cost of natural resources. Depletion differs from depreciation because depletion focuses specifically on the physical use and exhaustion of the natural resources, while depreciation focuses more broadly on any reduction of the economic value of a plant or fixed asset. The costs of natural resources are usually classified as long-terms assets.

Depletion expense is the measure of that portion of long-term assets that is used up in a particular period.

Illustration - 4

Suppose for example, MIDROC Construction has acquired the right to use 10,000 acres of land in Kibre-Mengist territory to mine for gold at a total cost of, Br. 10,000.000. The Company estimated that the mine will; provide approximately 500,000 grams of gold. The depletion rate established is computed in the following manner.

$$\frac{\text{Total cost} - \text{Salvage value}}{\text{Total estimated units available}} = \text{Depletion cost per unit.}$$

$$\frac{\text{Br. 10,000,000}}{500,000 \text{ units}} = \text{Br. 20 per gram}$$

If 100,000 grams are extracted in the first year, then the depletion for the year is 2000.000 (1000,000 x Br. 20.00). The entry to record the depletion is therefore:

Depletion Expense.....	2,000,000
Accumulated Depletion.....	2,000,000

Check Your Progress Exercise - 2

1. Distinguish between amortization and depletion.

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.....
.....

5.4. SUMMARY

Plant assets, such as equipments, trucks, or machineries, cannot be used forever. The assets may wear out or the business may replace them with newer models. When a fixed asset is no longer useful to a business, the asset may be disposed of by: (1) discarding it as worthless; (2) selling it; or (3) trading it in on a new asset.

If a plant asset is of no further use to the business and cannot be sold or traded, then the plant asset is discarded. If the asset is fully depreciated, no loss or gain is recognized. Otherwise, if the asset is not fully depreciated at the time of disposal, the business incurs a loss.

Another means of disposing of a plant asset is sale of plant asset. While selling plant assets, if the selling price exceeds the book (carrying) value of the asset, there is a gain, and the gain should be reported in the income statement for the period under other income section because it results from non-operating activities. On the other hand, if the cash received through sales of plant asset is less than the book (carrying) value of the asset sold, there is a loss, and this loss is reported among the other expense section on the income statement. If the amount of cash received through sale of a plant asset is exactly equal to the book value of the asset, neither gain nor loss is realized.

Business also disposes of plant assets by trading them in on the purchase of other plant assets. Exchanges may involve similar assets that serve the same function, or it may involve dissimilar assets that serve different functions.

The basic accounting for exchanges of plant assets is similar to accounting for sales of plant assets for cash. If the trade-in allowance received on old asset is greater than the carrying (book) value of the asset surrendered, there has been a gain. In contrast, if the trade-in allowance is less than the carrying (book) value, there has been a loss.

There are special rules for recognizing these gains and losses, depending on the nature of the assets exchanged.

If the assets exchanged are dissimilar (perform different functions), both gains and losses are recognized. If the assets exchanged are similar (perform the same function), loss on exchanges is recognized, but if the exchange results in a gain, the gain should not be recognized for financial reporting purposes.

For income tax purposes, neither gain nor loss is recognized from the exchange of similar assets. However, income tax law allows the recognition of both gains and losses from the exchange of dissimilar assets.

The chapter also discussed accounting for intangible assets and natural resources. Intangible assets are long-term assets without a physical substance, and in most cases related to legal rights or advantages held. Intangible assets include patents, copyrights, trademarks, franchising, organization costs, leaseholds, leasehold improvements, and goodwill. The cost allocation of intangible assets to the periods they benefit is called amortization.

Natural resources are another group of long-term assets that are extracted from the earth such as minerals, oils, (or petroleum), and timber (or lumber). The periodic cost allocation of these natural resources is referred to as **depletion**.

Unlike plant assets, natural resources are consumed physically over the period of use and do not maintain their physical characteristics.

5.5 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. Gains on exchanges of similar assets are not recognized for financial reporting purposes because the earning lives of the asset surrendered are not considered to be completed.

Check Your Progress Exercise 2

1. Amortization is the periodic cost allocation of intangible assets to the periods that benefit from the assets.

Whereas, depletion is the process of allocating the cost of natural resources to the periods in which the resources are used.

5.6 MODEL EXAMINATION QUESTIONS

TYPE A - Answer the Following Questions:

1. Explain the accounting procedures for discarding of plant assets.
2. Explain the entries required in selling a plant asset for cash.
3. Distinguish between amortization and depletion.
4. What is meant by Intangible Asset?

TYPE B - Choose the best answer for the following questions:

1. If plant asset is retired before it is fully depreciated, and no salvage value or scrap value is received.
 - A) a gain on disposal will be recorded
 - B) Loss on disposal will be recorded
 - C) Neither gain nor loss on disposal will be recorded
 - D) All of the above.
2. One of the following is not an example of intangible assets.
 - A) patents
 - B) Franchise
 - C) Trademarks

D) Organization cost E) None

3. A plant asset priced at Br. 100,000 is acquired by trade-in a similar asset that has a book value of Br. 25,000. Assuming that the trade-in allowance is Br. 30,000 and that Br. 70,000 cash is paid for the new asset. What is the cost basis for the new assets for financial reporting purpose?

A) Br. 100,000 B) Br. 70,000 C) Br. 30,000
D) Br. 125,000 E) Non

4. Good will in the amount of Br. 60,000 was purchased on January 15, the first month of the fiscal year. It is decided to amortize over the maximum period allowable. The current amortization expense would be:

A) Br. 5000 C) Br. 1,500
B) Br. 6000 D) Br. 10,000 E) None

TYPE C- Work out the following problem:

1. Sold a truck for Br. 950.00. The truck had been purchased two years ago on January 2 for Br. 2300.00. The amount of depreciation is Br. 400.00 a year. Accumulated depreciation for that amount was recorded at the end of the two previous years.
- A) Record the depreciation for the current year to June 30.
B) Record the sale of the truck.
2. Discarded office equipments for which there was no further use and which could not be sold. The office equipment cost Br. 160.00 and had a book value of Br. 20.00 at the time was discarded.

5.7 RECOMMENDED (REFERENCE) BOOKS

1. Fees and Warren : Principles of Accounting, 16 Edition

2. Horngren, Sundem : Introduction to Financial Accounting and Elliot
8th Edition, (2002) Parson Education Inc.

3. Roger H. Hermanson, : Accounting Principles, 4th
Edition ,1989,

Jems D, Edwards and: IRWIN Inc.

4. R.F. Salmonson : Principles of Accounting , 14th Edition.

5. Kieso and Weygandt: Intermediate Accounting, 9th Edition,
(998) John Wiley & sons ,Inc.

5.8 GLOSSARY

1. Amortization: When referring to long-lived assets, it usually means the allocation of the costs of intangible assets to the periods that benefits from these intangible assets.

2. APB Opinions: A series of thirty-one opinions of the accounting principles Board, many of which are still the “accounting law of the land.”

3. Depletion: The process of allocating the cost of natural resources to the periods in which the resources are used.

4. Franchises (Licenses): Privileges granted by a government, manufacturer, or distributor to sell a product or service in accordance with specified conditions.

5. Goodwill: The excess of the cost of an acquired company over the sum of the fair market value of its identifiable individual assets less the liability.

6. Leasehold: The right to use a fixed asset for a specified period of time, typically beyond one year.

7. Leasehold Improvement: Investments by a lessee in items that are not permitted to be removed from the premises

when a lease expires, such as installation of new fixtures, panels, walls and air-condition equipment.

8. Patents: Granted by the federal government to an invent bestowing (in the united states) the exclusive right for 17 years to produce and sell the in invention.

9. Trademarks: Distinctive identification of a manufactured product or of a service taking the form of a name, a sign, a slogan, a logo, or an emblem.

UNIT 6. ACCOUNTING SYSTEMS FOR PAYROLL AND PAYROLL TAXES

Contents

- 6.0 Aims and Objectives
- 6.1 Introduction
- 6.2 Importance of Payroll Accounting
- 6.3 Definitions of Payroll Related Terms
- 6.4 Possible Components of A Payroll Register
- 6.5 Major Activities Involved In Accounting For Payroll
- 6.6 Illustration Of A Payroll Register
- 6.7 Summary
- 6.8 Answer to Check Your Progress Questions
- 6.9 Model Examination Questions
- 6.10 Glossary

6.0 AIMS AND OBJECTIVES

This unit aims at discussing the accounting for payroll and payroll tax liabilities. The techniques and procedures used in computing personal income tax, pension contributions, and other deductions are discussed in detail. Also, the journal entries and other records necessary in accounting for payroll will be explained and illustrated based on examples. After reading and covered this unit you would be able to:

- understand the importance of payroll accounting
- define payroll related terms
- describe the components of a payroll register
- calculate income taxes, pension contribution and other deductions and net pay
- record journal entries related to payroll and payroll taxes
- prepare a payroll register

6.1 INTRODUCTION

In the previous chapter you have discussed the basic accounting principles and practices that are useful in accounting for the acquisition, use, and disposal of plant assets, as well **as the accounting for intangible assets and natural resources have also been discussed briefly.**

In this chapter you will be acquainted with the basics of accounting for payroll and payroll taxes. 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 safeguard to ensure that payments are in accord with management's general plans and its specific authorizations.

All employees of an organization expect and are entitled to receive their remuneration at regular intervals following the close of each payroll period. Regardless of the number of employees and the difficulties in computing the amounts to be paid, the payroll system must be designed to process the necessary data quickly and assure payment of the correct amount to each employee.

The system must also provide adequate safeguards against unauthorized payments to employees and other misappropriations of funds.

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

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

Here, in this chapter, you are going to learn intensely and worked through the major concepts that are common to most payroll systems such as the employee's earnings record, payroll sheet (or register), and journal entries related to payroll. Each of these concepts is illustrated and discussed by taking into account the current tax law of the country. As much as possible the chapter attempts to give you adequate knowledge about payroll systems in Ethiopia, however, if you come across any confusion or difficulties you can consult the authorities in the Ministry of Finance or Inland Revenue Administration in your locality, or refer the various proclamations especially; Proclamation No. 286 / 2002, the council of ministers regulation No. 78 / 2002. And Article 33 or proclamation No. 64 / 1975

6. 2 IMPORTANCE OF PAYROLL ACCOUNTING

Accounting for payroll is particularly important because:

- 1- Payroll often represents the largest expense that a company incurs.
- 2- Both federal and state governments require that detailed payroll records be kept and
- 3- Employees are sensitive to payroll errors or irregularities. To maintain good employee morale payroll must be paid on a timely and accurate basis.

6. 3 DEFINITION OF PAYROLL RELATED TERMS

1. Salary and Wages: Salary and wages are usually used interchangeably. However, the term wages 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 weekly.

On the other hand, salaries refers to payments to employees who render managerial, administrative or similar services, and they are usually paid to skilled labor on a monthly or yearly basis.

Both wages and salaries related to an 'employee' is an individual who works primarily to one organization and whose activities are under the direct supervision of employer.

A self-employed person on the other hand works (gives her services) on a fee basis to various firms.

2. The Pay Period: A pay period refers to the length of time covered by each payroll payment.

3 The Pay Day: The pay day- is the day on which wages or salaries are paid to employees. This is usually on the last day of the pay period.

4. A Payroll Register (sheet): 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.

5. Pay Check: A business can pay payroll by writing a check for the amount of the net pay. A check is prepared in the name of each employee and handed to employees. Alternatively a check for the total net pay can be prepared for employees to be paid by cash at the organization.

6. Gross Earnings: are taxes collected from the earnings of employees by the employer organization as per the regulations of the government. These have to be submitted (paid) to the government because the employer organization is only acting as an agent of the government in collecting these taxes from employees.

7. Payroll Deductions: are deductions from the gross earnings of an employee such as employment income taxes (with holding taxes), labor union dues, fines, credit association pays etc.

8. Net Pay: Net Pay is the earning of an employee after all deductions have been deducted. This is the take home pay amount collected by an employee on the payday.

6.4. POSSIBLE COMPONENTS OF A PAYROLL REGISTER

1. Employee Number

Number assigned to employees for identification purpose when a relatively large number of employees are involved in a payroll register.

2. Name of Employees

3.6. Earnings

Money earned by an employee from various sources,. This may include.

- a. **Basic Salary-** a flat monthly salary of an employee for carrying 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, like:
 - *Position allowance-* a monthly paid to an employee of earning a particular office responsibility.
 - *Housing allowance-* a monthly allowance given to cover housing costs of the individual employee when the employment

contract requires the employer to provide housing but the employer fails to do so.

- *Hardship allowance*- a sum of money given to an employee to compensate for an inconvenient circumstance caused by the employer. For instance, unexpected transfer to a different and distant work area or location.

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

- *Transportation (fuel) allowance*- a monthly allowance to an employee to cover cost of transportation up to her workplace if the employer has committed itself to provide transportation service.

C. Overtime Earning: Overtime work is the work performed by an employee beyond the regular working hours.

Overtime earnings are the amount paid to an employee for overtime work performed.

Article 33 of proclamation No. 64/1975 discussed the following about how overtime work should be paid:

A worker shall be entitled to the paid at a rate of

- i. One and one-quarter ($1 \frac{1}{4}$) times his ordinary hourly rate for overtime work performed before 10:00 P.M in the evening.
- ii. One and one half ($1 \frac{1}{2}$) times his ordinary hourly rate for overtime work performed between 10:00 P.M and six (6:00 A.M) in the morning.
- iii. two times the ordinary hourly rate for overtime work performed on weekly rest days
- iv. two and one half ($2 \frac{1}{2}$) times the ordinary hourly rate for overtime work performed on a public holiday.

All in all, the gross earnings of an employee may include the basic salary, allowance and overtime earnings.

Check Your Progress Exercise - 1

1. What term is frequently used to refer to the total amount paid to employees for a certain period?

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.....
.....

2. Distinguish between salaries and wages?

.....
.....
.....

3. An employee earns Br. 50 per hour with one and quarter ($1\frac{1}{4}$) times than regular hourly rate for all hours in excess of 40 per week. If the employee worked 50 hours during the current week, what was the gross earning for the week?

.....
.....
.....

4 Deduction: are subtractions made from the earnings of employees required by the government or permitted by the employee himself.

- a. **Employment Income Tax:** Every citizen is required to pay employee tax to the government in almost all countries. In Ethiopia also, income tax is charged on the gross earnings of the employee at the rates indicated under schedule A of the Proclamation N. 286/2002- Income tax proclamation.

The tax rates under schedule A are Presented below:

Employment Income		Income Tax rate
*In computing and withholding tax, the income tax proclamation dictates that income attributable to the month of Nehassie and Pagumen shall be aggregated		Exempt (Free from Tax)
2351	3550	25%
3551	5000	30%
Over 5,000		35%

Taxable income includes any payment or gains in cash or in kind received from employment by an individual, including income from former employment or otherwise or from prospective employment.

Check Your Progress Exercise - 2

- What is the total amount deducted as income tax for an employee who earns a basic monthly salary of Br. 1800, a monthly non taxable allowance of Br. 300, and an overtime earning of Br. 400?

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.....
.....

- Describe (i) Basic (regular) pay, (ii) Overtime pay

.....
.....
.....

Short cut to Income Tax Calculation

Employment Income (per month)		Income Tax Payable
Over Birr	To Birr	
0	150	No tax
151	650	(10% X EI) - 15
651	1400	(15% X EI) - 47.5
1401	2350	(20% X EI) - 117.5
2351	3550	(25% X EI) - 235
3551	5000	(30% X EI) - 412.5
Over 5,000		(35% X EI) - 662.5

EI = Employment Income or taxable income

15 = $(150 \times 0.1) - 0$

47.5 = $[(150 \times .15) - 0] + [(500 \times 0.15) - (500 \times 0.1)]$ and so forth

Proclamation No. 286/2002 states that the following are not taxable.

- 1- income from employment received by casual employees who are not regularly employed provided that they do not work for more than one month for the same employer in any twelve months period.
- 2- Pension contribution, provident fund and all forms of retirement benefits contributed by employers in an amount that doesn't exceed 15% of the monthly salary of the employee.
- 3- Payments made to---- (an employee) as a compensation or gratitude in relation to:
 - o personal injuries suffered by that person
 - o the death of another person

The council of ministers regulation No. 78/2002

Regulations issued pursuant to the income tax proclamation further exempts the following from income tax.

- 1- Amounts paid by employers to cover the actual cost of medical treatment of employees.
- 2- Allowance in view of means of transportation granted to employees under contract of employment, i.e., transportation allowance.
- 3- Hardship allowance
- 4- Amounts paid by employee in reimbursement of traveling expenses incurred on duty.

4.b. Pension Contribution

Permanent employees a governmental organization in Ethiopia is expected to pay or contribute 4% of their basic salary to the governments' pension trust fund.

This amount is withheld by the employer from each employee on every payroll and later be paid to the respective government body.

The employer is also expected to contribute towards this same fund 6% of the basic salary of every permanent government employee.

Therefore, the total contribution to the pension fund of the Ethiopian government is equal to 10% of the basic salary of all of its permanent employees.

That is, 4% comes from the employees and 6% comes from the employer.

This enables a permanent employee of a government organization to be entitled to the pension pay when retiring provided the employee satisfies the minimum requirements to enjoy the benefits.

Business and non-governmental not-for profit organization (NGO's) also have this kind of a scheme to benefit their employees with some modifications. A fund known as provident fund is established and both the employer and the employee contribute towards this fund monthly. When

an employee retains or leaves employment, a lump sum amount is paid to him/her.

4.c. Other Deductions

Apart from the above two kinds of deductions, employees may individually authorize additional deductions such as deductions to pay life insurance premiums, to repay loan from the employer, to pay for donation to charitable organization, contributions to "Idir" etc.

Check Your Progress Exercise - 3

- 1. Identify the federal and state taxes that most employers are required to withhold from employees?

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.....
.....

- 2. What is the employer share of pension contributions for a government permanent employee whose regular monthly salary of Br. 2400?

.....
.....
.....

5 Net Pay

Net pay represents the excess of gross earnings over total deductions of an employee.

Signature

The payroll sheet should have a column for signature of the employee to be taken when the employee collects the net pay.

6.5 MAJOR ACTIVITIES INVOLVED IN ACCOUNTING FOR PAYROLL

1 Gathering the necessary data - All the relevant information about every employee should be gathered.

This requires reviewing various documents such as attendance sheets and doing some arithmetic work.

2 Entering the names of 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 -the grand total for earnings must be checked if its equal to the sum of the grand totals of deductions and net pays.

4 The accuracy and authenticity of the information - summarized in the payroll should be verified by a different person from the one who prepared it.

5 The payroll - should be approved by an authorized personnel (individual)

6 Paying the payroll - either in cash or by writing a check.

7 The payment of the payroll and income taxes - withheld from employees (withhold doing tax liability) should be recorded in journal entry form.

8 The withholding tax - must be paid to the relevant government authority in time (promptly) and this is recorded in journal entry form.

Check Your Progress Exercise - 4

1. How is Net Pay computed?

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.....

.....

2. Assume an employee's regular hourly pay is Br. 16, with a time and a half for every hour worked in excess of 48 during a week. The following data are available:

Hours worked during current month	Br. 200
Regular monthly salary	Br. 3072
Allowance (transportation)	Br. 300

Assume that according to company policy transportation allowance in excess of Br. 200 is subject to employment income tax.

Based on the above data, compute the amount of the employee's:

- i. net pay for the current month;
- ii. employment income tax,
- iii. total deductions, assuming the employee is permanent civil servant.

6.6. ILLUSTRATION OF A PAYROLL REGISTER

Godanaye is a government agency recently organized to rehabilitate street children. It has five employees whose salaries are paid according to the Ethiopian calendar month. The following data relates to the month of Yekatit, 1995.

Serial Overtime No.	Name of Employee Duration of	Basic Salary	Transp. Allowance	worked(hr)	OT
Work					
01	Aregash Shewa	Br. 730	200	4	6:00-10:00 P.M
02	Paulos Chala	1020	—	8	Sunday(8:30-5:30)
03	Mohammed Modesir	5300	—	—	—
04	Tensay Belay	1470	—	—	—
05	Haile Olango	950	—	6	—
Public Holiday					

Additional Information

- The management of the agency usually expects a worker to work 40 hours in a week and during Yekatit there are four weeks.
- There were no absentees during the month
- All employees are permanent except Tenssay and Haile
- Paulos agreed to contribute monthly Br. 300 from his salary as a monthly saving in the credit association of the agency.

Required

1. Prepare a payroll register (sheet) for the agency for the month of Yekatit, 1995.
2. Record the payment of salary as of yekatit 30,1995 using check stub No. 0123.
3. Record the payment of the claim of the credit Association of their agency on Megabit 1, 1995 use check stub No. 0124.
4. Record the payment of the withholding taxes and pension contribution to the concerned government body on Megabit 7,1995.
5. Compute and recognize the total payroll tax expense for the month of Yekatit, 1995.

Computation of Earnings, Deductions and Net Pay

$\text{Gross Earnings} = \text{Basic salary} + \text{Allowance} + \text{Overtime Earning}$
--

Overtime Earning

Overtime earning = OT hrs worked X (ordinary hourly rate X relevant OT rate)

1. AREGASH:

$$\bullet \quad \text{OT Earning} = 4 \text{ hours} \left[\text{X} \frac{\text{br. 730}}{160 \text{ hours}} \right] \text{X } 1.25 = \text{br. 22.81}$$

NB Every employee is expected to work 160 hours per month
(i.e. 40 hours x 4 weeks)

- You should compute the regular hourly rate first:

$$\begin{aligned}\text{Regular Hourly Rate} &= \frac{\text{Monthly salary (Basic Salary)}}{\text{Total Hours worked in the Month}} \\ &= \frac{\text{br. 730}}{160 \text{ Hours}}\end{aligned}$$

- Therefore, the regular Hourly payment = br. 4.56

The regular hourly payment must be multiplied by the appropriate OT rate as follows:

$$\text{br. (4.56 x 1.25) x 4 hours} \text{-----} \underline{\underline{\text{br. 22.81}}}$$

2. PAULOS

- OT Earning = 8 hours X $\frac{\text{br. 1020}}{160 \text{ hours}} \times 2 \text{-----} \underline{\underline{\text{br. 102.00}}}$

3. HAILE

- OT Earnings = 6 hours X $\frac{\text{br. 950}}{160 \text{ hours}} \times 2.5 \text{-----} \underline{\underline{\text{br. 89.06}}}$

GROSS EARNINGS

$$\text{Gross Earnings} = \text{Basic salary} + \text{Allowance} + \text{OT Earnings}$$

1. AGEGASH

- Gross Earnings = br. 730 + br. 200 + br. 22.81 = br. 952.81
- Remember taxable income in this case is br. 752.81 because the transportation allowance of br. 200 is not subject to taxation.

2. PAULOS

- Gross Earning = br. 1020 + br. 102 = br. 1122
- The Gross Total Earnings of Paulos consists of the br. 1020 basic salary plus the overtime earnings of br. 102, which is br. 1122.

3. MOHAMMED

- Gross Total Earnings = br. 5300, which include the basic salary alone

4. TENSAY

- Gross Total Earnings = br. 1470, which is the basic salary.

5. HAILE

- Gross Total Earnings = br. 950 + 89.06 = br. 1039.06

DEDUCTIONS AND NET PAY

1. AREGASH:

- Gross Total Earnings-----br. 952.81
- Gross Taxable Income (br. 952.81 - br. 200)-----752.81

Employee Income Tax:

	<i>Earnings</i>	<i>X</i>	<i>Income Tax Rate</i>	<i>=</i>
Income Tax				
0 - 150-----	150	0		br. 00.00
151 - 650 on 500		10%		50.00
651 - 752.81 on <u>102.81</u>		15%		<u>15.42</u>
TOTAL br. 752.81-----				br. 65.42

Pension contribution:

Basic salary x 4%

= br. 730 x 0.04-----29.20

⇒ Total Deduction (**br. 65.42 + br. 29.20**)-----**br.**

94.62

NB. The income tax to be deducted from the employee could have been computed by using the short-cut method as follows:

= (Taxable Income x 15%) - br. 47.5

= (br. 752.81 x 0.15) - br. 47.5 = br. 65.42

2. **PAULOS:**

- Gross Total Earning-----br. 1122.
- Employee Income tax

<i>Earning</i>	<i>X Income Tax Rate</i>	=
<i>Income Tax</i>		
0 - 150 (150)	0	br.
		00.00
151 - 650 on 500		10%
		50.00
651 - 1122 on <u>472</u>		15%
		<u>70.80</u>
TOTAL br.1122-----br. 120.80		
• Pension Contribution (br. 1020 x 0.04)-----		40.80
• Credit Association-----		<u>300.00</u>
➤ Total Deduction-----		<u>br.</u>
		<u>461.60</u>

3. **MOHAMMED:**

- Gross Total Earnings-----br. 5300.00
- *Employee Income Tax*

<i>Earning</i>	<i>X Income Tax Rate</i>	=
<i>Income Tax</i>		
0 - 150-----150	0	br.
		00.00
151 - 650 on 500		10%
		50.00
651 - 1400 on 750		15%
		112.50
1401 - 2350 on 950		20%
		190.00

2351 - 3550 on 1200	25%
300.00	
3551 - 5000 on 1450	30%
435.00	
Over 5000 on 300	35%
<u>105.00</u>	
Total br. 5300.00-----	br. 1192.50
• Pension contribution (br. 5300 x 0.04)-----	<u>212.00</u>
➤ Total Deductions-----	<u>br. 1404.50</u>

4. TENSAY:

- Gross Total Earnings-----br. 1470.00
- Gross Taxable Income-----1470.00

Employee Income Tax:

<i>Earning</i>	<i>X Income Tax Rate</i>	<i>=</i>
Income Tax		
0 - 150-----150	0	br.
00.00		
151 - 650 on 500		10%
50.00		
651 - 1400 on 750		15%
112.50		
1401 - 1470 on <u>70</u>		20%
<u>14.00</u>		
Total br. 1470-----		br. 176.50

NB. No pension contributions because she is not permanent employee of the organization. Therefore, total deduction is the same as Employee Income Tax, br. 176.50.

5. HAILE:

- Gross Total Earnings-----br. 1039.06

Employee Income Tax:

Earnings	X Income Tax Rate	=
Income Tax		
0 - 150---150	0	br.
00.00		
151 - 650 on 500		10%
50.00		
651 - 1039.66 on <u>389.06</u>		15%
<u>58.36</u>		

Total br. 1039.06-----br. 108.36

- Pension contribution should not be computed for Haile because he is not permanent employee of the agency. Thus, the only deduction from Haile's earnings is the employee income tax.

NB. It is also possible to compute income tax by using the short-cut method:

$$\begin{aligned}
 \text{Total Income Tax} &= (\text{Taxable Income} \times 15\%) - 47.5 \\
 &= (\text{br. } 1039.06 \times 0.15) - 47.5 \\
 &= \underline{\underline{\text{br. } 108.36}}
 \end{aligned}$$

NET PAY:

Net pay = Gross Total Earnings - Total Deductions

1. AREGASH:

$$\text{Net pay} = \text{br. } 952.81 - \text{br. } (94.62)$$

$$\text{Net pay} = \underline{\underline{\text{br. } 858.19}}$$

2. PAULOS:

$$\text{Net pay} = \text{br. } 1122 - \text{br. } (461.60)$$

$$\text{Net pay} = \underline{\underline{\text{br. } 660.40}}$$

3. MOHAMMED:

Net pay = br. 5300 - br. (1404.50)

Net pay = br. 3895.50

4. TENSAY:

Net pay = br. 1470 - br. (176.50)

Net pay = br. 1293.50

5. HAILE:

Net pay = br. 1039.06 - br. 108.36

Net pay = br. 930.70

PROVING THE PAYROLL:

Total Earnings:

Basic salary-----br. 9470.00

Allowances-----200.00

Overtime-----213.87

Grand Total-----br. ~~9883.87~~ 9883.87

Deductions:

Employee Income Taxes-----br. 1663.58

Pension Contributions-----282.00

Other Deductions-----300.00 =

Total Deductions-----br. 2245.58

Net Pay Total-----br. 7638.29

Total Deductions plus Net pay-----br. ~~9883.87~~ 9883.87

The payroll register (or sheet) for Godanaye Rehabilitation Agency prepared for the Month of Yekatit, 1995 is shown below.

6.7 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.

Earnings are money earned by an employee of an organization from various sources. It may include: (1) the basic salary which is a flat monthly salary of an employee that is paid for carrying out the normal work or employment, (2) allowances which represents money paid monthly to an employee for special reasons, which may include: position allowance, housing allowance, hardship allowance, desert allowance, and transportation (or fuel) allowance, etc, and (3) overtime earnings – the amount payable to employees for overtime work performed.

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.

Todanaye

Payroll Register(sheet)

For the month of Yekatit,1995

Ser No.	Name of Employee	Earnings			Gross Earning	Deductions			Total Deduction	Net Pay	Sign
		Basic salary	Allowance	Over Time		Income Tax	Pension Contr.	Other Deduction			
01	Aregash Shewa	730	200	22.81	952.81	65.42	29.2	—	94.62	858.19	
02	Paulos Chala	1020	—	102	1122	120.8	40.8	300	461.6	660.4	
03	Mohammed Mudesir	5300	—	—	5300	1192.5	212	—	1404.5	3895.5	
04	Tensay Belay	1470	—	—	1470	176.5	—	—	176.5	1293.5	
05	Haile Olango	950	—	89.06	1039.06	108.35	—	—	108.35	930.71	
Totals		9470	200	213.87	9883.87	1663.57	282	300	2245.57	7638.3	

Prepared by _____ Checked by _____ Approved by _____

6.8 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

Check Your progress Exercise - 1

1. Payroll

2. **(a) Salaries** – represent payment for employees who are paid at a monthly or yearly rate. Salary is usually applied to payment for managerial, administrative, or similar services.

(b) Wages – represent payment for services of employees at an hourly rate or on a piece work basis. Wage is usually applied payment for a manual labor.

(c) **Gross Earnings** = Basic Salary + Overtime earning for the week

Weekly Basic Salary = regular hourly rate x weekly regular working hours.

$$= \text{br. } 50 \times 40 \text{ hrs.} = \text{br. } 2000$$

- Therefore, weekly regular salary of the employee is br. 2000
- Overtime Earning = Overtime Hours worked x (Regular Hourly rate x OT rate)

$$\text{OE} = 16 \times (\text{br. } 50 \times 1.25)$$

$$\text{OE} = 16 \times (62.50)$$

$$\text{Overtime Earning} = \text{br. } 1000.$$

- Thus, total earnings of the week = br. 2000 + Br. 1000 = br. 3000

Check Your progress Exercise - 1

1. Gross total Earnings of the employee = Basic Salary + Allowance + Overtime earning

$$\text{Gross total Earnings} = \text{br. } 1800 + \text{br. } 300 + \text{br. } 400$$

$$\text{Gross Total Earnings} = \text{br. } 2500$$

Taxable Income of the employee = br. 2200, which does not include the allowance of br. 300, because it is non-taxable.

Earnings	X	Income Tax Rate	=
Income Tax			
0 - 150	150		0
00.00			
151 - 650	on 500	10%	
50.00			
651 - 1400	on 750	15%	
112.50			

1401 - 2200 on 800 20%
160.00

Total br. 2200

322.50

➤ **Total Employee Income Tax is therefore, br. 322.50**

(b) (i) Basic (Regular) pay - is a flat monthly salary of an employee that is paid

for carrying out the normal work of employment and subject to change

when the employee is promoted.

(ii) *Overtime pay* - is the amount payable to an employee for overtime work

done.

Check Your progress Exercise - 3

1. Employee income tax

- employee pension contribution (if any)

2. Pension contribution is the amount of money that each government permanent employee contributes towards a fund which up on the employees retirement, will be drawn upon to finance the participant's welfare.

➤ The employer's share of pension contribution is 6% of the regular monthly salary of the permanent civil employee. Thus; $0.06 \times \text{br. } 2400 = \text{br. } 144.00$

Check your progress Exercise - 4

1. Net pay is computed using the following formula:

Net pay = Gross total Earnings - Total Deductions

2. Gross Total Earnings = Basic Salary + Allowance + Overtime earning

Gross Total Earning = br. 3072 + br. 300 + (8 hrs x (br. 16 x 1.50)

$$\begin{aligned}
&= \text{br. } 3072 + \text{br. } 300 (8 \times \text{br. } 24) \\
&= \text{br. } 3072 + \text{br. } 300 + \text{br. } 192 \\
&= \underline{\text{br. } 3564.00}
\end{aligned}$$

- Net pay = Total Earnings - Total Deductions
- Total Deductions = Income Tax + pension contribution
- Income Tax: Taxable Income (br. 3564 - br. 200) ---br. 3364.

<i>Earnings</i>	<i>X</i>	<i>Income Tax Rate</i>	<i>=</i>
Income Tax			
0 - 150 on 150			0
00.00			
151 - 650 on 500		10%	
50.00			
651 - 1400 on 750		15%	
112.00			
1401 - 2350 on 950		20%	
190.00			
235 - 3364 on 1014		25%	
253.50			
Total <u>br. 3364</u>	-----		br.
<u>606.00</u>			

- Pension contribution = 4% of basic salary
Pension contribution = $0.04 \times \text{br. } 3072 = \text{br. } 122.88$

Total Deductions -----br. 728.88

- (i) Net pay = br. 3564 - br. 728,88
Net pay = br. 2835.12
- (ii) Employee Income Tax = br. 606.00
- (iii) Total Deductions = br. 606 + br. 122.88 = br. 728.88

6.9 MODEL EXAMINATION QUESTIONS

PROBLEM - 1

CHILALO Retail Enterprise, a government owned business, pays its employees salaries according to the Ethiopian calendar Month. The following data relate to the month of Meskerem, 1995 E.C.

S.No	Employee Name	Basic Salary
001	Animut Anley	birr 2500
002	Nebiyat Girma	1880
003	Erecha Megersa	1790
004	Bekuretsion G/Tensae	1565

Additional information

- All workers are expected to work 40 hours per week and during Meskerem there are 4 weeks. The workers have done as they have been expected.
- Nebiyat Girma has worked 10 hours of overtime during Meskerem: 3 hours during 'Meskel' and the other 7 hours before 10 p.m.
- Erecha Megersa has also worked 5 hours of overtime: 2 hours during weekly rest days and 3 hours between 10 p.m. - 6 a.m.
- Animut and Nebiyat received a monthly position allowance of br. 350 and br 300 respectively which are both taxable.
- Animut Anley agreed to have a monthly deduction of br. 250 for credit association.
- All workers are permanent except Bekuretsion G/Tesnae.

Required:

1. Compute the total deductions and net pay for each employee.
2. Compute (calculate) the total:
 - a) Withholding Taxes
 - b) Payroll Tax
 - c) Record the payment of salary as of Meskerem 30,1995.

3. Pass the entry to pay the withholding taxes to the appropriate government unit.

PROBLEM - 2

HABESHA Trading co. is a private business enterprise. The company pays the salary of its employees according to the Ethiopian calendar month. The following data relates to the month of Hidar, 1995.

Serial No.	Name	Basic Salary
A 101	Abeje Belew	br. 2710
P 102	Haragua Delelegn	2500
P 103	Zelege Belayneh	1800
M 104	Zinash Manahlot	4200

Additional information

- The organization expects every worker to work 48 hours in a week and during Hidar there are four weeks and all workers have done as they have been expected.
- Ato, Abeje Belew and W/r, Haregua Delelegn are entitled to get a monthly allowance of birr 500 and br. 400 respectively.
- All workers are permanent except W/t, Zinash Manahlot, and they are entitled to a total of 15% provident fund of which 10% from the employer and 5% from the employee.
- Ato Zelege Belayneh and W/t Zinash Manahlot have worked 12 hours of overtime each on public holidays.
- According to the company rule, any allowance more than birr 200 is subject to income tax.

Required: based on the information given above:

1. Compute the income tax for each employee.
2. Compute the total deductions for each employee.
3. Determine the net pay (take-home-pay) for each employee.
4. Compute the total withholding tax for the month.

5. Compute the total payroll tax expense.
6. Pass the journal entry to record the payment of salary as of Hidar 30,1995.

PROBLEM - 3

The following data relates to the payroll of the employees of a privately owned business organization known as "ALAZAR Retail Enterprise", for the month of Megabit, 1995 E.C.

Serial	Name	Basic	Overtime
Worked			
No.		Salary	Hours
Duration			
01	Aleme T.	br. 4300	4
10 PM			up to
02	Banchayehu S.	960	12
10PM to 6 AM			b/n
03	Chemdessa N.	1450	8
weekly rest days			
04	Deniel T.	632	10
holiday			public
05	Leilena A.	2000	—
—			

Additional Information

- The management of the business organization usually expects a worker to work 40 hours in a week.
- There were no absentees during Megabit.

Required:

1. Prepare a payroll sheet for the month of Megabit
2. Record the payment of salary as of Miazia 1, 1995

3. Record the recognition of the payroll tax expense as of Miazia 1, 1995
4. Record the payment of withholding taxes to the proper government units as of Miazia 15, 1995

6. 10 GLOSSARY

Payroll- total amount paid to employees for a certain period.

Salary - amount paid to work performed for skilled labor

Wages - amount paid to a piece of work by unskilled labor

Payroll Register (sheet) - a list of employees of a business along with their earnings, deductions and net pay.

UNIT 7. CONCEPTS AND PRINCIPLES

Contents

- 7.0. Aims and Objectives
- 7.1. Introduction
- 7.2. Generally Accepted Accounting Principles (GAAP)
- 7.3. Summary
- 7.4. Answers to Check Your Progress Exercises
- 7.5. Model Examination Questions
- 7.6. Reference Books
- 7.7. Glossary

7.0 AIMS AND OBJECTIVES

This unit aims at discussing the basic accounting concepts and procedures used in the preparation of financial reports. It also discusses in detail the Generally Accepted Accounting Principles.

After studying this unit, you will be able to:

- describe the development of accounting concepts and principles
- identify and illustrate the application of basic accounting concepts and principle
- solve exercises and problems.

7.1 INTRODUCTION

The historical development of accounting practice has been closely related to economic developments. In the earlier periods, a business

enterprise was very often managed by its owner, and the accounting records and reports were used mainly by the owner – manager in conducting the business. Bankers and other lenders often relied on their personal relationship with the owner rather than on financial statements as the basis for making loans for business purposes. If a large amount was owed to a bank or supplier, the creditor often participated in management decisions.

As business organizations grew in size and complexity, “management” and “outsiders” became more clearly differentiated. From the later group, which includes owners (stock holders), creditors, government, labor unions, customers and the general public, came the demand for accurate financial information for use in judging the performance of management.

In addition, as the size and complexity of the business unit increased, the accounting problems involved in the preparation of financial statements became more and more complex. With these developments came an awareness of the need for a framework of concepts and generally accepted accounting principles to serve as guidelines for the preparation of the basic financial statements.

Accounting concepts and principles include conventions, axioms, standards, rules, guidelines and procedures that are necessary to have accounting practice at a particular period of time. The word “principles” as used in the context of generally accepted accounting principles does not have the same authoritativeness as universal principles or natural laws relating to the study of astronomy, physical or other physical sciences.

Accounting principles have been developed by individuals to help make accounting data more useful in an ever-changing society. They represent the best possible guides, based on reason observation, and

experimentation, to the achievement of the desired results. These principles are continually re examined and revised to keep pace with the increasing complexity of business operations. General acceptance among the members of the accounting profession is the criterion for determining an accounting principle.

Responsibility for the development of accounting principles has rested primarily on practicing accountants and accounting educators, working both independently and under the sponsorship of various accounting organization. These principles are also influenced by business practice and customs, ideas and beliefs of the users of the financial statements, governmental agencies, stock exchanges and other business groups.

Check Your Progress Exercise -1

1. Accounting principles and concepts are needed due to different reasons. What are they?

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7.2 GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP)

1. Business Entity Concept

The business entity concept assumes that a business enterprise is separate and distinct from the persons who supply its partial or all assets and from every other business. Businesses are perceived and treated as a distinct separate entities regardless of the legal concept because in so far as a specific business is concerned, the purpose of accounting is to record its transactions and periodically report its financial positions and profitability. Consequently, the records and reports of the business should not include either the transactions of another business or the

personal assets or transactions of its owner or owners. To include either would distort the financial position and profitability of the business.

The accounting equation, $\text{Assets} = \text{Equities}$, or $\text{Assets} = \text{Liabilities} + \text{Owners equity}$, is an expression of the entity concept: i.e. the business owns the assets and owes the various claimants. Thus, the accounting process is primarily concerned with the enterprise as a productive economic unit and only secondarily concerned with the investor as a claimant to the assets of the business.

Note: the legal entity concept may not go in accordance with the business entity concept depending on the type of the business enterprise, i.e., whether the business is a sole proprietorship, partnership or corporate entity. The two concepts match for corporate entity but not for the other two business enterprises.

2. Going Concern Concept

Only in rare cases is a business organized with the expectation of operating for only a certain period of time. In most cases, it is not possible to determine in advance the length of life of an enterprise, and so an assumption must be made.

The nature of the assumption will affect the manner of recording some of the business transactions, which in turn will affect the data reported in the financial statements.

The going concern concept assumes that the business enterprise continues its operations (at profit) for indefinite period of time. A business enterprise purchases and holds assets for use in its operations. The market value of those assets may change over time. However, the accounting records for those assets are not adjusted to reflect the market value changes. This is because of the going concern concept. As a going concern, the assets used in carrying on the operation of the business are

not for sale. Obviously, they cannot be sold without disturbing the business operation. Therefore, their market values are not particularly relevant and need not be shown. That is, the going concern concept provides much of the justification for recording plant assets at acquisition cost and depreciating them in an orderly manner without reference to their current realizable values. If there is no immediate expectation of selling them, plants assets should not be reported on the balance sheet at their estimated realizable values regardless of whether their current market value is less than or greater than their book value.

The going concern assumption similarly supports the treatment of prepaid expenses as assets, even though they may not be salable.

Doubt as to the continued existence of a firm may be disclosed in a note to the financial statements.

If a business enterprise is to be sold or liquidated, financial statements should be prepared from the “quitting concern” or liquidating point of view rather than from a “going concern” point of view. That is, in such cases, the cost principle and the going concern would not be applied in preparing the financial statements. Instead the estimated market values become more useful and informative.

3. (Historical) Cost Principle

Under this principle, which is a fundamental principle in accounting, all goods and services purchased are recorded at cost, where costs are measured on a cash or equivalent basis. If the consideration given for an asset or service is cash, cost is measured at the entire cash outlay made to secure the asset or the service. Otherwise, cost is measured at the cash equivalent value of the consideration given or the cash equivalent value of the thing received whichever is more clearly evident.

For example, if a business paid Birr 15,000 for a lot of land to be used in business operation, the land should be recorded at a cost of Birr 15,000. It does not make any difference if the buyer or any other competent outside appraiser think that the land worth more or less than Birr 15,000. Therefore, the journal entry would be recorded in the buyer's book as follows:

Land-----	15,000
Cash-----	15,000

4. Objectivity Principle

This principle requires that entries in the accounting records and data reported on financial statements be based on objectively determined evidence. This principle answers the question why assets and services are recorded at cost rather than some other amount such as estimated market value. As a rule, costs are objective since normally are established by buyers and sellers, each striking the best possible bargain for themselves. If this principle is not followed, the confidence of the many users of the financial statements could not be maintained. For example, objective evidence such as invoices and vouchers for purchase, bank statements for the amount of cash in bank, and physical counts for merchandise on hand supports much of the accounting. Such evidence is completely objective and can be verified.

Evidence is not always conclusively objective, for there are many cases in accounting in which judgments, estimates, and other subjective factors must be taken into account. In such situations, the most objective evidence available should be used. For example, the provision for doubtful accounts is an estimate of the losses expected from failure to collect sales made on account. The estimation of this amount should be based on such objective factors as past experience in collecting accounts receivable and reliable forecasts of future business activities. To provide

accounting reports that can be accepted with confidence, evidence should be developed that will minimize the possibility of error, intentional bias, or fraud.

Check Your Progress Exercise - 2

1. What does the objectivity principle require for information presented in financial statement?

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2. A business shows office stationery on the balance sheet at its cost Birr 430 cost, although it cannot be sold for more than Birr 10 as scrap paper. Which accounts principle require this treatment?

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5. Stable Monetary Unit Concept /Unit of measurement

Accounting transactions are measured, recorded and reported in terms of monetary unit. In the process of measuring, recording and reporting the monetary unit is treated as a stable unit of measure like a gallon, a kilometer etc. However, the monetary unit is not a stable unit of measure nevertheless; accountants use a monetary unit as a standard unit of measurement in their reports. Money is both the common factor of all business transactions and the only feasible unit of measurement that can be used to achieve uniform financial data.

The generally accepted use of the monetary unit for accounting for and reporting the activities of an enterprise has got two major limitations: First, it limits the scope of accounting reports. The scope of the report will be on information which can be quantifiable and measurable interims of monetary unit. What so ever the information is useful to the user,

unless it is measurable in terms of monetary unit, it cannot be reported on the financial statements. Secondly, as it is stated above, any monetary unit in the world is not stable due to economic changes. Therefore, the accountants' report could be highly criticized for not being fully informative.

To consider the above two limitations, accountants usually prepare reports which accompany the financial statements. These reports try to inform relevant unquantifiable information and reflect the effects of change in purchasing power of the monetary unit.

6. The Periodicity Concept /Accounting period Concept/

According to this concept, the life of a business entity should be broken into segment periods for accounting purposes. A complete and accurate picture of an enterprise's success or failure cannot be obtained until it discontinues operations, converts its assets into cash, and pays off its debts. Then, and only then is it possible to determine its true net income. But many decisions regarding the business must be made by management and interested outsiders during its existence. Therefore, it is essential to stop the operation of the business artificially at frequent intervals so as to produce periodic reports on operations, financial position, and cash flows. These reports reduced will help the user how well or bad the business was operating during those periods. These periods are timely and provide a consistent frame of reference to measure the business activities and compare those measurements with previous periods and other companies.

Reports may be prepared when a certain job or project is completed, but more often they are prepared at specific time intervals. For a number of reasons, including custom and various legal requirements, the longest interval between reports is one year.

This element of periodicity creates many of the problems of accountancy. The basic problem is the determination of periodic net income. For example, the need for adjusting entries, problems of inventory costing, problems of recognizing the uncollectibility of the receivables, and problem of selecting depreciation methods are directly related to the periodic measurement process.

Check Your Progress Exercise - 3

What are the two major limitations of stable monetary unit concept on the accounting reports?

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7. The Matching Principle

How well or bad the company is doing is reflected to users on the income statement prepared for a period of time. The income statement tries to measure the business's earnings by comparing the revenue with expenses of that period which is covered by the income statement.

The matching principle means that after the revenues for an accounting period have been determined, the costs associated with those revenues must be deducted in order to determine net income. The term matching refers to the close relationship that exists between certain costs and the revenue realized as a result of incurring those costs.

Thus, the use of matching as a pervasive principle in the income measurement offers another practical reason for the widespread use of cost principle. For example, the expenditure for advertising is a cost to be matched against the sales that is promoted. The recognition of uncollectible accounts is also supported by the matching principle. Uncollectibles arise from credit sales to customers who fails to pay their bills. To match this expense (uncollectible amount) , it becomes

important to estimate what part of the credit sales is to be uncollectible in the future. The use of estimate is necessary in order to carry the matching principle.

8. Revenue Realization Principle

States that revenue from business transactions is recorded when goods or services are sold. Some business sell goods or services on one date but receive payment on a later date. In such cases, the revenue is recorded on the date of sale, not necessarily when the cash is received.

9. Adequate Disclosure Principle

All financial statements and accompanying statements should include the necessary data that helps to facilitate the user's understanding. Thus, all relevant information to the users must be disclosed. However, full disclosure does not mean that everything must be disclosed. That would be too costly. A balance must be maintained between the cost of disclosing information and its relevance to users. Basically, if the information will make a difference in investors' or creditors' decisions it should be disclosed. Therefore, the criterion for disclosure is based on value judgment rather than objective facts.

Financial statements are made more useful by the use of headings and subheading, and by merging items in significant categories. Although all essential data should be disclosed within these categories, judgments must be exercised by excluding non-essential information to avoid clutter. For example, detailed information as to the amount of cash in various special and general funds, the amount on deposit in each of several banks, and the amount invested in various marketable government securities is not needed by the reader of financial statements. Such information displayed on the balance sheet would hinder rather than aid understanding.

In most cases, all of the pertinent data needed by the reader cannot be presented in the financial statements themselves. The statements therefore normally include essential or explanatory information in accompanying notes. Adequate disclosures are necessary for both historical facts and subsequent events to the issuance of financial statements. The following are some examples:

- Summary of significant accounting policies.
- Change in accounting methods used by the business
- Contingent liabilities and commitments.
- Events subsequent to the date of statements
- Replacement cost of inventories and plant assets etc.

10. The Consistency Principle

The amount and direction of change in net income and financial position from period to period is very important to readers and may greatly influence their decisions. Therefore, interested person should be able to assume that successive financial statements of an enterprise are based on consistently on the same generally accepted accounting principles. If the principles are not applied consistently, the trends indicated could be the result of changes in the principles used rather than the result of changes in business conditions or managerial effectiveness.

Consistency principle requires that the same generally accepted accounting principles are used from period to period for the same accounting events. Therefore, once an accounting method or principle is adapted, it should be used for reasonable period of time. This is because accounting information is more useful if it can be compared with similar information for the same company from time to time. However, consistency principle does not prohibit switching from one accounting method to another. Changes are permissible when it is believed that the uses of a different principle will more fairly state net income and financial

position. Examples of change in accounting principles include a change in the method of inventory pricing, a change in depreciation method for previously recorded assets and a change in the method of accounting for long- term construction contracts. Consideration of changes in accounting principles must be accompanied by consideration of the general rule for disclosure of such changes, which is as follows:

The nature of and justification for a change in accounting principle and its effects on income should be disclosed in the financial statements of the period in which the change is made. The justification for the change should explain clearly why the newly adopted accounting principle is preferable.

There are various methods of reporting the effect of a change in accounting principle on net income. The cumulative effect of the change on net income may be reported on the income statement of the period in which the change is adopted. In some cases the effect of the change could be applied retroactively to past periods by presenting revised income statements for the earlier years affected.

The application of the consistency principle does not require that a specific method be used uniformly throughout an enterprise. For example, it is not unusual for large enterprises to use different costing methods and pricing methods for different segments of their inventories.

11. The Materiality Concept

In following generally accepted accounting principles, the accountant must consider the relative importance of any event, accounting procedure or change in procedure that affects items on the financial statements. The concept of materiality is relative. What is material for one firm may be immaterial for another firm. The determination of what is important and what is not requires the exercise of judgments. Precise criteria

cannot be formulated. Some factors do help to identify events as being material or immaterial. This is done by comparing the size and nature of an item or event with the size and nature of other events or items. For example, the erroneous classification of a Birr 10,000 asset on a balance sheet exhibiting total assets of Birr 10,000,000, would probably be immaterial. If the assets total only Birr 100,000, however, it would certainly be material. If the Birr 10,000 represented a note receivable from an officer of the enterprise, it might well be material even in the first assumption.

The concept of materiality may be applied to procedures used in recording transactions. For example, small expenditures for plant assets may be treated as an expense of the period rather than as an asset. The saving in clerical costs is justified if the practice does not materially affects the financial statements.

Customs and practicality also influence the criteria of materiality. For example, corporate financial statements seldom report the cents amount or even the hundreds of dollars. A common practice is to round to the nearest thousands. For large corporations, there is an increasing tendency to report the financial data in terms of millions, carrying figures to one decimal.

12. The conservatism (prudence) concept

Accountants follow methods and procedures that yield the lesser amount of net income or net asset value. If an accountant faced two methods of handling a particular event, he /she tends to use the method which understates the net income or net asset. This is done to protect the firm from uncertain risk of loss. Thus, conservatism is usually expressed by the statement “anticipate no profit but provide for all losses”. Such an attitude of pessimism has been due in part to the need for an offset to the optimism of business management.

Current accounting thought has shifted somewhat from this philosophy of conservatism. Conservatism is no longer considered to be a dominant factor in selecting among alternatives.

***N.B:** the concepts and principles of objectivity disclosure, consistency and materiality are more important than conservatism and the latter should be a factor only when the others don't play a significant role in the decisions to be made by users of financial statements.*

7.3 SUMMARY

The accounting profession is guided by basic accounting concepts and principles. In recording business transactions and in preparing financial statements, accountants apply these principles and concepts.

Accounting principles differ from the principles related to the physical sciences. Accounting principles are developed by individuals to help make accounting data more useful in an ever – changing society. These principles are continually reexamined and revised to keep pace with the increasing complexity of business operations.

7.4 ANSWERS TO CHECK YOUR PROGRESS

1. Accounting principles and concepts are needed because of the following facts:

- i) The development of business firm in size and form.
- ii) The complexity of business transactions.
- iii) The need for separation of management and owners
- iv) The demand for accurate, timely and relevant information by users.

2. i) the objectivity principle requires that accounting records be based on verifiable events

such as business transactions between independent parties.

- ii) the historical cost principle.
- 3. The two major limitations of stable monetary unit concept are:
 - a) The scope of the report will be on information, which can be quantifiable and measurable in terms of money.
 - b) Any monetary unit in the world is not stable due to economic changes.

7.5 MODEL EXAMINATION QUESTIONS.

A) Discussion Questions

1. For accounting purposes, what is the nature of the assumption as to the length of life of an enterprise?
2. Why should the most objective evidence available be used as the basis for data reported on financial statements?
3. If a complete and accurate picture of an enterprise's success or failure is desired, what accounting period must be used to report on operations?
4. Is revenue from sales of merchandise on account more commonly recognized at the time of sale or at the time of cash receipt?
5. When there are several acceptable alternative accounting methods that could be used, the method used by an enterprise should be disclosed in the financial statements. Give examples of accounting methods that fall in this category.
6. If significant changes are made in the accounting principle applied from one period to the next, why the effect of these changes should be disclosed in the financial statements?
7. You have just been employed by a relatively small merchandising business that records its revenues only when cash is received and its

expense only when cash is paid you are aware of the fault that the enterprise should record its revenues and expenses on the accrual basis. Would changing to the accrual basis violate the principle of consistency? Discuss.

8. The accountant for a large department store charged the acquisition of a pencil sharpener to an expense account, even though the asset had an estimated useful life of 10 years. Which accounting concept supports this treatment of the expenditure?
9. Why do the financial statements of a business present its activities separate from its owner's activities?
10. The monetary principle assumes that money is a useful standard measuring unit for reporting the effects of business transactions. State and explain two major criticism or limitations of this accounting principle.

B) Exercises

1. Each of the following statements represents a decision made by an accountant. State whether or not you agree with the decision. Support your answer with reference to generally accepted accounting principles that are applicable in the circumstance.
 - a) In preparing the balance sheet, detailed information as to the amount due from hundreds of customers was omitted. The total amount was presented under the caption "Accounts Receivable"
 - b) Used computer equipment, with an estimated useful life of 5 years and no salvage value, was purchased early in the current fiscal year for Birr 150,000. Since the company planned to purchase new equipment, costing Birr 250.000, to replace this equipment at the end of five years, depreciation expense of Birr

50,000 was recorded for the current year. The depreciation expense thus provided for one fifth of the cost of the replacement.

- c) All minor expenditures for office equipment are charged to an expense account.
- d) Merchandise transferred to other parties on a consignment basis and not sold was included in merchandise inventory.
- e) Land, used as a parking lot, was purchased 10 years ago for Birr 50,000. Since its market value is now Birr 90,000, the land account is debited for Birr 40,000 and a gain account is credited for a like amount. The gain is presented as an "other income" item in the income statement.
- f) Thirty days before the end of the current year, sales catalogs were acquired for birr 45,000. Although the catalogs are not salable the unused portion is included as an asset in the balance sheet at the end of the year.
- g) Merchandise inventory at the end of the current year was estimated by the general manager, who "eye balled", the inventory on hand and then determined its cost, based on the estimate of current costs. The accountant used the general manager's estimate for recording the cost of the inventory in the accounts.
- h) Financial statements adjusted to eliminate the effects of inflation (using the current cost method) were presented as supplementary financial data.
- i) Net income for the current year is expected to be larger than normal. Therefore the accountant used the declining - balance method for determining depreciation for the current year to reduce the net income to a more normal amount. The accountant plans to

return its future years to the use of the straight-line method that has been used in all past years for determining income.

7.6 REFERENCE BOOKS

1. Fees and Warren : Principles of Accounting, 16th Edition.
2. Horngren, Sundem, and Elliot : Introduction to Financial Accounting, 8th Edition, (2002) Pearson Education Inc.
3. Roger H. Hermanson, : Accouunting Principles, 4th Edition (1989)
Jems D. Edwards and R.F Salmonson IRWIN Inc.
4. Kieso and Weygandt : Intermediate Accounting, 9th Edition, (1998)
John Wiley and Sons, Inc.

7.7 GLOSSARY

1. **Adequate disclosure** - the concept that financial statements and their accompanying footnotes should contain all of the pertinent data believed essential to the reader understands of an enterprises financial status.
2. **Business Entity concept** - the concept that assumes that accounting applies to individual economic units and each unit is separate and district from the persons who supply its assets.

3. **Conservatism** – the concept that dictates that in selecting among alternatives, the method or procedure that yields the lesser amount of net income or asset values should be selected.
4. **Consistency** – the concept that assumes that the same generally accepted accounting principles have applied in the preparation of successive financial statements.
5. **Cost Principle** – the principle that assumes that the monetary records for properties and services purchased by a business should be maintained in terms of its cost.
6. **Going Concern Concept** – the concept that assumes that a business entity has a reasonable expectation of continuing in business at a profit for an indefinite period of time.
7. **Matching** – the principle of accounting that all revenues should be matched with the expenses incurred in earning those revenues during a period of time.
8. **Materiality** – the concept that recognizes the practicality of ignoring small or insignificant deviations from generally accepted accounting principles.
9. **Periodicity concept** – the concept that states that the life of a business entity should be broken into segment periods for accounting purposes.

UNIT 8. ACCOUNTING FOR PARTNERSHIPS

Contents

- 8.0 Aims & Objectives
- 8.1 Introduction
- 8.2 Partnership And Their Characteristics
- 8.3 Advantages And Disadvantages of A Partnership
- 8.4 Recording The Formation of A Partnership
- 8.5 Division of Partnership Income And Losses
- 8.6 Financial Statements For A Partnership
- 8.7 Dissolution of A Partnership
 - 8.7.1. Admission of A New Partner
 - 8.7.2. Withdrawal of A Partner

- 8.8 Liquidation of A Partnership
- 8.9 Summary
- 8.10 Answers To Check Your Progress
- 8.11 Model Examination Questions
- 8.12 Reference Books
- 8.13 Glossary

8.0 AIMS AND OBJECTIVES

The unit aims at discussing the accounting for partnerships such as recording investments, computing each partner's share of income or losses using different techniques, and recording them to the respective capital accounts. Also, the accounting implications of dissolution and liquidation of a partnership will be described. Having studied and worked through this chapter you would be able to:

- define partnerships and explain their characteristics.
- describe the advantages and disadvantages of a partnership
- record the investments made by the partners in forming a partnership.
- understand and apply the various methods of dividing the income or loss of a partnership.
- Record the admission and withdrawal of a partner(s)
- Understand and apply the steps in the liquidation of a partnership.

8.1 INTRODUCTION

In your previous 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 the previous section 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 unit. Therefore, the main focus of this chapter is to acquaint the learners with the basics of accounting for partnerships. As will be explained later in this section, 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 partners' capital and drawing accounts, division of income (or loss), and changes in ownership of the partnership.

8.2 PARTNERSHIPS AND THEIR CHARACTERISTICS

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 partnership agreement should specify the name location, and purpose of the business; the capital contributions and duties of each partner; the methods of income and loss division; 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 purposes of accounting, partnerships are treated as separate economic entities. The next paragraphs describe some of the important features of a partnership.

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 within 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 within 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. redundant. 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.

8.3 ADVANTAGES AND DISADVANTAGES OF PARTNERSHIP

Advantages:

A partnership form of business ownership 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 has 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

8.4 RECORDING THE FORMATION OF A PARTNERSHIP

A separate capital account is maintained for each partner in a partnership. Each partner's capital account is credited for the value of their investment upon formation of the partnership.

Illustration

Dr. Teklay and Dr.Mamo 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.

<u>Dr. Teklay</u>		<u>Dr.</u>
<u>Mamo</u>		
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, 2002 to record the investment of each partner and the formation of the partnership would be:

2002, Jan.1. Cash	6,500	
A/R	8,600	
Supplies	21,000	
Medical Equipment	3,000	
A/p		2,300
Teklay Capital		36,800
2002, Jan.1. Cash	3,300	
A/R	4,300	
Supplies	12,000	
Building	150,000	
Accounts Payable		3,200
Mamo, Capital		166,400

Check Your Progress Exercise - 1

1. On February 2, 2002, Dr. Teklay and Dr. Mamo made additional investments of cash Birr 4,200 and 4300 respectively. Show the entry to record the investments by the owners.

2. What is the meaning of unlimited liability when applied to a partnership?

3. What characteristics of a partnership could be interpreted as disadvantages?

8.5 DIVISION OF PARTNERSHIP INCOME AND LOSSES

A partnership's income and losses can be distributed according to whatever method the partners specifies 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

Assume that Dr. Teklay and Dr. Mamo partnership had a net income of Birr 60,000

1. A. 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. Teklay capital-----	30,000

Dr. Mamo capital-----30,000

B. Net income is divided in ratio of 3.2 to Dr. teklay and Dr. Mamo respectively.

- Income summary-----60,000

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

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

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

Income summary ----- 60,000

Dr. Teklay capital $\left[\frac{36800}{203200} \times 60000 \right]$ -----
10,860

Dr. Mamo capital $\left[\frac{166400}{203200} \times 60000 \right]$ -----
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. Teklay and the remainder is divide equally.

Net Income Division

Income to be

	<u>Dr. Teklay</u>	<u>Dr.Mamo</u>	<u>Total</u>
	<u>Distributed</u>		
Net income			Birr, 60,000
Interest (5%)	1,840	8,320	10,160
	49,840		
Salary	5,000	--	5,000
	44,840		
Remainder	<u>22,420</u>	<u>22,420</u>	<u>44,840</u>
-- 0 --			
Distribution	<u>29,260</u>	<u>30,740</u>	<u>60,000</u>

Journal entry

Income summary ----- 60,000
 Dr. Teklay capital ----- 29,260
 Dr. Mamo capital ----- 30,740

Check Your Progress Exercise - 2

1. Assume the same agreement as in number "2" 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

8.6 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 owners equity for

Teklay and Mamo using assumed data and the income division shown above is illustrated below:

Dr. Teklay and Dr Mamo
Statement of partners' Capital
For the year Ended Dec, 31, 2002

	<u>Dr. Teklay</u>	<u>Dr. Mamo</u>
Capital Bal. January 1, 2002	Br. 36,800	Br.
166,400		
Add: Additional investment		
		<u>4,200</u>
<u>4,300</u>		
Total	Br. 41,000	Br. 170,700
Net income distribution		<u>29,260</u>
<u>30,740</u>		
		70,260
201,440		
Deduct: Withdrawals during the year		<u>5,000</u>
<u>5,000</u>		
Capital Bal. Dec. 31, 2002	Br. <u>65,260</u>	Br.
<u>196,440</u>		

NB- 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.

Check Your Progress Exercise - 3

1. Hilina and Meron agreed to form a partnership. Hilina contributed Br. 200,000 in cash , and Meron 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.

- Hilina and Meron failed to include stated ratio in the partnership agreement.
 - Hilina and Meron agreed to share income and losses in a 3:2 ratio.
 - Hilina and Meron agreed to share income and losses in the ratio of their original investments.
 - Hilina and Meron agreed to share income and losses by allowing 10 percent interest on their original investments and sharing any remainder equally
2. What accounts are debited and credited to record the division of net income at the end of the fiscal period?

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

8.7 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.
- 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 or an existing partner withdraws.

8.7.1. 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 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. Teklay and Dr. Mamo by buying ownership right of Br. 8000 from Dr. Mamo. The entry to record the admission of Sister Helen and the transfer of the ownership right from the capital account of Dr. Mamo to the capital account of Sister Helen in the partnership books shown below

Journal entry

Dr. Mamo-----	8,000
Sr. Helen -----	8,000

The price that sister Helen paid to Dr. Momo 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. Teklay and Dr. Mamo's capital balance were Br. 25,000 and Br. 55,000 respectively. Dr. Teklay and Dr. Mamo 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 $\frac{1}{2}$.

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 $\frac{1}{4}$.

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. Teklay capital ----- 26,667

Dr. Mamo capital ----- 13,333

Check Your Progress Exercise - 4

1. Assume the same as above except that sister Helen received $\frac{3}{4}$ ownership right upon admission as she was thought to bring goodwill to the partnership. Record the admission.

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

Journal entry

Dr. Mamo Capital-----	38,333
Dr. Teklay Capital -----	38,333

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

2. 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:

- a. Assume Dr. Mamo was paid Br. 50,000 cash when he withdraws from the partnership of T,M&H. The capital balances of each partner were as follows as of that date:

Dr. Teklay capital -----	Br. 100,000
Dr. Mamo capital -----	50,000
Sister Helen capital -----	<u>35,000</u>
Total Equities	Birr <u>185,000</u>

Journal entry

Dr, Mamo capital ----- 50,000
Cash -----50,000

- b. Assume Dr. Mamo 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 Teklay Dr. Mamo and Sister Helen respectively).

Journal entry

Dr. Mamo capital -----50,000
Sister Helen capital ----- 1,500
Dr. Teklay capital ----- 4,500
Cash -----56,000

- The Birr 6,000 excess is shared on the basis of a 3:1 ratio, i.e., Dr. Teklay would be charged for $6,000 \times \frac{3}{4} = \text{birr } 4500$, and Sister Helan would be charged for

Birr $6000 \times \frac{1}{4} = \text{Birr } 1500$.

Check Your Progress Exercise - 5

1. Assume everything else as in # b above except that Dr. Mamo was paid Br. 45,000 upon withdrawal. Record the dissolution.

Attempt the following questions:

1. The partnership agreement for Kebede and Lema partnership does not disclose how they will share income and losses. How would the income and losses be shared in this partnership?
2. In January 19X1, Sisay Hailu and Gelane Jalene agreed to produce and sell Soaps. Sisay contributed br. 240,000 in cash to the business. Gelane contributed the building and equipment, valued at Br. 220,000 and Birr. 140,000, respectively. The partnership had an income of Birr 84,000 during 19X1 but was less successful during 19X2, when income was only Br. 40,000.
 - (a) Prepare the journal entry to record the investment of both partners in the partnership
 - (b) Determine the share of income for each partner in 19X1 under each of the following conditions:
 - ❖ The partners agreed to share income equally.
 - ❖ The partners failed to agree on an income- sharing arrangement.
 - ❖ The partners agreed to share income according to the ratio of their capital investments
 - ❖ The partners agreed to share income by allowing interest of 10% on their original investments and dividing the remainder equally.
 - ❖ The partners agreed to share income by allowing salaries of Birr 40,000 for Sisay and Br. 28,000 for Gelane, and dividing the remainder equally.
3. Nadew, Tezera, and Woliyi have equity in a partnership of Birr 80,000, Birr 80,000, and Birr 120,000, respectively, and they share income and losses in a ratio of 20%, 20%, and 60%. The partners have agreed to admit Equbay to the partnership.

Instruction: prepare journal entries to record the admission of Equbay to the partnership under the following conditions:

- (a) Equbay invests Birr 50,000 for 20% interest in the partnership, and a bonus is recorded for the original partners.
- (b) Equbay invests Birr 60,000 for a 40% interest in the partnership, and a bonus is recorded for Equbay.

8.8 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 has 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 in case 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 Resom, Sultan, and Tassew is liquidated on September 1, 2002. The income and loss sharing ratio of the partners is: Resom 40%, Sultan 35%, and Tassew 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, 2002**

	Debit	Credit
Cash	10,000	
Other assets	90,000	
Liabilities		10,000
R. Capital		30,000
S. Capital		30,000
T. Capital		<u>30,000</u>
Total	<u>100,000</u>	<u>100,000</u>

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 Resom, Sultan, and Tassew sell all noncash assets for Birr 95,000, realizing a gain of birr 5000, (Birr 95,000 – Birr 90,000). The gain is divided among Resom, sultan and Tassew 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 Resom, Sultan, and Tassew 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, cap. 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 = $30,000 - 31,920 = 1,920$

S capital = $30,000 - 27,930 = 2,070$

T capital = $30,000 - 19,950 = 10,050$

Only Birr 10,200 cash is available ($10,000 + 10,200 - 10,000$) for distribution to S and T while the combined balances of their capital accounts is Birr 12,120. Therefore, additional Birr 1,920, ($12,120 - 10,200$) 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 1,920 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 ($35/60 \times 1,920$) ----- 1,120.00

T capital ($25/60 \times 1,920$) ----- --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. 1-15,2002**

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

Deficiency	- 10,200	-0-	-0-	-0-
950 9,250				
Dist.of cash	<u>10,000</u>	<u>---</u>	<u>---</u>	<u>---</u>
<u>-950</u> <u>-9250</u>				
Balance	<u><u>-0-</u></u>	<u><u>-0-</u></u>	<u><u>-0-</u></u>	<u><u>-0-</u></u>
<u>-0-</u> <u>-0 -</u>				

8.9 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.

A partnership form of business ownership has several characteristics. From among them are: voluntary association, limited life, unlimited liability, mutual agency, and co- ownership of partnership property.

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 noncash 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.

If a partnership agreement does not mention the distribution of income and losses, the law requires that they be shared equally by all partners. 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, (2) compensation for direct services the partners have rendered, and (3) other income for any special characteristics individual partners may bring to the partnership or risks they may take.

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 owners 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.

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 has been achieved, (b) the time period for which the partnership was formed expires (or ends), (c) newly enacted laws have made the partnership's activities illegal, (d) the partnership becomes bankrupt.

The partnership agreement should indicate the procedures to be followed in case 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. 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.

8.10 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

Check Your Progress Exercise -1

Journal entry

Cash-----	8500
Dr. Teklay capital-----	4200
Dr. Mamo capital-----	4300

Check Your Progress Exercise -2

Net income division

Income to be

	<u>Dr. Beklay</u>	<u>Dr. Mamo</u>	<u>Total</u>
<u>Distributed</u>			
Net income			15,000
Interest (5%)	1,840	8,320	10,160
4,840			

8.11 MODEL EXAMINATION QUESTIONS

PART I. Choose The Best Answer:

_____ 1. The term unlimited liability when used in connection with
a

partnership refers to the fact that:

- A) A contract entered into by one partner is binding on all partners.
- B) Creditors can look beyond the partnership assets to the individual assets of the partners for satisfaction.
- C) The partnership has an unlimited obligation to provide professional services.
- D) The partnership is liable for all actions of the partners even when conducting personal business.
- E) All except D.

_____ 2. A and B agree to form a partnership. A is to contribute birr 60,000 in cash and to spent one - half time to the partnership. Bi is agreed to contribute birr 40,000 and to devote full time to the partnership. How will A and B share in the division of net income or net loss?

- A) 1:2
- B) 2:1
- C) 3:2
- D) 1:1
- E)None of the above

Refer to the following information which is related to XYZ partnership and answer questions 3 and 4.

The capital account and income sharing ratios of the three partners after realization of non - cash assets and settlement of all liabilities are as follows:

Partner	Balance in Capital Account	Income - Sharing Ratio
X	Birr 45,000	2
Y	(15,000)	3
Z	36,000	3

_____ 3. If partner Y is unable to pay any part of his deficiency to the partnership,

how much cash will be given to partner Z from the liquidation?

- A) Birr 30,375 C) Birr 13,500 E) None of the above.
B) Birr 27,000 D) Birr 30,000

_____ 4. If partner Y pays two - third of the deficiency to the partnership, how much

cash will be given to partner X?

- A) Birr 33,000 C) Birr 43,000 E) None of the above.
B) Birr 47,000 D) Birr 45,000

_____ 5. Which of the following is not a characteristic of a partnership?

- A) each partner can act as an agent of a partnership
B) Unlimited life.
C) Easy of formation
D) It is not legally separate from its owners.
E) None of the above

PART II - Attempt the Following Questions

1. What are the disadvantages of the partnership over the corporation as a form of organization for a profit making business enterprise?
2. Explain the difference between the admission of a new partner to a partnership (a) by purchase of an interest from another partner and (b) by contribution of assets to the partnership.
3. When a new partner is admitted to a partnership and goodwill is attributable to the old partnership, how should the amount of the goodwill be allocated to the capital accounts of the original partners?
4. Why might partnership attribute goodwill to a newly admitted partner?
5. Paulos, Kebede, and Abeje are partners sharing income 3:2:1. After the firm's loss from liquidation is distributed, Paulos's capital account has a debit balance of Birr 30,000. If Paulos is personally bankrupt and unable to pay any of the birr 30,000, how will the loss be divided between Kebede and Abeje?

Exercise

Dagnachew and Firdu formed a partnership. Dagnachew invested Birr 90,000 and Firdu invested Birr 60,000. Dagnachew is to devote one-half time to the business while Firdu is to devote full time.

The following plans for the division of income are being considered:

1. equally
2. in the ratio of original investments
3. in the ratio of time devoted to the business
4. Interest of 12% on original investments and the remainder equally.

5. Interest of 12% on original investments, salaries of Birr 10,000 to Dagnachew and Birr 20,000 to Firdu, and the remainder equally.
6. The same as in #5 except that Dagnachew is also to be allowed a bonus equal to 25% of the amount by which net income exceeds salary allowances.

Required:

Determine the division of income to Dagnachew and Firdu under each plan assuming the partnership of Danagnachew and Firdu earned a net income of:

- a) Birr 32,000
- b) Birr 150,000

Problem 1

The following balance sheet is related to YOGA partnership

YOGA Partnership	
Balance sheet	
Meskerm 10,1995	
Assets:	Liabilities and Capital
Cash-----Birr 20,000	Liabilities-----Birr
30,000	
Other assets----- 80,000	Capital:
	Y.capital----- 40,000
	G. capital----- 21,000
	A. capital----- <u>9,000</u>
	Total Liabilities and
Total Assets ----- Birr <u>100,000</u>	Capital -----
<u>100,000</u>	

The partners agreed to liquidate the business enterprise by selling other assets and dividing any remaining cash available in the partnership after settling the debt of the partnership as of the date of liquidation. All the partners are general partners. Partner Y, G and A share income or loss in the ratio of 20%, 40%, and 40% respectively.

Required:

- A. prepare a liquidation statement assuming that the other assets were realized for:
- i) Birr 80,000
 - ii) Birr 100,000
 - iii) Birr 60,000
 - iv) Birr 50,000
- B. Journalize the necessary entries for the business enterprise on the basis of the liquidation statement prepared for each case.

8.12 REFERENCE BOOKS

- | | |
|------------------------|--|
| 1. Fees and Warren | : principles of Accounting, 16 th Edition. |
| 2. Horngren, Sundem, | : Introduction to Financial Accounting: 8 th Edition, |
| | (2002) Pearson Education Inc., |
| 3. Roger H. Hermanson, | : Accounting Principles, 4 th Edition, |
| (1989) IRWIN | |
| Jems D. Edwards | INC. |
| And R.F. Salmonson | |
| 4. Kieso and Weygandt | : Intermediate Accounting, 9 th Edition, (1998) John |
| | wiley and sons, Inc. |

8.13 GLOSSARY

Partnership individuals as	:	a business owned by two or more co-owners based on a partnership agreement.
Partners	:	owners of a partnership
Dissolution because of the	:	formation of a new partnership retirement's admission or death of a partner.
Liquidation of business	:	the winding up of operation and sale assets.
Realization	:	sale of business assets for cash

UNIT 9. ACCOUNTING FOR CORPORATIONS

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 - 9.8.3 Relevant Dividends dates
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- 9.10 Equity Per Share
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- 9.13 Model Exam Questions

9.1 AIMS AND OBJECTIVES

This unit 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. Treasures stocks and equity per share. 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.

9.1 INTRODUCTION

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.

9.2 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.

9.3 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.

9.4 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 or 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.

9.5 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.

9.6 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 the 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.

9.6.1 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.

9.6.2 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 in full; any remaining assets are divided among stockholders in proportion to the number of shares owned.
- d) ***Pre-emptive rights:*** the current stockholders have the right to purchase the shares of the corporation on a prorated basis when new stocks are offered for sale. This preemptive right is designed to provide each stockholder the opportunity to maintain a proportional ownership in the corporation.

Check Your Progress Exercise -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 right to make managerial decisions.
 - d) Owners cannot withdraw assets from the business at will.
2. Explain the meaning of the term double taxation as it applies to corporate profits.

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.....

9.7 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 in 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.

9.7.1 Types of Stocks/Shares

Many corporations issue several classes of capital stock, each providing investors with different rights and opportunities. The basic type of stock issued by every corporation is called **common stock**. Common stock possesses 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 in the event of liquidation 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.

9.7.2 Issuance of Par-value Stocks

9.7.2.1 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.

9.7.2.2 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 in 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 been 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		

9.7.2.3 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 Misrak Binda. 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	
<i>To record receipt of 1st payment</i>	
Cash	480,000
Common stock subscription Receivable	
480,000	
<i>To record receipt of final payment</i>	
Cash	480,000
Common stock subscription Receivable	
480,000	
<i>To record receipt of final payment</i>	
Common stock subscribed	1,200,000
Common stock	
1,200,000	
<i>To record issuance of stock</i>	

9.7.2.4 Non Cash Issuance of Capital Stock

Corporations sometimes issue capital stock for non-cash assets such as in exchange for real estate. The current market value of the stock issued or the non-cash consideration received, whichever is most reliable, determinable, is used to record the transaction. If the market value of either capital stock issued or the non-cash items are not reliable, the value is established by the corporation's board of directors.

9.7.2.5 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.

9.8 ACCOUNTING FOR RETAINED EARNINGS AND DIVIDENDS

9.8.1 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.

9.8.2 Nature of Dividends

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

a) Cash dividend

Cash disbursed

b) Property Dividend

Non cash assets disbursed

c) Stock Dividend

Corporations own stock disbursed

d) Liquidating Dividend

Return of contributed capital

e) Scrip Dividend

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

9.8.3 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.

9.8.4 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.

9.8.4.1 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).

9.8.4.2 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 non-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 stockholders will receive Br. 120,000 (Br. 320,000 – Br. 200,000).

Check Your Progress Exercise -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 in 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 in 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

9.9 ACCOUNTING FOR TREASURY STOCKS

Treasury stock is a corporation's own stock (preferred or common) that has been issued and repurchased by the issuing corporation. A corporation may also accept shares of its own stock in payment of a debt 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 an asset.

9.9.1 Reasons to acquire Treasury Stocks

In general, treasury stock is acquired for the following reasons:

- a) to support (increase) the market price of the stock
- b) to increase earnings per share by reducing the number of shares outstanding.
- c) To reduce dividend payments by reducing the number of shares outstanding.
- d) To provide shares for reissuance to employees as a bonus
- e) To use the shares acquired for stock dividends
- f) To reissue with a higher price

9.9.2 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 Harambe 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.

9.10 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, 19x1.

- 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 in the treasury

800,000

- Paid in capital in excess of par

-Preferred Br. 50,000

-Common 1,000,000

1,050,000

- Retained earnings

2,000,000

Subtotal

Br.

4,450,000

- Less cost of 25,000 shares 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:

$$\begin{aligned}\text{Preferred EPS} &= \frac{\text{Equity allocated to preferred stock}}{\text{Number of o/s shares of preferred stock}} \\ &= \frac{105 \times 12,000}{12,000} \\ &= \text{Br. } 105/\text{share}\end{aligned}$$

$$\begin{aligned}\text{Common EPS} &= \frac{\text{Equity allocated to common stock}}{\text{Number of o/s shares of common stock}} \\ &= \frac{2,940,000}{375,000} \\ &= \text{Br. } 7.84/\text{share}\end{aligned}$$

Check Your Progress Exercise -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?

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2. If the Retained Earnings account has a debit balance, how is it presented in the balance sheet and what is it called?

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.....

3. How is book value per share of common stock computed when a company has only one class of stock?

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9.11 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 in the distribution of assets if the corporation is liquidated, and to subscribe to additional shares if the corporation decides to increase the number of shares outstanding.
- Common stock represents the true residual ownership of a corporation. These shares 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.

9.12 ANSWER TO CHECK YOUR PROGRESS

Check Your Progress Exercise - 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.

Check Your Progress Exercise - 2

1. a) Assets
b) Assets
c) Stockholders' equity
d) Stockholders' equity
e) Stockholders' equity
2. C

Check Your Progress Exercise - 3

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

9.13 MODEL EXAM QUESTIONS

Part 1. Short answer questions

1. When a corporation issues stock at a premium, does the premium constitute income? Explain.
2. What type of expenditure is charged to the organization costs accounts?
3. When stock is issued by a corporation in exchange for assets other than cash, accounts face the problem of determining the dollar amounts at which to record the transaction. Discuss the factors to be considered and explain their significance?

Part 2. Workout questions

1. Early in the year Yetimwork Demissie and several friends organized a corporation called mobile communications, Incorporation. The corporation was authorized to issue 50,000 of Br. 100 per value, 10% cumulative preferred stock and 400,000 shares of Br, 2 par value common stock. The following transactions occurred during the year.
Jan. 6 Issued for cash 20,000 shares of common stock at Br. 14 per share. The shares were issued to Binda and 10 other investors.
Jan. 7 Issued an additional 500 shares of common stock to Binda in exchange for his services in organizing the corporation. The stockholders agreed that these services were worth Br. 11,000.
Jan 12 Issued 2,500 shares of preferred stock for cash of Br. 250,000.
Jan. 4 acquired land as a building site in exchange for 15,000 shares of common stock. In view of the appraised value of the land, the directors agreed that the common stock was to be valued for purpose of this transaction at Br. 15 per share.

Nov15 The first annual dividend of Br. 10 per share was declared on the preferred stock to be

Paid December 20.

Dec20 Paid the cash dividend declared on November 15,

Dec31 After the revenue and expenses were closed into the Income summary account, that

account indicated a net income of Br. 106,500.

Instructions

- a) Prepare journal entries in general journal form to record the above transactions
 - b) Prepare stockholders' equity section of the Mobile communications, Inc. balance sheets at December 31.
2. Belay publications was organized early in 19x1 with authorization to issue 20,000 shares of Br. 100 par value preferred stock and 1 million shares of Br. 1 par value common stock. All of the preferred stock was issued at par, and 300,000 shares of common stock were sold for Br. 20 per share. The preferred stock pays a 10% cumulative dividend and is callable at Br. 105. During the first five years of operations, the corporation earned a total of Br. 4,460,000 and paid dividends of Br. 1 per share each year on the common stock. In 19X6, however, the corporation reported a net loss of Br. 1,600,000 and paid no dividends.

Instruction

Prepare the stockholders' equity section of the balance sheet at December 31, 19X6.

9.14 GLOSSARY

Board of directors: Persons elected by common stockholders to direct the affairs of a corporation.

Capital stock: Transferable units of ownership is a corporation. A broad term, which may

refer to common stock, preferred stock, or both.

Common stock: A type of capital stock, which possesses the basic rights of ownership including the rights to vote.

Corporation: A business organized as a legal entity separate from its owners.

Legal capital: Equal to the par value or stated value of capital stock issued. This amount

cannot be removed without special legal action.

Paid in capital: the amounts invested in a corporation by its stockholders.

Par value (or stated Value): the minimum amount per share to be invested is the corporation by its own owners and cannot be withdrawn except by special legal action.

Preferred stock: a class of capital stock usually having preferences as to dividends and in the distribution of assets in event of liquidation.

Stock certificate: a document issued by a corporation as evidence of the ownership of the number of shares stated on the certificate.

Subscriptions to Capital stock: formal promises to buy shares of stock from a corporation with payment at a later date.

UNIT 10. DEPARTMENTS AND BRANCHES

Contents:

- 10.0 Aims and Objectives
- 10.1 Introduction
- 10.2 Accounting for Departmental Operations.
- 10.3 Departmental Margin Approach to Income Reporting
- 10.4 Accounting for Branch Operations
 - 10.4.1 Centralized Accounting System
 - 10.4.2 Decentralized Accounting System
- 10.5 Financial Statements for Home Office and Branch
- 10.6 Shipments to Branch Billed at Selling Price
- 10.7 Summary
- 10.8 Answers to Check Your Progress Exercises
- 10.9 Model Examination Questions
- 10.10 Reference books
- 10.11 Glossary

10.0 AIMS AND OBJECTIVES

After studying this unit, you should be able to:

- discuss the need for departmental information;
- discuss accounting reports for departmental operations;
- explain Departmental margin Approach to income reporting;
- illustrate system of branch accounting;
 - Centralized Vs Decentralized, and
- explain shipment to branch billed at selling price.

10.1 INTRODUCTION

The activities of many business enterprises are performed by separate segments such as departments, divisions and branches. These units of an operating entity may be organized as separate corporations, with

common ownership of the stock and common management at the top. Selection of the organization structure and the segmentation is often affected by size volume of business, diversity of activity and geographic distribution of operations. In any event, the managers of segmented enterprises need accounting reports which are designed to aid them in planning, controlling, and evaluating the performance of the various segments.

Segmentation may occur in service enterprises as well as in businesses engaged mainly in merchandising or manufacturing activities. Segmented accounting reports are useful to management regardless of the type of activity.

10.2 ACCOUNTING FOR DEPARTMENTAL OPERATIONS

Accounting reports for departmental operations are generally limited to income statements. Although departmental income statements are usually not issued to stockholders or others outside the management group, the trend is toward providing more information of this type.

Analysis of operations by departments may end with the determination of gross profits or it may extend through the determination of net income.

Gross Profit by Departments

For a merchandising enterprise, the gross profit is one of the most significant figures in the income statement. Since the sales and the cost of merchandise sold are both, to large extent, controlled by departmental management, the reporting of gross profit by departments is useful in:

- cost analysis and control
- helping management in directing its efforts toward obtaining a mix of sales that will maximize profits. After studying such reports, management may decide to change sales or purchases policies, cut back or expand operations, or shift personnel to

achieve a higher gross profit for each department. Caution must be exercised in the use of such reports to insure that proposed changes affecting gross profit don't have an adverse effect on net income,

To compute gross profit by departments, it is necessary to determine by departments each element entering into gross profit. There are two basic methods of doing this

1. Setting up departmental accounts and identifying each element by department at the time of the transaction. It is usually used unless the time required in analyzing each transaction is too great, or
2. maintaining only one account for the element and then allocating it among the departments at the time the income statement is prepared. This method is likely to yield less accurate results than the first method but some degree of accuracy may be sacrificed to obtain a saving of time and expense.

The following are elements that must be departmentalized in order to determine gross profit by departments:

- Merchandise inventory
- Purchases
- Sales, and
- The related cash discounts, and returns and allowances

Some of the above elements may be identifiable directly to each department and some are not, which must be allocated based on different basis (e.g. based on quantity purchased).

When departmental accounts are maintained for each element, special departmental columns for recording transactions may be provided in the proper columns. For example, in a furniture store that sells furniture and carpeting, the sales Journal may have a credit column for Furniture sales

and a credit column for Carpet sales. To aid in the journalizing of departmental transactions, the supporting documents such as sales invoices, vouchers, and cash register readings must identify the department affected by each transaction.

An income statement showing gross profit by departments for Texas company, which has two sales departments, appears below.

Texas Company
Income Statement
For the year ended December 31,2000.

	Department X			Department Y			Total		
Revenue from sales:									
Sales		630,00			270,000			900,00	
Less: Sales returns and allowance		15,300			7,100			22,400	
Net sales			614,700			262,900			877,600
Cost of merchandise sold:									
Merchandise Inventory January1,2000		80,150			61,750			141,900	
Purchases	334,550			200,350			534,900		
Less: Purchase discount	<u>6200</u>	<u>328,350</u>		<u>2400</u>	<u>197,900</u>		<u>8600</u>	<u>526,300</u>	
Merchandise available for sale		408,500			259,700			668,200	
Less: merchandise Inventory, Dec. 31,2000		85,150			78,950			164,100	
Cost of Merchandise Sold			<u>323,350</u>			<u>180,750</u>			<u>504,100</u>
Gross Profit			<u>291,350</u>			<u>82,150</u>			373,500
Operating expenses:									
Selling expenses								<u>113.2</u>	

								<u>00</u>	
General Expense								<u>110,2</u> <u>00</u>	
Total operating expenses									<u>223,2</u> <u>00</u>
Income from operations									
Other expense:									<u>150,3</u> <u>00</u>
Interest expenses									2,500
Income before income tax									147,8 00
Income tax									<u>64,44</u> <u>4</u>
Net Income									<u>83,35</u> <u>0</u>

N.B. Usually the Operating expenses would be listed in detail. But here they are shown in condensed form for illustrative purpose.

Departmental reporting of income may be extended to the various sections of the income statement, such as gross profit less selling expenses (gross selling profit), gross profit less all operating expenses (operating income), income before income tax, or net income. The underlying principle is the same for all degrees of departmentalization i.e. to assign each department the related revenue and that part of the expenses incurred for its benefit.

Some expenses may be easily identifiable with the department benefited. For example, if each sales person is restricted to a certain sales department, the sales salaries may be assigned to the proper departmental salary accounts each time the payroll is prepared. On the other hand, the salaries of company officers, executives, and office personnel are not identifiable with the specific sales departments and must therefore be allocated if an equitable and reasonable basis for allocation exists

Many accountants prefer to apportion all operating expenses to the individual department only at the end of the accounting period. In this case, there is no need for departmental expense accounts in the general ledger and fewer postings are needed. The apportionments may be made on a worksheet, which serves as the basis for preparing the departmental income statement.

When operating expenses are allocated, they should be apportioned to the respective departments as nearly as possible in accordance with the cost of services rendered to them. Determining the amount of an expense chargeable to each department requires the exercise of judgment and considers the cost of collecting data for use in making an apportionment.

We have different basis of allocation of these costs. The following are common basis of allocation.

<u>Expenses</u>	<u>Basis of allocation.</u>
➤ Sales salary Expense.....	Payroll
➤ Advertising Expense.....	Sales
➤ Depreciation on Store Equipment.....	Average cost of Equipment
➤ Depreciation - on Building.....	Floor space occupied.
➤ Officers' Salaries Expense & Office Salaries	Relative amount of time

expense

devoted to each

department

- Rent Expenses, and Heating & Lighting Expense.....Floor space occupied.
- Property tax Expense & Insurance Expense.....Average cost of inventory &

Store

Equipment.

- Uncollectible Accounts Expense.....Sales
- Miscellaneous Selling Expense.....Sales
- Miscellaneous General Expense.....Sales
- Delivery Expense.....Quantity sold.
- Discounts.....Purchase
- Commission.....Sales

N.B. Basis of allocations may change whenever more reliable and readily available information is obtained.

For example, the apportionment of property tax expense and insurance expense for Texas co. may be done as follows:

	<u>Total</u>	<u>Department X</u>
<u>Department Y</u>		
Merchandise Inventory:		
January 1.....	Birr 141,900	Birr 80,150
Birr 61,750		
December 31.....	<u>164,100</u>	<u>85,150</u>
<u>78,95</u>		
Total.....	<u>306,000</u>	<u>165,300</u>
<u>140,700</u>		
Average	153,000	82,650
70,350		

Cost of store Equipment:

January 1.....	28,300	16,400
11,900		
December 31.....	<u>31,700</u>	<u>19,600</u>
<u>12,100</u>		
Total.....	<u>60,000</u>	<u>36,000</u>
<u>24,000</u>		
Average.....	30,000	18,000
12,000		
Total average.....	<u>183,000</u>	<u>100,650</u>
<u>82,350</u>		
Percent.....	100%	55%
45%		
Property tax expense.....	6,800*	3,740
3,060		
Insurance expense.....	3,900*	2,145
1,755		

*The total Property tax Expense and Insurance Expense are taken from the respective accounts of the company for the year.

The apportionment of Uncollectible Accounts Expense, Miscellaneous Selling Expense and Miscellaneous General Expense are based on sales as indicated above.

The computation of the apportionment is as follows:

	<u>Total</u>	<u>Department X</u>
<u>Department Y</u>		
Sales	Birr 900,000	Birr 630,000
Birr 270,000		
Percent	100%	70%
30%		

Uncollectible Account Expense	Br.4,600	Br.3,220
Br.1,380		
Miscellaneous Selling Expense	4,700	3,290
1,410		
Miscellaneous General Expense	4,800	3,360
1,440		

The other operating expenses will be apportioned in a similar manner. An Income Statement presenting income from operations by departments for Texas Company appears below.

Check Your Progress Exercise - 1

1. Ford Company apportions depreciation expense on equipment on the basis of the combined total of average cost of the equipment and average cost of the merchandise inventories. Depreciation expense on equipment amounted to Birr 110,000 and property tax expense amounted to Birr 26,000 for the year. Determine the apportionment of the Depreciation Expense and the Property tax Expense, based on the following data:

	<u>Average cost</u>
<u>Departments</u>	<u>Equipment</u>
<u>Inventories</u>	
Service	
R.....	Birr 120,000
M.....	60,000

Sales	
100.....	240,000.....Birr
160,000	
200.....	420,000.....
360,000	
300.....	<u>360,000</u>
<u>280,000</u>	
Total	..Birr. <u>1, 200,000</u> Birr.
<u>800,000</u>	

2. What are the uses of accounting reports by departments?

10.3 DEPARTMENTAL MARGIN APPROACH TO INCOME REPORTING

Not all accountants agree as to the merits of the type of departmental analysis discussed in the preceding section (income statement by operating income). Many cautions against complete reliance on such departmental income statements on the grounds that the use of arbitrary based in allocating operating expenses is likely to yield in correct amounts of departmental operating income. In addition, objection may be made to the reporting of operating income by departments on the grounds that departments are not independent operating units, but segments of a single business enterprise, and that therefore no single department of a business can by itself earn an income. For these reasons, the format of income statements of segmented businesses may follow a somewhat different format than the one illustrated previously. The alternative form emphasizes the contribution of each department to the operating expenses incurred on behalf of the business as a unified whole. Income statements prepared in this alternative form are said to follows the departmental margin or contribution margin approach to income reporting. Departmental margin is the term used to describe the excess of departmental gross profit over direct departmental expenses

i.e. Departmental margin = Departmental sales - Departmental cost of goods sold - direct departmental expense.

Prior to the preparation of an income statement in the departmental margin format, it is necessary to differentiate between operating expense that are direct and those that are indirect.

- **Direct expense** - Operating expenses directly traceable to or incurred for the sole benefit of a specific department and usually subject to the control of the departmental manager.
- **Indirect expense** - operating expenses incurred for the entire enterprise as a unit and hence not subject to the control of individual department managers.

An income statement in the departmental margin format for Texas Company is presented below.

Departmental Margin Analysis And Control

The importance of controlling expenses as an essential element of profit maximization has been emphasized throughout this material. The value of the departmental margin approach to income reporting derives largely from its emphasis on the assignment of responsibility for control. An accounting system that provides the means for such control is sometimes called ***responsibility accounting***.

With departmental margin analysis, the manager of each department can be held accountable for operating expense traceable to the department. A reduction in the direct expenses of a department will have a favorable effect on that department's contribution to the net income of the enterprise.

The departmental margin income statement may also be useful to management in making plans for future operations. For example, this type of analysis can be used when the discontinuance of a certain operation or department is being considered. If a specific department yields a departmental margin, it generally should be retained, even though the allocation of the indirect operating expenses would result in a net loss for that department. This observation is based on the assumption that the department in question represents a relatively small segment of the enterprise. Its termination, therefore, would not cause any significant reduction in the amount of indirect expenses.

However, the common decision criterion for elimination or retention of a department is to compare lost revenue with avoidable costs. Lost revenue refers to the revenue lost by the company if the department is eliminated. Avoidable costs refer to those costs that can be avoided if the department is eliminated. Direct expenses are avoidable whereas indirect expenses may be avoidable or unavoidable.

For example, assume that a company has two departments with the following data:

<u>Total</u>	<u>Department A</u>	<u>Department B</u>
Sales.....	Birr 900,000	Birr 600,000
Birr 1,500,000		
Cost of sales & operating expenses.....	<u>810,000</u>	<u>760,000</u>
<u>1,570,000</u>		
Operating income.....	.. <u>90,000</u>	Br. <u>(160,000)</u>
<u>(70,000)</u>		

Suppose 40% of total cost and operating expenses are unavoidable, should the company delete department B?

To answer this question we have to compare avoidable costs with lost revenues. If lost revenues greater than avoidable costs, the department should be retained but if lost revenues less than avoidable costs, the department should be eliminated. In the above example, avoidable costs are 60% of Birr 760,000 = 456,000 where as lost revenues are Birr 600,000. Lost revenues are greater than avoidable costs, therefore department B should be retained.

In addition to the above factors, there are others that may need to be considered. For example, there may be problems regarding the displacement of sales personnel. Or customers attracted by the least profitable department may make large purchases in other departments, so that discontinuance of that department may adversely affect the sales of other departments.

10.4 ACCOUNTING FOR BRANCH OPERATIONS

Branch is a segment of an organization, which is located far geographically. A business enterprise opens new branches in an effort to increase its sales and income. Although commonly associated with retailing branch operations are also carried on by banking institutions, service organizations, and many kinds of manufacturing enterprises.

Regardless of the nature of the business, each branch ordinarily has a branch manager. Within the framework of general policies set by top management, the branch manager may be given freedom in conducting the business of the branch. It is necessary to maintain a record of the assets at the branch locations and of liabilities incurred by each branch.

There are various systems of accounting for branch operations. The system may be highly centralized or completely decentralized or between these two extremes.

10.4.1 Centralized Accounting System

A system whereby the accounting for the branch is done at the home office (head office). The branch may prepare only the basic records of its transactions, such as sales invoices, time tickets for employees, and vouchers for liabilities incurred. Copies of all such documents are forwarded to the home office, where, they are recorded in proper journals in the usual manner. When this system is used, the branch has no journals or ledgers. If the operating results of the branch are to be determined separately, which is normally the case, separate branch accounts for sales, cost of merchandise sold, and expenses must be maintained in the home office ledger. The principles of departmental accounting will apply in such cases, with the branch being treated as a department.

One important result of centralizing the bookkeeping activities at one location may be substantial savings in office expense. There is also greater assurance of uniformity in accounting methods used. On the other hand, there is some likelihood of delays and inaccuracies in submitting data to the home office, with the result that periodic reports on the operations of a branch may not be available when needed.

10.4.2 Decentralized Accounting Systems

A system of accounting whereby the branch is responsible for the detailed accounting and only summary accounts carried for the branch by the home office. When the accounting for branches is decentralized, each branch maintains its own accounting system with journals and ledgers. The account classification for assets, liabilities, revenues and expenses in the branch ledger conforms to the classification used by the home office. The accounting processes are like those of an independent business, except that the branch does not have capital accounts. A special account entitled Home Office takes the place of the capital accounts. The process of preparing financial statements and adjusting and closing the accounts is substantially the same as for an independent business. In the remainder of this unit, we will discuss this system of branch accounting.

Check Your Progress Exercise - 2

1. What are the distinction between centralized and decentralized system of accounting for branch?

.....
.....
.....

Underlying Principles of Decentralized Branch Accounting

When the branch has a ledger with a full set of accounts except capital accounts, there must be some tie - in between the branch ledger and the general ledger at the home office. The properties at the branch are a part of the assets of the entire enterprise, and liabilities incurred at the branch are liabilities of the entire enterprise. Although the accounting system at the branch is much like that of an independent company, the branch is not considered a separate entity but only a segment of the business.

The tie - in between the home office and the branch is accomplished by the subsidiary ledger technique, with an added modification that makes

the branch ledger a self contained unit. The accounts are Home Office account and Investment in branch account. These two accounts represent the same item except their location. Investment at Branch is an asset account which is maintained at the head office whereas Home Office is a capital account maintained at the branch. These two accounts have always equal but opposite balances and are known as reciprocal accounts. The home office account in the branch ledger replaces the capital accounts that would be used if the branch were a separate entity. Actually, the account represents the portion of the capital of the home office that is invested in the branch.

Transactions that are usually made between the Home Office and the Branch are:

1. Transfer of assets from head office to branch. The assets may be cash, equipment etc.
2. Transfer of assets from branch to head office.
3. Reporting of operation income or loss by branch.

When the home office sends assets to the branch, it debits investment in branch account for the total and credits the proper asset accounts. Upon receiving the assets, the branch debits the proper asset accounts and credits Home office.

When the branch transfers assets to the home office, it debits the Home Office account and credits the proper asset accounts. Upon receiving the assets, the head office, debits the proper asset accounts and credits Investment in branch account.

As the branch incurs expenses and earns revenue, it records the transactions in the usual manner. Although such transactions affect the amount of the home office investment at the branch recognition of the change is delayed until the accounts are closed at the end of the accounting period. At that time, the Income Summary account in the

branch ledger is closed to the account Home Office. If the operations have resulted in an operating income, the account Home Office will be credited and Income Summary will be debited.

In the Home Office, an operating income at the branch is recorded by a debit to Investment in Branch and a credit to Branch Operating Income. For an operating loss, the entries would be just the reverse.

Illustration:

1. July 1, 2002 ABC. Co. (the home office) sent Birr 8000 to Bahir Dar Branch.
2. July 22, 2002 the branch sent Birr 5000 to the home office.
3. July 31, 2002 the branch reported an operating income of Birr 3000.

Record the above transactions in the Branch and head Office books.

Solution:

<u>Head office Book</u>		<u>Branch Book</u>	
2002 July 1	Investment in branch 8000	-Bahir Dar.....	8000
July 1	Cash.....	8000	Head office.....8000

(Home office)

2002 July 22	Cash.....	5000	Head
July 22	Investment in Branch	-Bahir Dar.....	5000
Cash.....	5000		

2002
July
31

2000	Investment in branch -Bahir Dar....	3000	Income
summary	3000		
July 31	Branch Operating income.....	3000	Head
office.....	3000		

In a merchandising business, the branch can get assets either from transfer of merchandise from head office or purchase from local supplier.

When the branch purchase items from outside suppliers no journal entry is necessary at head office and the branch record the purchase as if it is a separate business enterprise.

But when the branch obtains assets from head office the journal entries depend on whether perpetual or periodic inventory system is used.

When perpetual inventory system is used, a shipment of merchandise from the home office is recorded by the home office by debiting Investment in Branch and crediting Merchandise Inventory. The branch records the transactions by debiting merchandise inventory and crediting Home Office.

When periodic inventory system is used a shipment of merchandise from the home office is recorded by the home office by debiting Investment in Branch and crediting shipments to Branch. The branch records the transaction by debiting Shipments from Home Office and crediting Home Office. The two shipments accounts are also reciprocal accounts.

The account Shipments to Branch is a contra account representing a reduction in merchandise inventory and purchases in the home office ledger. A Shipment from Home Office, in the branch ledger, is like a purchase account. Both accounts are temporary in nature and are periodically closed to the respective Income Summary accounts.

Accounting Illustration of Decentralized Branch

Home office Entries

Branch Entries

Transactions

1. The home office established Branch #1 near the end of the fiscal year, sending Birr 20,000 in cash and Birr 40,000 in merchandise.

Investment	in	Branch	#1.....60,000
Cash.....	20,000		
Cash.....	20,000	Shipments from Head	
Office....	40,000		
Shipments to Branch #1.....	40,000	(Merchandise	
Inventory)			
		Head	
Office.....	60,000		

2. The branch purchased on account Birr 20,000 of merchandise, Birr 30,000 of equipments, and Birr 1,500 of Prepaid Insurance.

	Purchases.....
.20,000	
	(Merchandise
Inventory)	
	No need
Equipment.....	30,000
	Prepaid
Insurance.....	1500
	Accounts
payable.....	51,500

*Only entries and accounts affecting Branch #1 are presented.

3. The branch sold merchandise for Birr 36,000 in cash and Birr 21,000 on account

	Cash.....36,0
00	
	Account
Receivable...21,000	
	No need
Sales.....57,000	

4. The branch paid operating expenses of Birr 11,300.

	Operating expenses.....11,300
No need	Cash.....11,300

5. The branch collected Birr 12,000 on accounts receivable.

	Cash 12,000
No need	Account Receivable.....12,000

6. The branch paid Birr 32,000 on accounts payable.

	Account Payable.....12,000
No need	Cash 12,000

7. The branch sent Birr 10,000 in cash to the home office.

Cash.....10,000	Home Office.....10,000
	Investment in Branch # 110,000
Cash.....10,000	

Adjusting Entries.

- a) To record the branch ending merchandise inventory

	Merchandise Inventory.....	
22,000		
		Income
Summary.....	22,000	

N.B. if perpetual inventory system is
used no need of adjustment.

- b) To record the branch Insurance and Depreciation expense.

	Operating expenses.....	700	
			Prepaid
Insurance.....	200		
			Accumulated
Depreciation....	500		

- c) to close the branch sales account.

	Sales.....	57,000	
			Income
Summary.....	57,000		

- d) To close the branch cost and expense accounts.

	Income summary.....	72,000	
			Shipments from Head
office.....	40,000		
	Purchases.....	20,000	
	Operating expenses.....	12,000	

- e) To close the branch Income Summary account and to record the
operating income of the branch in the accounts of the home office.

Investment in Branch #1.....	7,000	Income summary
.....	7,000	

Branch # 1 operating income.....7,000	Home
office.....7,000	

After the foregoing entries have been posted, the Home Office accounts affected and the Branch ledger accounts appear as shown below.

<u>Branch ledger.</u>		<u>Home office ledger</u>	
	Cash		Cash
	(7) 10,000	(1) 20,000	(1)
20,000 (4) 11,300			(3)
36,000 (6) 32,000			(5)
<u>12,000</u> (7) <u>10,000</u>			68,00
0 53,300			Bal.
14,700			
			Accou
nts Receivable			(3)
21,000 (5) 12,000			Bal.
9,000			

Home office ledger

dis Inventory

1500 (b) 200

1300

Equipment

30,000

ulated Depreciation

(b) 500

Investment in Branch #1
Payable

(1)	60,000
(6)32,000	(2) 51,500

Branch ledger

Merchan

(a) 22,000

Prepaid Insurance

(2)

Bal.

(2)

Accum

Accounts

(7)

10,000

(e) 7,000
 Bal. 19,500
 Bal. 57,000

Bal. 15,500

me Office

10,000 (1) 60,000

(e) 7,000

Branch #1
 Bal. 57,000

(e) 7,000
 me Summary

72,000 (a) 22,000

* Branch operating income
 will be closed to the
 Income summary account.

57,000 (3) 57,000

Shipment to Branch #1

(1) 40,000
 s from Home office

40,000 (d) 40,000

*Shipments to Branch #1 is
 deducted from the sum of
 the beginning inventory and
 purchases. It will be closed
 to the Income Summary

	Ho
	(7)

	Inco
	(d)

(e) 7,000 (c) 57,000

Sales	
	(c)

	Shipment
	(1)

		<u>Purchases</u>	
		(d) 20,000 (1)	
20,000			
		-	-
			<u>Operat</u>
ing expense			
		(4) 11,300	
(d) 12,000			
			(b) <u>700</u>
		-	-

10.5 FINANCIAL STATEMENTS FOR HOME OFFICE AND BRANCH

Branch financial statements differ from those of a separate business entity in two major respects. In the Branch Income Statement, Shipments from the Home Office appear in the cost of merchandise sold section following Purchases. In the Branch Balance Sheet, the account Home Office takes the place of capital accounts.

The Home Office Income Statement reports details of sales, cost of merchandise sold, and income or loss from Home Office operations in the usual manner. The operating income and loss of each branch is then Listed, and the operating results for the entire enterprise are reported. The asset section of the balance sheet prepared from the Home Office ledger will include the controlling accounts for the various branches. The various asset and liabilities at the branch locations will not be disclosed.

The home office statements, together with financial statements for each individual branch, serve a useful purpose for management. They are not usually issued to stockholders and creditors. Accordingly, it is necessary

to combine the data on the income statements of the home office and the branches to form one overall income statement. The data on the balance sheet of the home office and of the various branches are also combined to form one balance sheet for the enterprise. The preparation of the combined statements is made easier by the use of worksheets. The worksheets are similar in that each has a column for the home office account balance, a column for the account balances of each branch, a set of columns headed "Eliminations" and a final column to which the combined figures are extended.

The combined income statement and the related worksheet for Kelles Corporation are as follows:

Keller Corporation
Worksheet for Combined Income statement
For the year ended December 31,2002.

	Home office	Branc h #1	Eliminations		Combined Income statement
			Debit	Credi t	
Sales	897,00 0	57,000			954,000
Cost of merchandise sold:					
Merchandise inventory January 1,2002	141,00 0				141,000
Purchases	<u>652,00</u> <u>0</u>	20,000			672,000

Shipments from Home Office		40,000		40,000	
Less: shipments to Branch #1	<u>40,000</u>	_____	<u>40,000</u>	<u>0</u>	_____
Merchandise available for sale	753,000	60,000			813,000
Less: merchandise Inventory December 31, 2002	<u>150,000</u>	<u>22,000</u>			<u>172,000</u>
Cost of merchandise sold	<u>603,000</u>	<u>38,000</u>			<u>641,000</u>
Gross Profit	294,000	19,000			313,000
Operating expenses	<u>150,500</u>	<u>12,000</u>			<u>162,500</u>
Income before income tax	<u>143,500</u>	<u>7,000</u>	<u>40,000</u>	<u>40,000</u>	<u>150,500</u>
	<u>0</u>		<u>0</u>	<u>0</u>	
Income tax					<u>66,740</u>
Net income					<u>83,700</u>

Keller Corporation

Income Statement

For the Year ended December 31, 2002

Sales		54,000
Cost of merchandise sold:		
Merchandise Inventory, January 1, 2002	141,000	
Purchases	<u>672,000</u>	
Merchandise available for sale	813,000	
Less: Merchandise Inventory, December 31, 2002	<u>172,000</u>	
Cost of merchandise sold		<u>641,000</u>
Gross profit		313,000
Operating expense		<u>162,500</u>
Income before income tax		150,500
Income tax		<u>66,740</u>
Net income		<u>83,760</u>

The account Shipments from Home Office is canceled by a Credit in the Elimination Column, and the account Shipments to Branch # 1 is canceled by a Debit in the Elimination Column. These eliminations are necessary in the preparation of a combined statement reporting the Home Office and the branch as a single operating unit. The two accounts merely record a change in location of merchandise within the company.

The combined balance sheet and the related worksheet for Keller Corporation are presented below. The reciprocal account Investment in Branch # 1 is canceled by a credit elimination; the reciprocal accounts Home Office is canceled by a debit elimination.

Killer Corporation
Worksheet for combined Balance Sheet
December 31,2002

	Home Office	Branch #1	Eliminations		Combined Balance sheet
			Debit	Credit	
Debit Balances					
Cash	62,000	14,700			76,700
Accounts Receivable	81,000	9,000			90,000
Merchandise Inventory	150,000	22,000			172,000
Prepaid Insurance	8,200	1300			9,500
Investment in Branch #1	57,000			57,000	
Equipment	<u>195,000</u>	<u>30,000</u>			<u>225,000</u>
Total	<u>553,200</u>	<u>77,000</u>			<u>573,000</u>
Credit Balance					
Accumulated depreciation	87,000	500			87,500
Accounts Payable	110,000	19,500			129,500
Home Office		57,000	57,000		
Common stock	200,000				200,000
Retained Earnings	156,200				156,200
Total	<u>553,200</u>	<u>77,000</u>	<u>57,000</u>	<u>57,000</u>	<u>573,200</u>

Keller Corporation

Balance sheet

December 31, 2002

Assets	Liability and Capital
Cash.....	Accounts
76,700	payable.....129,500
Accounts Receivable.....	
.....90,000	
Merchandise Inventory.....	Capital
172,000	
Prepaid	Common stock, Birr 10
Insurance.....9,500	per.....208,000
Equipment.....225,000	Retained
	earning..... <u>156,200</u>
Less: Accumulated dep ⁿ <u>87,500</u>	Total capital.....
	<u>356,200</u>
Total assets.....	Total liabilities & capital.....
<u>485,700</u>	<u>485,700</u>

10.6 SHIPMENTS TO BRANCH BILLED AT SELLING PRICES

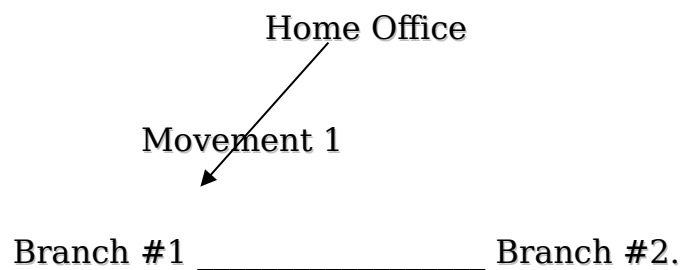
In the foregoing discussion and illustrations, the billing for merchandise shipped to the branch has been assumed to be at cost price. When all or most of the merchandise handled by the branch is supplied by the home office, billings are usually made at selling price. An advantage of this procedure is that it provides a convenient control over inventories at the branch. The branch merchandise inventory at the beginning of the period (at selling price), plus shipments during the period (at selling price), less sales for the period yields the ending inventory (at selling price).

Comparison of the book amount with the physical inventory taken at selling prices discloses any difference. A significant difference between the physical and book inventories indicates a need for remedial action by the management.

When shipments to the branch are billed at selling prices, no gross profit will be reported on the branch income statement. The merchandise inventory on the branch balance sheet will also be stated at the billed (selling) price of the merchandise on hand. In combining the branch statements with the home office statements, it is necessary to convert the data back to cost by eliminating the markup from both the Shipments accounts and the Inventory accounts.

Check Your Process Exercise -3

Area Company has established two branches Branch #1 and Branch #2. The transfer of assets(cash) among Home Office, Branch 1 and Branch 2 is as indicate below:



Movement 1: Transfer of cash by the home office to branch #1.

Movement 2: Transfer of cash by branch #1 to branch #2.

Required: Record movement 1 and movement 2 in the books of the Home Office, Branch #1

and Branch #2 assuming that Decentralized Accounting system is used (5 journal

entries are necessary)

.....
.....
.....

10.7 SUMMARY

Departmental accounting is more likely to be used by a large business than by a small one, but some degree of departmentalization may be used by a small enterprise. Accounting reports for departmental operations are generally limited to income statements although departmental income statements are not usually issued to external users.

In an effort to increase its sales and income a business enterprise may also open new branches (stores). Regardless of the nature of the business each branch ordinarily has a branch manager. Within the framework of general policies set by top management, the branch manager may be given freedom in conducting the business of the branch.

There are various systems of accounting for branch operations. The system may be highly centralized, with the accounting for the branch done at the home office. Or the system may be almost completely decentralized, with the branch responsible for the detailed accounting.

10.8 ANSWERS TO CHECK YOUR PROGRESS EXERCISE

Check Your Progress Exercise - 1

i) a) Apportionment of depreciation expense:

	<u>Total</u>	<u>Services Department</u>	<u>Sales</u>
	<u>Department</u>		
		<u>R</u>	<u>S</u>
			<u>100</u>
<u>200</u>	<u>300</u>		
Average cost of Equipment...	1,200,000	120,000	60,000
	420,000		240,000
	360,000		

Percent.....	<u>100%</u>	<u>10%</u>	<u>5%</u>	<u>20%</u>
	<u>35%</u>	<u>30%</u>		
Depreciation Expense.....	<u>110,000</u>	<u>11,000</u>	<u>5,508</u>	<u>22,000</u>
	<u>38,500</u>	<u>33,000</u>		

b) Apportionment of property tax expense

	<u>Total</u>	<u>Services Department</u>	<u>Sales</u>
	<u>Department</u>		
		<u>R</u>	<u>S</u>
		<u>100</u>	
<u>200</u>	<u>300</u>		
Average cost of Equipment			
& inventory.....	Br.2,000,000	120,000	60,000
	400,000		
	780,000	640,000	
Percent.....	<u>100%</u>	<u>6%</u>	<u>3%</u>
	<u>39%</u>	<u>32%</u>	
Property tax expense.....	<u>26,000</u>	<u>2,160</u>	<u>1,080</u>
	<u>10,140</u>	<u>8,320</u>	<u>5,200</u>

ii) The uses of Accounting reports by departments are

- for planning and allocating of resources.
- For controlling of operations.
- For evaluating performance

Check Your Progress Exercise - 2

In centralized system of accounting, the accounting for the branch is done at the head office. The branch is limited to business activities but in decentralized system of accounting, the detailed accounting activities are done by the branch.

Check Your Progress Exercise - 3

Branch #1 Book
Co/book

Branch #2 Book

Home office /Area

Movement 1. Cash.....XX
branch #1...XX

Investment in

Home Office...XX —

Cash.....XX

Movement 2 Home Office...XX
Investment in

Cash.....XX

Cash.....XX

Home office...XX

Branch #2....XX

Investment in

Investment in

Branch #1.....XX

10.9 MODEL EXAMINATION QUESTIONS

Part A. Multiple Choices

1. Which of the following would be the most appropriate basis for allocating rent expense

for use in arriving at operating income by department?

A. Departmental Sales

C. Cost of inventory

B. Physical space occupied

D. Time devoted to

departments.

2. On the income statement departmentalized through departmental margin, sales commission expense would be reported as:

A. a direct expense

C. as other expense

B. an indirect expense

C. none of the above.

3. In accounting for a firm with a colony west branch, the home office and colony west branch accounts are known as
- A. home office ledger accounts C. reciprocal accounts
 - B. branch ledger accounts D. none of the above.
4. In the worksheet for a combined income statement for the Home Office and its North side Branch what item is eliminated as an offset to Shipments to North side Branch?
- A. Home office C. Shipments from Home office
 - B. North side Branch D. None of the above.

Part B. Exercises

1. Describe the underlying principle of apportionment of operating expenses to departments for income statements departmentalized through income from operations.
2. Differentiate between a direct and an indirect operating expense.
3. What is the nature of reciprocal accounts employed in branch accounting?
4. a) What Home Office accounts are debited and credited to record the operating income of the Columbus Branch?
b) What branch accounts are debited and credited to close the Columbus Branch Income Summary account
5. Where are the journals and ledgers detailing the operations of a branch maintained in
 - a) a centralized system for branch accounting?
 - b) A decentralized system?
6. During the year, the Home Office shipped to the Branch merchandise that had cost Birr 300,000. The branch was billed for Birr 420,000, which was the selling price of the merchandise. No

merchandise was purchased from any outside sources. Branch net sales for the year totaled Birr 380,500. All sales were made at the billed price. Merchandise on hand at the beginning of the period totaled Birr 68,300 at the billed price. Merchandise on hand at the end of the period as determined by physical count was Birr 101,470 at the billed price. Determine the amount, at the billed price, of any discrepancy between the book amount and the physical count of inventory.

10.10 REFERENCE BOOKS

1. Fees and Warren: Principles of Accounting, 16th Edition
2. Fees and Warren: Principles of Accounting, 14th Edition.

Part C. Work out

	<u>Branch # 1 Book</u>	<u>(Area Co.) Home</u>
<u>office book</u>		
Movement 1.	Cash.....XX	Investment in
Branch #1...XX		
		Home Office.....XX
Cash.....XX		
Movement 2.	Home office.....XX	Investment
in branch#2...XX		
	Cash.....XX	Investment in
branch#1....XX		

Branch # 2 book

Movement 1.	No need of journal entry.
Movement 2.	Cash.....XX
	Home office.....XX

10.11 GLOSSARY

1. **Branch:** Segment of an organization, which is located far geographically.
2. **Centralized accounting system:** a system of accounting whereby the accounting for the branch is done at the head office.
3. **Decentralized accounting system:** a system of accounting whereby the branch is responsible for the detailed accounting and only summary accounts carried for the branch by the home office.
4. **Departmental margin:** departmental gross profit less direct departmental expense.
5. **Direct expense:** an expense directly traceable to or incurred for the sole benefit of a specific department and ordinarily subject to the control of the department manager.
6. **Shipment to branch accounts** - a contra account representing a reduction in merchandise inventory and purchases in the home office.