UNIT-3 INVENTORY VALUATION METHODS STRUCTURE

11.0 OBJECTIVES After going through this lesson, you should be able: · To know the meaning and objectives of inventory valuation. · To understand the different methods of inventory valuation, their advantages and disadvantages. · To know the suitability of various methods of inventory

INTRODUCTION

The literary meaning of the word inventory is stock of goods. To the finance manager, inventory connotes the value of raw materials, consumable, spares, work-in-progress, finished goods and scrap in whicha company's funds have been invested. It constitutes the second largest items after fixed assets in the financial statements, particularly of manufacturing organisation. It is why that inventory valuation and inventory control have become very important functions of the accountants and finance managers. The persons

interested in the accounting information assume that the financial statements contain accurate information. However, it is often observed that the financial statements don't provide actual information about some of the items, e.g. inventory and depreciation. This may be because of the variety of inventory valuation methods available with the accountant.

According to the International Accounting Standard-2 (IAS-2), 'Inventories' mean tangible property held;

(a) for sale in the ordinary course of business,

(b) in the process of production for such sale, or

(c) for consumption in the production of goods or services for sale.

Hence, the term inventory includes stock of (i) raw material and components, (ii) work-in-progress and finished goods. In case of manufacturing concern, inventory consists of raw materials, components, stores, semi-finished products and finished goods in case of a trading concern inventory primarily consists of finished goods.

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OBJECTIVES OF INVENTORY VALUATION

Following are the objectives of inventory valuation:

a) Determination of Income

A major objective of inventory valuation is the proper determination of income through the process of matching appropriate cost against revenues. Gross profit is found out by deducting cost of goods sold from sales. Cost of goods sold is purchases plus opening stock minus closing stock. Hence, closing stock must be properly valued and brought into accounts. Over valuation of closing stock leads to inflation of the current year profits and deflation of the profits of succeeding years. Similarly, undervaluation leads to deflation of current years profit and inflation of the profit of the succeeding years.

b) Determination of financial position

In the balance sheet, "inventory' is a very important item. It is to be shown as current asset in the balance sheet at the end of the year. If the inventory is not properly and correctly valued, to that extent the balance sheet does not give true and fair view of the financial position of the business. Keeping in view the above objectives the auditor's duty in relation to the verification and valuation of inventories becomes more important. Therefore, while verifying he should ensure that stock taking is done by responsible a officer, stock figures match with that of stock registers, and the basis of valuation has been consistently the same from year to year. Moreover, he should carry out test checks to ensure the accuracy of valuation.

METHODS OF RECORDING INVENTORY

The records of quantity and value of inventory can be made in two ways. These as follows:

(i) Periodic Inventory System

(ii) Perpetual Inventory System

Periodic Inventory System

Under this system the quantity and value of inventory is ascertained by physically counting the stock at the end of the year and as on the accounting date. In case of big business houses, annual stock taking may even take a week at the end of the year in finalising the stock in hand on continuous basis. In case of this system certain items are physically counted, while others are weighed in kilos or tonnes or measured in litters. For stock taking stock sheets are used. The firms evolve such a performa of stock sheet on which all the relevant information like particulars of inventory, numbers of units, price per unit, total value, etc. can be listed and added so as to get the figure of inventory. This method offers the advantage of simplicity. Also, there is no used to maintain the various records to be maintained under perpetual inventory system. However, the limitation of this method is that discrepancies and losses in inventory will never come to light as it makes no accounting for theft, losses, shrinkage and wastage.

Perpetual Inventory System

This system provides as running record of inventories on hand because under this method stock registers are maintained which will give the inventory balance at any time desired. According to the Institute of Cost and Management Accountants, London, it is "a system of records maintained by the controlling department which reflects the physical movement of stocks and their current balance." The stores ledger will give the balance of raw materials, work-in-progress and finished goods on hand. Because of this it is for the management to provide for continuous stock-taking, so that by comparing the physical balance with book balance, any discrepancies are ascertained immediately.

In this system business need not be suspended for the purpose stock taking. The main advantage of this method is that it provides details about the quantity and value of stock of each item all times. Thus it provides a basis for control. The main drawback of this system is that it requires elaborate organisation and records and, therefore, it is more expensive.

METHODS OF VALUATION OF INVENTORIES

The basic methods of valuation of inventories are as follows:

(a) Historical cost based method

(b) Sale price based method

(c) Lower of cost or sale price

11.4.1 Methods based on Historical cost

According to AS-2 historical cost is the aggregate of costs of purchases, costs of conversion and other costs incurred in the normal course of business in bringing the inventories to their present locations and condition. Cost of purchase comprises purchase price, duties and taxes, freight inwards and other expenditure directly attributable to acquisitions. However, selling expenses such as advertisement expenses or storage cost should not be included.

The valuation of inventory at cost price will be in consonance with the realisation concept. According to this concept, revenue is not realised until the sale is complete and the inventory is converted into either cash or accounts receivable. There can thus be no recognition of revenue accretion except at the point of sale.

This is a method with very high objectivity since the inventory valuer has to base it on a transaction which is completely verifiable. The main limitation of this method is its inability to distinguish operational gains from holding gains during period of inflation. **(Note:** *Holding gain*

refers to profits which arises as a result of holding inventories during inflation). They may be attributed to the fact that this method matches the past inventories against revenues which have current relations. Thus, this system will result in the inclusion of "inventory profits" (i.e. holding gain) in the income statements during periods of rising prices.

Now, we shall describe the various methods for assigning historical costs to inventory and goods sold.

1. First In First Out Method (FIFO)

This method is based on the assumption that the materials which are purchased first are issued first. Issues of inventory are priced in order of their purchases. Inventory issues/sales are priced on the same basis until the first lot of material of goods purchased is exhausted. Thus, units issued are priced at the oldest cost price listed on the stock ledger sheets. Under this system it is not necessary that the material which were longest in stock are exhausted first. But the use of FIFO necessarily mean that the oldest costs are first used for accounting purposes. In practice, an endeavour is made by most business houses to sell of oldest merchandise or materials first. Hence when this system is followed the closing stock does not consist of most recently purchased goods.

Advantages: The following are the advantages of this method:

(i) This method is easy to operate, provided the prices of materials do not fluctuate frequently.

(ii) It gives such a value of closing stock which is vary near to current market prices since closing inventory is made of most recently purchased goods.

(iii) It is a realistic method because it takes into account the normal procedure of issuing goods/inventory, i.e. the

materials are issued to production in the order of their receipts.

(iv) As it is based on historical cost, no unrealised profit enters into the financial statements for the period.

Disadvantages: This method suffers from the following limitations:

(i) Because of violent changes in prices of materials, it involves somewhat complicated calculations and, therefore, it involves somewhat complicated calculations and, therefore, increase the changes of clerical errors.

(ii) The prices of issues of materials may not reflect current market prices and, therefore, during the period of inflation, the charge to production is unreasonably low.

(iii) Comparison between different jobs executed by the firm becomes sometimes difficult. A job commenced a few minutes before another job might have consumes the supply of lower priced stock. This is particularly because of that the fact the first job might have completely exhausted the supply of materials of a particular lot.

Suitability

FIFO method is considered more suitable during the periods of falling prices. The reason is that the higher price at which the purchase of materials was made earlier stands recovered in cost. This method is suitable when the size of purchases is large but not much frequent. The moderate fluctuations in the prices of materials, and easy comparison between different jobs are also the important conditions for the use of this method.

2. Last in First Out Method (LIFO)

Under this method, it is assumed that the material/goods purchased in the last are issued first for production and those received first issued/sold last. In case a new delivery is received before the first lot is fully used, price become the 'last-in' price and is used for pricing

issued until either the lot is exhausted or a new delivery is received.

As stated above, materials are issued to production at cost which may be vary near to current marked price. However, inventories at the end will be valued at old prices which may be out of tune with the current maked price.

Advantages:

(i) This method takes into account the current market circumstances while valuing materials issued to various jobs or ascertaining the cost of goods sold.

(ii) No unrealised profit or loss is usually made in case this method is followed.

Disadvantages:

(i) The stock in hand is valued at a price which have become out-of-date when compared with the current inventory prices.

(ii) This method may not be acceptable for taxation purposes since the value of closing inventory may be quite different from the current market value.

(iii) Comparison among similar jobs is very difficult because they may bear different issue prices for materials consumed.

Suitability: This method is most suitable for materials which are of a bulky and non-perishable type.

3. Highest-in-First-our (HIFO)

According to this method, the highest priced materials are treated as being issued first irrespective of the date of purchase. In fact, the inventory of materials or goods are kept at the lowest possible price. In periods of rising prices the closing inventory is undervalued and thus secret reserves are created. However, the highest cost of materials is recovered first. Consequently, the closing inventory amount remains at the minimum value. Hence, this method is very appropriate when the prices are frequently fluctuating. As this method involves calculation more than that of LIFO and FIFO methods, it has not been adopted widely.

4. Base stock method

The base stock method assume that each business firm whether small or large must held a minimum quantity of materials finished foods at all times in order to carry on business smoothly. These minimum quantity of inventories are valued at the cost at which the base stock was acquired. It is assumed that the base stock is created out of the lot purchased. Inventories over and above the base stock are valued according to some other appropriate method such as FIFO, LIFO, etc.

AS-2 recommends the use of this method in exception circumstances only. This is because of the fact that a large number of companies customarily maintain a minimum stock level at all times irrespective of its requirement. Actually, sometimes base stock method is used without its justification. Therefore, this method requires a clear

existence of the circumstances which require that a minimum level of charging out inventory of raw material and finished goods at actual cost along with merits and demerits of the method which is used for valuation other than the base stock method.

5. Specific Identification Method

Under this method, each item of inventory is identified with its cost. The value of inventory will be constituted by the aggregate of various cost so identified. This method is very suitable for job order industries which carry out individual or goods have been purchased for a specific job or customer. In other words, this method can be applied only where materials used can be specifically and big items such as high quality furniture, paintings, metal jewellery, cars, etc.

However, this method is not appropriate in most industries because of practical problems. For instance, in case of manufacturing company having numerous items of inventory, the task of identifying the cost of every individual item of inventory becomes very cumbersome. Also, it promotes the chances of manipulating the cost of goods sold. It can be done by selecting items that have a relatively high cost or a relatively low cost, as he desires.

6. Simple average Price (SAP)

This is the average of prices of different lots of purchase. Under this method no consideration is given to the quantity of purchases in various lots. For example the purchases of 500 units of materials at Rs. 10 per unit are made as on 5th January, 1995 and 800 units of materials at Rs. 14 per unit on 10th January. If at the end 200 units remains unissued/unsold, these will be valued at Rs. 12 = [(10 + 14)/2]per unit and hence, the closing inventory will be shown at Rs. 2400 (200 × 12 = 2400). In fact, this method operated on the principle that when items of materials are purchased in big lots and are put in godown, their identity is lost and, therefore, issues should be priced at the average price of the lots in godown.

PROBLEMS ON FIFO AND LIFO

The following is the record of receipts of certain materials during the month of January 2006:

Jan. 2 Received 500 Units @ Rs.20 per unit

Jan. 3	Received 400 Units	@ Rs. 21 per unit
Jan. 15	Received 300 Units	@ Rs. 19 per unit
Jan. 28	Received 400 Units	@ Rs. 20 per unit

The physical inventory taken on 31st January, 2006 shows that there are 600 units in hand. Compute the inventory value on 31st January, 2006 by FIFO method.

Solution: Under FIFO method, closing inventory includes recent purchases at most recent prices. Hence, the value of the inventory on 31st January will be as follows:

January 28	Purchases	400 units	@ Rs. 20	= Rs. 8000
January 15	Purchases	200 units	@ Rs. 19	= Rs. 3800
				Rs. 11, 800

Here, the value of inventory as on 31st January 2006 has been arrived as on the presupposition that the firm uses periodic inventory system, the value of inventory would remain the same even if the perpetual inventory system is in use. To take an example, if out of 1000 units issued, 300 units were issued on January 5, while 700 units were issued on January 16, the valuation of inventory using perpetual inventory system will be done as follows:

STOCK LEDGER

Date	Receipts			Issues			Balance	
	Qty.	Rate	Amount (Rs.)	Qty.	Rate	Amount (Rs.)	Qty.	Amount (Rs.)
Jan.2	500	20	10,000	--	--	--	500	10,000
Jan.3	400	21	8.400	--	--	--	900	18,400
Jan. 5	--	--	--	300	20	6000	600	12,400
Jan.l5	300	19	5,700	--	--	--	900	18,100
Jan.16	--	--	--	200	20	4,000		
				400	21	8,400		
				100	19	1,900	200	3,800
Jan.28	400	20	8,000	--	--	--	600	11,800

From the above stock ledger it is obvious that the value of ending inventory under FIFO method is same in case of both periodic and perpetual inventory systems.

Illustration: With the information given in illustration (1), compute the inventory value on 31st Jan. 1998 by LIFO method. Also prepare a store ledger account showing how the receipts and issues on 5th Jan and 700 units issued on 16th January 2006.

Solution: Under LIFO method, closing inventory includes most old purchases remaining unissued till last date. Hence, valuation of inventory under periodic inventory system would be as follows:

Hence, the value of the inventory on 31st January will be as follows:

Jan. 2	Purchases	200 units	@Rs.20	= Rs. 4,000
Jan. 28*	Purchases	400 units	@Rs.20	= Rs.8,000
				Rs. 12,000

Valuation of Inventory under perpetual inventory system

STOCK LEDGER

Date	Receipts			Issues			Balance	
	Qty	Rate	Amt. (Rs.)	Qty	Rate	Amt. (Rs.)	Qty	Amt. (Rs.)
Jan 2	500	20	10,000	-	-	-	500	10,000
Jan 3	400	21	8,400	-	-	-	900	18,400
Jan 5	-	-	-	300	21	6,300	600	12,100
Jan 15	300	19	5,700	-	-	-	900	17,800
Jan 16	-	-	-	300	19	5,700		
				100	21	2,100		
				300	19	6,000	200	4,000
Jan 28	400	20	8,000	-	-	-	600	12,000
Jan 31	-	-	-	-	-	-	600	12,000

*Closing entry of 600 units includes 200 units purchased on 2nd January but remained unissued and 400 units purchased on 28th January remaining unissued upto 31st January.

7. Weighted Average Price (WAP)

Under this method, the quantity of material purchased in various lots of purchases is considered as weight while pricing the materials. Weighted average price is calculated by dividing the total cost of material in stock by the total quantity of material at the end. When this method is adopted, the question of profit or loss out of varying prices does not arise because it evens out the effect of widely fluctuating prices of different lots

of purchases. This method is very popular because it reduces calculations and is based on quantity and value of material purchased.

Illustration: The following are the details of transactions regarding receipt and issue of materials:

Date	Quantity received	Rate	Quantity issued
Jan.2, 2006	100	Rs. 1.00	—
Jan.9, 2006	150	Rs. l.20	—
Jan.14, 2006	—	—	125
Jan.17, 2006	250	Rs. l.30	—
Jan.19, 2006	—	—	100

You are required to prepare a stock ledger pricing the issue at (i) Simple average price and (ii) Weighted average price.

Solution:

(i) **Simple Average Price Method**:

STOCK LEDGER

Date	Receipts			Issues			Balance	
2006	Qty.	Rate	Amount	Qty.	Rate	Amount	Qty.	Amount
Jan.2	100	l.00	100	—	—	—	100	100
Jan.9	150	1.20	180	—	—	—	250	280
Jan.14	—	—	—	125	1.10[a]	137.50	125	143
Jan.17	250	1.30	325	--	—	—	375	518
Jan.19	—	—	—	100	1.25[b]	125.00	275	393

Working Notes

Average price on 14.1.2006 = (1.00 + 1.20)/2 = Rs. 1.10

Average price on 19.1.2006 = (1.20 + 1.30)/2 = Rs. 1.25

ACCOUNTING FOR DEPRECIATION

STRUCTURE

Summary

Keywords

Self assessment questions

12.1 References/suggested readings

12.0 OBJECTIVES

After going through this lesson, you should be able to-

- Know the meaning, need and causes of depreciation.
- Know the different methods of charging depreciation.
- Understand the accounting treatment of charging depreciation.

12.1 INTRODUCTION

The term depreciation refers to the reduction in or loss of quality or value of a fixed asset through wear or tear in or tear, in use, effusion of time, obsolescence through technology and market changes or from any other cause. Depreciation take place in case of all fixed assets with certain possible exceptions e.g. land and antiques etc, although the process may be invisible or gradual. Depreciation does take place irrespective of regular repairs and proper maintenance of assets. The word 'depreciation' is closely related to the concept of business income. Unless it is charged against revenues, we cannot say that the business income has been ascertained properly. This is because of the fact that the use of long term assets tend to consume their economic value and at some point of time these assets become useless. The economic value so consumed must be recovered from the revenue of the firm to have a proper measure of its income. Hence, the reader's must understand that the process of charging depreciation is the technique used by accountants for recovering the cost of fixed assets over a period.

The following definition will make the understanding of the concept of depreciation more convenient to the learner's. According to IAS-4, "Depreciation is the allocation of the depreciable amount of an asset over its estimated useful life,"

According to AS-6, "depreciation is a measure of wearing out, consumption or other of value of a depreciable asset arising from use, effusion of time or obsolescence through technology and market changes. Depreciation is allocated so as to charge a fair proportion of the depreciable amount in each accounting period during the expected useful life of the assets. Depreciation includes amortisation of assets whose useful life is pre determined."

The American Institute of Certified Public Accountants (AICPA) employed the definition as given below

"Depreciation Accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage value (if any) over the estimated useful life of unit (which may be a group of assets) in a systematic and retional manner. It a process of allocation, not of valuation. Depreciation for the year is the portion of the total charge under such a system that is allocated to the year."

From the above definitions it is clear that each accounting period must be charged with a fair proportion of the depreciable amount of the asset, during the expected useful life of the asset. Depreciable amount of an asset is its historical cost less the estimated residual value. Finally, it could be concluded that depreciation is a gradual reduction in the economic value of an asset from any cause.

Depreciation, Depletion and Amortisation: The terms depreciation, depletion and amortisation are used often interchangeably. However, these different terms have been developed in accounting usage for describing this process for different types of assets. These terms have been described as follows:

Depreciation: Depreciation is concerned with charging the cost of man made fixed assets to operation (and not with determination of asset

value for the balance sheet). In other words, the term 'depreciation' is used when expired utility of physical asset (building, machinery, or equipment) is to be recorded.

Depletion: This term is applied to the process of removing an available but irreplaceable resource such as extracting coal from a coal miner or oil out of an oil well. Depletion differs from depreciation in that the former implies removal of a natural resource, while the latter implies a reduction in the service capacity of an asset.

Amortisation: The process of writing off intangible assets is termed as amortisation. The intangible assets like patents, copyrights, leaseholds and goodwill are recorded at cost in the books of account. Many of these assets have a limited useful life and are, therefore, written off.

Obsolescence: It refers to the decline in the useful life of an asset because of factors like (i) technological advancements, (ii) changes in the market demand of the product, (iii) legal or other restrictions, or
(iv) improvement in production process.

12.2 CAUSES OF DEPRECIATION

The depreciation occurs because of the following:

1. **Constant use**: The constant use of assets results into their wear and tear, which in turn reduces their working capacity. Hence, a decrease in the value of assets may be seen due to reduced capacity. The value of assets like, machinery, furniture, etc., declines with the constant use of them.

2. **Passage of Time**: Many fixed assets lose their value with the passage of time. This holds true in case of intangible fixed assets such as patents, copy rights, lease hold properties,

etc. The term "amortisation" is generally used to indicate the reduction in the value of such assets.

3. **Depletion**: Depletion also causes decline in the value of certain assets. This is true in case of wasting assets such as mines, oil wells and forest-stands. On account of continuous extraction of minerals or oils, these assets go on declining in their value and finally they gets completely exhausted.

4. **Obsolescence**: There may not be any physical deterioration in the asset itself. Despite of this there may be reduction in the utility of an asset that results from the development of a better method, machine or process. For example, an old machine which is still in good working condition may have to be replaced by a new machine because of the later being more economical as well as efficient. In fact, new inventions, developments in production processes, changes in demand for product or services, etc. make the asset out of date.

5. **Accidents**: An asset may get reduction in its value if it meets an accident.

6. **Permanent Fall in the Market Value**: Certain assets may get permanent fall in their value and this decline in their value is treated as depreciation. For example, a permanent decline in the market value of securities and investment may be assumed as depreciation

12.3 NEED FOR PROVIDING DEPRECIATION

The need for providing depreciation arises on account of the following points:

1. **To Ascertain the Profits or Losses**: The true profits or losses could be ascertained when all costs of earning revenues have been properly charged against them. Fixed assets like building, plant and machinery, furniture, motor vehicles etc are important tool in earning business income. But the cost of the fixed asset is not charged to profit and loss of the accounting period in which the asset is purchased. Therefore, the cost of the fixed asset less its salvage value must be allocated rationally to the periods that receive benefit from the use of the asset. Thus, depreciation is an item of business expense and must be provided for a proper matching of costs with the revenue.

2. **To show the Asset as its Reasonable Value**: The assets get decrease in their value over a period of time on account of various such as passage of time, constant use, accidents, etc. Therefore, if the depreciation is not charged then the asset will appear in the balance sheet at the over stated value. This practice is unfair as the balance sheet fail to present the true financial position.

3. **Replacement of assets**: Business assets become useless at the expiry of their life and, therefore, need replacement. The cash resources of the concern are saved from being distributed by way of dividend by providing for depreciation. The resources so saved, if set aside in each year, may be adequate to replace it at the end of life of the asset.

4. **To Reduce Income Tax**: If tax is paid on the business income without providing for depreciation then it will be in excess to the actual income tax. This is a loss to the business

man. Thus, for calculating tax, depreciation should be deducted be from income similar to the other expenses.

12.4 BASIC ELEMENTS OF DEPRECIATION

In order to assess depreciation amount to be charged in respect of an asset in an accounting period the following three important factors should be considered:

1. **Cost of the asset**: The knowledge about the cost of the asset is very essential for determining the amount of depreciation to be charged to the profit and loss account. The cost of the asset includes the invoice price of the asset less any trade discount plus all costs essential to make the asset usable. Cost of transportation and transit insurance are included in acquisition cost. However, the financial charges such as interest on money borrowed for the purchase for the purchase of the asset should no be included in the cost of the asset.

2. **Estimated life of the asset**: Estimated life generally means that for how many years or hours an asset could be used in business with ordinary repairs for generating revenues. For estimating useful life of an asset one must begin with the consideration of its physical life and the modifications, if any, made, factors of obsolescence and experience with similar assets. In fact, the economic life of an asset is shorter than its physical life. The physical life is based mostly on internal policies such as intensity of use, repairs, maintenance and replacements. The economic life, on the other hand, is based mostly on external factors such as obsolescence from technological changes.

3. **Scrap Value of the Asset**: The salvage value of the asset is that value which is estimated to be realised on account of the sale of the asset at the end of its useful life. This value should be calculated after deducting the disposal costs from the sale value of the asset. If the scrap value is considered as insignificant, it is normally regarded as nil

12.5 METHODS OF RECORDING DEPRECIATION

There are two methods of recording depreciation in the books of accounts:

12.5.1 When a provision for depreciation account is maintained

The following journal entries are passed in case method is followed:

i) Depreciation account Dr.
To provision for Depreciation Account
(for providing depreciation)

ii) Profit and loss Account Dr.
To Depreciation account
(for closing depreciation account)

iii) Provision for Depreciation account Dr.
To Asset Account
(entry on sale of an asset)

iv) Any amount realised on account of sale of the asset is credited to the Asset Account. The balance, if any, in the Asset Account is transferred to the profit and loss Account.

12.5.2 When a provision for depreciation account is not maintained

The following journal entries are passed in this method:

i) Depreciation account Dr.

To Asset Account

(Entry for providing depreciation)

ii) Profit and loss Account Dr.

To Depreciation Account

(Entry for closing Depreciation Account)

iii) In case the asset is sold, the amount realised is credited to the Asset Amount. Any profit or loss on sale of the asset is transferred to the Profit and loss account.

12.6 METHODS OF CALCULATING DEPRECIATION

The following are various methods of depreciation in use:

1. Fixed instalment method or straight line method.
2. Machine hour rate method.
3. Diministing Balance method.
4. Sum of years digits method
5. Annuity method
6. Depreciation Fund Method
7. Insurance Policy Method
8. Depletion Method.

1. Straight Line Method

This is also known as fixed instalment method. Under this method the depreciation is charged on the uniform basis year after year. When the amount of depreciation charged yearly under this method is plotted on a graph paper, we shall get a straight line. Thus, the straight line method assumes that depreciations is a function, of time rather than use in the sense that each accounting period received the same benefit from using the asset as every other period. The formula for calculating depreciation charge for each accounting period is:

Amount of annual Depreciation =

$$\frac{\text{Original cost of the fixed assets - Residual value}}{\text{Estimated Life in years}}$$

For example, if an asset cost Rs. 50,000 and it will have a residual value of Rs. 2000 at the end of its useful life of 10 years, the amount of annual depreciation will be Rs. 4800 and it will be calculated as follow:

$$\text{Depreciation} = \frac{\text{Rs. 50,000 - 2000}}{\text{10 Years}} = \text{Rs. 4800}$$

This method has many shortcomings. First, it does not take into consideration the reasonal fluctuations, booms and depression. The amount of depreciation is the same in that year in which the machine is used day and night to that in the another year in which it is used for some months. Second, it ignores the interest on the money spent on the acquisition of that asset. Third, the total charge for use of asset (i.e., depreciation and repairs) goes on increasing form year to year though the assets might have been use uniformly from year to year. For example, repairs cost together with depreciation charge in the beginning years is much less than what it is in the later year. Thus, each subsequent year is burdened with grater charge for the use of asset on account of increasing cost on repairs.

Illustration: H. Ltd. purchased a machinery on 1st January 1990 for Rs. 29000 and spent Rs. 2000 on its carriage and Rs. 1,000 on its erection. Machinery is estimated to have a scrap value of Rs. 5000 at the end of its useful life of 5 year. The accounts are closed every year on 31st December. Prepare the machinery account for five years charging depreciation according to straight line method.

Solution

MACHINERY ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1990	To Bank	22000	Dec. 31	By Depreciation	4000
Jan. 1	To Bank	2000	"	By Balance C/d	21000
	To Bank	1000			
		25000			25000
1991	To Balance b/d	21000	1991	By Depreciation	4000
Jan.1			Dec.31	Balance c/d	17000
		21000			21000
1992	To Balance/b/c	17000	1992	By Depreciation	4000
Jan.1			Dec. 31	By Balance c/d	13000
		17000			17000
1993	To Balance b/c	13000	1993	By Depreciation	4000
Jan.1			Dec.31	By Balance	9000
		13000			13000
1994	To Balance b/d	9000	1994	By Depreciation	4000
Jan.1			Dec.31	By Balance c/d	5000
		9000			9000

This method is very suitable particularly in case of those assets which get depreciated more on account of expire of period e.g. lease hold properties, patents, etc.

2 .Machine Hour Rate Method

In case of this method, the running time of the asset is taken into account for the purpose of calculating the amount of depreciation. It is suitable for charging depreciation on plant and machinery, air-crafts, gliders, etc. The amount of depreciation is calculated as follows:

$$= \frac{\text{Acquisition cost of the assets - Scrap value}}{\text{Life of the Asset in hours}}$$

For example, if machinery has been purchased for Rs. 20000 and it will have a scrap value of Rs. 1000 at the end of its useful life of 1900 hours, the amount of depreciation per hour will be computed as follows:

$$\text{Depreciation} = \frac{\text{Acquisition cost of the assets - Scrap value}}{\text{Life of the Asset in hours}}$$

$$= \frac{\text{Rs. } 20{,}000 - 1{,}000}{1900 \text{ hours}}$$

= Rs. 10 per hour

If in a particular year, the machine runs for 490 hours, the amount of depreciation will be Rs. 4900 (i.e., Rs. 10x490). It is obvious from this example that under machine hour rate method the amount of depreciation is closely related with the frequency of use of an asset.

The simplicity in calculations and under standing is the main advantage of this methods. However, it can be used only in case of those assets whose life can be measured in terms of working time.

2. Diministing Balance Method

This is also known as Written down value method [WDV]. Under the diminishing balance method depreciation is charged at fixed rate on the reducing balance (i.e., cost less depreciation) every year. Thus, the amount of depreciation goes on decreasing every year. Under this method also the amount of depreciation is transferred to profit and loss account in each of the year and in the balance sheet the asset is shown at book value after reducing depreciation from it. For example, if an asset is purchased for Rs. 10,000 and depreciation is to be charged at 20% p.a. on reducing balance system then the depreciation for the first year will be Rs. 2000. In the second year, it will Rs. 1600 (i.e. 20% of 8000), in the third year Rs. 1280 (i.e. 20% of 6400) and so on. The rate of depreciation under this method can be computed by using the following formula:

$$\text{Depreciation rate} = -1 \sqrt[n]{\frac{\text{Net scrap value}}{\text{Initial value}}}$$

For example, if the cost of an asset is 27000, scrap value Rs. 3375, economic life 3 year, the rate of depreciation would be:

$$\text{Depreciation Rate} = 1 - \sqrt[3]{\frac{3375}{27000}}$$

$$= 1 - \frac{15}{30} = 50\%$$

Merits of Diministing Balance Method

3. It is very easy to understand and calculate the amount of depreciation despite the early variation in the book value after depreciation (ii) This method put an equal burden for use of the asset on each subsequent year since the amount of depreciation goes on decreasing for each subsequent year while the charge for repairs goes on increasing for each subsequent year. (iii) This method has also been approved by the income tax act applicable in India (iv) Asset is never reduced to zero because if the rate of depreciation is (say) 20%. Then even when asset is reduced to very small value, there must remain the 80% of that small value as on written off balance.

Demerit

(i) It ignores the interest on the capital committed to purchase that asset. (ii) It does not provide adequately for replacing the asset at the end of its life.

(iii) The calculation of rate of depreciation is not so simple.

(iv) The formula for calculating the rate of depreciation can be applied only when there is some residual of the asset.

Suitability

This method is suitable in those cases where the receipts are expected to decline as the asset gets older and, it is believed that the allocation of depreciation of depreciation ought to be related to the pattern of assets expected receipts.

Illustration 2: A company purchases Machinery on 1st April 1990 for Rs. 20,000. Prepare the machinery account for three years charging depreciation @ 25% p.a. according to the written Down value Method.

MACHINERY ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1990 Apr. 1	To Bank	20000	1991 Mar. 31	By Depreciation By Balance C/d	5000 15000

		20000			20000
1991 Apr.1	To Balance b/d	15000	1992 Mar.31	By Depreciation By Balance c/d	3750 11250
		15000			15000
1992 Apr 1	To Balance b/d	11250	1993 Mar.31	By Depreciation By Balance c/d	2812.5 8437.5
		11250			11250

4.Sum of Years digits (SYD) Method

Suitability

This method is suitable in those cases where the receipts are expected to decline as the asset gets older and, it is believed that the allocation of depreciation of depreciation ought to be related to the pattern of assets expected receipts.

For calculating the amount of depreciation to be charged to the profit and loss account this method takes into account cost, scrape value, and life of the asset. The following formula is used for determining depreciation:

$$= \frac{\text{Remaining life of the Assets at the end of the year} + 1}{\text{of the digits representing the life of the asset}} \times \text{Acquisition Cost}^{\text{Sum}}$$

For example, an asset having an effective life of 5 years is purchased at a cost of Rs. 20,000. It is estimated that its scrap value at the end of its effective life will be Rs. 2000. The depreciation on this asset, if SYD method is followed, will be calculated as follows from one to five years:

Year		Depreciation Amount
1	=	$\frac{5}{15} \times 18000 = \text{Rs. } 6000$
2	=	$\frac{4}{15} \times 18000 = \text{Rs. } 4800$
3	=	$\frac{3}{15} \times 18000 = \text{Rs. } 3600$
4	=	$\frac{2}{15} \times 18000 = \text{Rs. } 2400$
5	=	$\frac{1}{15} \times 18000 = \text{Rs. } 1200$

5.Annuity Method

Sofar we have described such methods of charging depreciation which ignore the interest factor. Also, some times it becomes inconvenient for a company to follow any of the methods discussed earlier. Under such circumstances the company may use some special depreciation systems. Annuity method is one of these special systems of depreciation. Under this system, the depreciation is charged on the basis that besides losing the acquisition cost of the asset the business also loses interest on the amount used for purchasing the asset. Here, interest refers to that income which the business would have earned otherwise if the money used in buying the asset would have been committed in some other profitable investment. Therefore, under the annuity method the amount of total depreciation is determined by adding the cost and interest thereon at an expected rate. The annuity table is used to help in the determination of the amount of depreciation. A specimen of Annuity Table is as follows:

ANNUITY TABLE

Year	3%	4%	5%	6%
4	0.269027	0.275490	0.282012	0.288591
5	0.218335	0.224627	0.230975	0.237376
6	0.184598	0.190762	0.197012	0.203363
7.	0.160506	0.166610	0.172820	0.179135
8.	0.142456	0.148528	0.154722	0.161036
9.	0.128434	0.134493	0.140690	0.147022
10.	0.117231	0.12391	0.129505	0.135868

In case depreciation is charged according to this method, the following accounting entries are passed:

4. Purchase of an asset

Asset Account Dr.

To Bank

5. For Charging interest

Asset Account Dr.

To Interest Account

6. For Charging depreciation:

Depreciation Account Dr.

To Asset Account

Evaluation of Annuity Method

Merits

(i) This method keep into account interest on money spent on the purchase of the asset.

(ii) The value of the asset become zero at the end of life.

Demerits

(i) This method is comparatively more difficult than the methods discussed so far.

(ii) It makes no arrangement of money to replace the old asset with the new one at the expiry of its life.

(iii) Under this method the burden on the profit and loss account is no similar in each year because the depreciation remains constant year after year but the interest goes on decreasing.

Illustration: On 1st January, 1990 a firm purchased a leasehold property for 4 year at a cost of Rs. 24000. It decides to depreciate the lease by Annuity Method by charging interest at 5% per annum. The Annuity Table shows that the annual necessary to write off Rs. 1 at 5% Rs. 0.282012. You are required to prepare the lease Hold Property Account for four years and show the net amount to be charged to the profit and loss account for these four years.

LEASE HOLD PROPERTY ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1990	To Bank	24000.00	1990	By Depreciation	6768.29
Jan. 1			Dec. 31		
	To interest	1200.00	Dec.31	By balance c/d	18431.71
		25200.00			25200.00
1991	To balance b/d	18431.71	1991	By Depreciation	6768.29
Jan.1			Dec.31		
Dec.31	To Interest	921.59	Dec.31	By Balance c/d	12585.01
		19353.30			19353.30
1992	To balance b/d	12585.01	1992	By Depreciation	6768.29
Jan.1			Dec.31		
Dec. 31	To Interest	629.25	Dec.31	By Balance c/d	6445.97
		13214.26			13214.26
1993	To balance b/d	6445.97	1993	By Depreciation	6768.29
Jan.1			Dec.31	By Balance c/d	9000
Dec.31	To Interest	322.30			13000
		6768.27			6768.27

NET AMOUNT CHARGEABLE TO THE PROFIT AND LOSS ACCOUNT

Year	Depreciation debited	Interest Credited	Net Charge against Profit
1990	6768.29	1200.00	5568.29
1991	6768.29	921.59	5846.70
1992	6768.29	629.25	6139.04
1993	6768.29	322.30	6445.99
Rs.	27073.16	3073.14	24000.02

6.Depreciation Fund Method

Business assets become useless at the expiry of their life and therefore, need replacement. However, all the methods of depreciation discussed above do not help in accumulating the amount which can be readily available for the replacement of the asset its useful life comes to an end Depreciation fund method takes care of such a contingency as it incorporates the benefits of depreciating the asset as well as accumulating the necessary amount for its replacement. Under this method, the amount of depreciation charged from the profit and loss account is invested in certain securities carrying a particular rate of interest. The interest received on the investment in such securities is also invested every year together with the amount of annual depreciation. In the last of the life of asset the depreciation amount is set aside interest is received as usual. But the amount is not invested because the amount is immediately needed for the purchase of new asset. Rather all the investments so far accumulated are sold away. Cash realised on the sale of investments is utilised for the purchase of new asset. The following accounting entries are generally made in order to work out this system of depreciation.

1. At the end of the first year

(i) for setting aside the amount of depreciation: The amount to be charge by way of depreciation is determined on the basis

of sinking Fund Table given as an Appendix at the end of every book of accountancy.

Depreciation Account Dr.

To Depreciation Fund Account (or Sinking Fund A/c)

(ii) For investing the amount charged by way of depreciation:

Depreciation Fund Investment A/c Dr.

To Bank A/c

2. In the second and subsequent years

(i) For receiving interest. The interest on the balance of Depreciation Fund Investment outstanding in the beginning of each year will be received by the end of the year. This entry is:

Bank Account Dr.

To Depreciation Fund Account

(ii) For setting aside the amount of depreciation

Profit and Loss A/c Dr.

To Depreciation Fund A/c

(iii) For investing the amount

Depreciation Fund Investment A/c Dr.

To Bank A/c

(Annual instalment of depreciation and interest received invested)

3. In the last year

(i) For receiving interest:

Bank A/c Dr.

To Depreciation Fund A/c

(ii) For setting aside the amount of depreciation

Profit and loss A/c Dr.

To depreciation Fund A/c

Note: In the last year no investment will be made, because the amount is immediately required for the purchase of new asset.

(iii) For the sale of investment:

Bank A/c Dr.

To Depreciation Fund Investment A/c

(iv) For the transfer of profit or loss on sale on investments: The profit or loss on the sale of these investments is transferred to the Depreciation Fund Account.

The entry for loss:

Depreciation Fund A/c Dr.

To Depreciation Fund Investment A/c

The entry for profit

Depreciation Fund Investment A/c

To Depreciation Fund A/c

(v) For the sale of old asset:

Bank A/c Dr.

To asset A/c

(vi) The depreciation fund is transferred to asset account and any balance left in the asset account is transferred to profit and loss account. The entry is:

Depreciation Fund A/c. Dr.

To asset A/c

(vii) The balance in Asset Account represents profit or loss. Therefore it will be transferred to the profit and loss account.

(viii) The cash realised on the sale of investments and the old asset is utilised for the purchase of new asset.

Illustration: Amitabh Company Ltd. purchased 4 year lease on January , 1990 for Rs. 60,000. The company decided to charge depreciation according to depreciation fund method. It is expected that investments will earn interest @5% p.a. Sinking Fund Table shows that Rs. 0.232012 invested each year will produce Rs. 1 at the ent of 4 years

at 5% p.a. At the expiry of lease , the Depreciation Fund Investments were sold for Rs. 45200. A new lease is purchased for Rs..... on 1.1.1994. Show the journal entries and prepare the necessary accounts in the book the company.

JOURNAL

Date	Particulars		Debit	Credit
1.1.1990	Lease A/c	Dr.	60,000	
	To Bank A/c			60,000
	(Being the purchase of lease)			
31.12.90	Depreciation A/c	Dr.	13920.7	
	To Depreciation Fund A/c			13920.7
	(Being annual amount of depreciation as per sinking fund tables)			
31.12.90	Depreciation Fund Investment A/c	Dr.	13920.7	
	To Bank A/c			13920.7
	(Being purchase of the investments against the depreciation fund)			
31.12.91	Bank A/c	Dr.	696.0	
	To depreciation fund A/c			696.0
	(Being the receipt of interest on depreciation fund investment A/c transfer to depreciation fund A/c			
31.12.91	Depreciation A/c	Dr.	13920.7	
	To Depreciation Fund A/c			13920.7
	(Being annual depreciation set-aside)			
31.12.91	Depreciation Fund Investment A/c	Dr.	14616.7	
	To Bank A/c			14616.7
	(Being purchase of the investments against the depreciation fund)			
31.12.92	Bank Account	Dr.	1426.9	
	To depreciation fund A/c			1426.9
	Being receipt of interest and its transfer to depreciation fund A/c)			

31.12.92	Depreciation A/c Dr. To depreciation fund A/c (Being annual depreciation set aside)	13920.7	 13920.7
31.12.92	Depreciation Fund Investment A/c Dr. To Bank A/c (Being purchase of investments)	15347.6	 15347.6
31.12.93	Bank A/c Dr. To depreciation fund A/c (Being receipt of interest on depreciation fund investment)	2194.3	 2194.3
31.12.93	Depreciation A/c Dr. To depreciation A/c (Being annual depreciation set aside)	13920.7	 13920.7
31.12.90	Bank A/c Dr. To depreciation fund investment A/c (Being sale of Dep fund investment A/c)	45200	 45200
31.12.93	Depreciation Fund Investment A/c Dr. To depreciation fund A/c (Being profit on sale investment transferred)	1315.0	 1315.0
31.12.93	Depreciation fund A/c Dr. To lease A/c (Being the transfer of depreciation fund A/c to lease A/c)	61315.0	 61315.0
31.12.93	Lease A/c Dr. To PCL A/c (Being Balance of lease A/c transferred to place	1315.0	 1315.0
1.1.94	Lease A/c Dr. To Bank A/c	70000.0	 70000.0

DEPRECIATION FUND ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
31.12.90	By Balance c/d	13920.7	31.12.90	By Dep. a/c	13920.7
		13920.7			13920.7
31.12.91	To Balance c/d	28537.4	1.1.91	By Balance b/d	13920.7
			31.12.91	By Bank A/c Int.	696.0
			31.12.91	By Dec. a/c	13920.4
		28537.4			28537.4
31.12.92	By Balance c/d	43885.0	1.1.92	By Balance c/d	28537.4
			31.12.92	By Bank A/c Int.	1426.9
			31.12.92	By Dep. A/c	13920.7
		43885.0			43885.0
31.12.93	To lease A/c	61315.0	1.1.93	By Balance b/d	43885.0
			31.12.93	By Bank Interest	3194.3
			31.12.93	By Dep. a/c	61315.0
		61315.0			61315.0

LEASE ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.90	To Bank A/c	60000	31.12.90	By Balance c/d	60000
		60000			60000
1.1.91	To Balance b/d	60000	31.12.91	By Balance c/d	60000
		60000			60000
1.1.92	To Balance b/d	60000	31.12.92	By Balance c/d	60000
		60000			60000
1.1.93	To Balance b/d	60000	31.12.93	By Balance c/d	60000
		60000			60000
31.12.93	To P & L A/c	1315			
	(Profit)	61315			61315

DEPRECIATION FUND INVESTMENT A/C

Date	Particulars	Rs.	Date	Particulars	Rs.
31.12.90	To Bank A/c	13920.7	31.12.90	By Balance c/d	13920.7
		13920.7			13920.7

1.1.91	To Balance b/d	13920.7	31.12.91	By Balance c/d	28537.4
31.12.92	To Bank A/c	14616.7			
		28537.4			28537.4
1.1.92	To Balance b/d	28537.4	31.12.92	By Balance c/d	43885.0
31.12.92	To Bank A/c	15347.6			
		43885.0			43885.0
1.1.93	To Balance b/d	43885.0	31.12.93	By Bank a/c	45200.0
	To Dep. Fund a/c	1315.0			
		45200.0			45200.0

7.Insurance Policy Method

Under this method, instead of investing the money in securities an insurance policy for the required amount is taken. The amount of the policy is such that it is adequate to replace the asset when it is worn out. A fixed sum equal to the amount do depreciation is paid as premium every year. Company receiving premium allows a small rate of interest on compound basis. At the maturity of the policy, the insurance company pays the agreed amount with which the new asset can be purchased. Accounting entries will be made as follows.

1. First and every subsequent years

(a) Depreciation Insurance policy A/c Dr.

To Bank

(Entry in the beginning of the year for payment of insurance premium)

(b) Profit and loss Account Dr.

To Depreciation fund A/c

(Entry at the end of the year for providing depreciation)

2. Last year

(a) Bank A/c Dr.

To Depreciation Policy A/c

(Entry for the amount of policy received)

(b) For transfer of profit on insurance policy:

Depreciation Insurance Policy A/c Dr.

To Depreciation Fund A/c

(c) For transfer of accumulated depreciation to the asset account:

Depreciation Fund A/c Dr.

To Asset A/c

(d) On purchase of new asset:

On purchase of new asset:

New Asset A/c Dr.

To Bank

Illustration: On 1.1.1993, a firm purchased a lease for four years for Rs. 50,000. It decided to provide for its replacement by means of an insurance policy for Rs. 50,000. The annual premium is Rs. 11,000. On 1.1.1997, the lease is renewed for a further period of 4 years for the same amount. Show the necessary ledger accounts.

LEASE ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.93	To Bank A/c	50000	31.12.93	By Balance c/d	50000
1.1.94	To Balance b/d	50000	31.12.94	By Balance c/d	50000
1.1.95	To Bank A/c	50000	31.12.95	By Balance c/d	50000
1.1.96	To Bank A/c	50000	31.12.96	By Balance c/d	50000
				Fund a/c	

DEPRECIATION INSURANCE POLICY A/C

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.93	To Balance A/c	11000	31.12.93	By Balance c/d	11000
1.1.94	To Balance b/d	11000	31.12.94	By Balance c/d	22000

	To Bank A/c	11000			
		22000			22000
1.1.95	To Balance b/d	22000	31.12.95	By Balance c/d	33000
	To Bank A/c	11000			
		33000			33000
1.1.96	To Balance b/d	33000	31.12.96	By Bank	50000
	To Bank	11000			
Dec.31	To profit Transferred to Dep. Fund A/c	6000			
		50000			50000

DEPRECIATION FUND ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.93	To Balance c/d	11000	31.12.93	By P. & L c/c	11000
1.1.94	To Balance c/d	22000	31.12.94	By Balance.b/d	11000
			Dec. 31	By P. & L a/c	11000
		22000			22000
1.1.95	To Balance c/d	33000	31.12.95	By Balance b/d	22000
				By P. & L. a/c	11000
		33000			33000
1.1.96	To Lease a/c	50000	31.12.96	By Balance b/d	33000
			Dec. 31	By P. & L. a/c	11000
			Dec. 31	By Dep. Insurance Policy a/c	6000
		50000			50000

8.Depletion Method

This is also known as productive output method. In this method it is essential to make an estimate of the units of output the asset will produce in its life time. This method is suitable in case of mines, queries,

etc., where it is possible to make an estimate of the total output likely to be available. Depreciation is calculated per unit of output. Formula for calculating the depreciation rate is as under:

$$r = \frac{\text{Acquisition cost - Scrap value}}{\text{Units of output}}$$

Example: If a mine is purchased for 50,000 and it is estimated that the total quantity of mineral in the mine is 1,00,000 tonnes, the rate of depreciation would be:

$$r = \frac{50,000}{1,00,000} = \text{Rs. } 0.5$$

Hence, the rate of depreciation is 50 paise per tonne. In case output in a year is 20,000 tonnes, the amount of depreciation to be charged to the profit and loss account would be Rs. 10,000 (i.e., 20,000 tonnes × Rs. 0.50).

This method is useful where the output can be measured effectively, and the utility of the asset is directly related to its production use. Thus, the method provides the benefit of correlating the amount of depreciation with the productive use of asset.

12.7 SALE OF AN ASSET

An enterprise may sell an asset either because of obsolescence or inadequacy or even for other reasons. In case an asset is sold during the course of the year, the amount realised should be credited to the Asset Account. The amount of depreciation for the period of which the asset has been used should be written off in the usual manner. Any balance in the Asset Account will represent profit or loss on disposal of the asset. This balance in the Asset Account should be transferred to the profit and loss account.

Illustration: A company purchased a machinery costing Rs. 60,000 on 1.4.1990. The accounting year of the company ends on 31st December every year. The company further purchased machinery on 1st October, 1990 costing Rs. 40,000. On 1st January 1992, one-third of the machinery which was installed on 1.4.1990, became obsolete and was sold for Rs. 5000. Show how the machinery account would appear in the books of the company. The depreciation is to be charged at 10% p.a. on written down value method.

MACHINERY ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1.4.90	To Bank	60000	31.12.90	By Depreciation	45000
Oct. 1	To Bank	40000		on Rs. 60000 for 9 month	1000
				on Rs. 40000 for 3 month	
			Dec.31	By Balance c/d	94500
		100000			100000
1.191	To Balance b/d	94500	31.12.91	By Depreciation on Rs. 94500 for 1 year	9450
			Dec. 31	By Balance c/d	85050
		94500			94500
1.192	To Balance b/d	85050	31.12.91	By Bank (sale pro)	5000
			Jan. 1	By Profit Loss account loss on sale (16650-5000)	11650
			Dec. 31	By Depreciation	6840
			Dec. 31	By Balance c/d	61560
		85050			85050

*Total written down value as on Jan. 1, 1992	85050
Less written down value of 1/3 of Machinery sold (2000-(1500+1850)	16650
	68400
Depreciation at 10% on Rs. 68400	6840

DEPRECIATION ON AN ASSET PURCHASED IN THE COURSE OF A YEAR

Two alternatives are available regarding charging of depreciation on assets which have been bought during the course of an accounting year. These are as follows:

1. Depreciation may be charged only for the part of the year for which the asset could have been made available for use after purchase of it.
2. Depreciation may be charged for the full year irrespective of the date of purchase. It will be ascertained at the given rate of depreciation. The Income tax authorities also permit this.

Important Note: If there is no specific instruction in the question about depreciation, the students should give the assumption made by them in this regard. But, in case rate of depreciation has been given as a certain percentage per annum and the purchasing date has been given, it is suggested to calculate depreciation only for the part of the year for which the asset has been made available for its use.

CHANGE OF DEPRECIATION METHOD

To ensure comparability of results from year to year, it is essential that once a method of depreciation is selected by the management it should be followed consistently. However, sometimes a change in the method of depreciation may be required. The change may be required either because of statutory compulsion or required by an accounting standard or change would result in more appropriate presentational the financial statements.

The change in the method of depreciation may be desired from the current year onwards. In such a case, depreciation will be charged according to the new method from the current year.

Illustration: Om Ltd. purchased a computer for Rs. 50,000 on 1.1.1993. It has five years life and a salvage value of Rs. 5,000. Depreciation was provided on straight line basis. With effect from 1.1.1995, the company decided to change the method of depreciation to Diminishing Balance method@20% p.a. Prepare computer account from 1993 to 1996. Assume, the company prepare final accounts on 31st December every year.

COMPUTER ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.93	To Cash A/c	50000	31.12.93	By Depreciation	9000
			"	By Balance c/d	41000
		50000			50000
1.1.94	To Balance b/d	41000	31.12.94	By Depreciation	9000
			"	By Balance c/d	32000
		41000			41000
1.1.95	To Balance b/d	32000	31.12.95	By Depreciation	6400
			"	By Balance c/d	25600
		32000			32000
1.1.96	To Balance b/d	25600	31.12.96	By Depreciation	5120
			"	By Balance c/d	20480
		25600			25600

Working Notes

1) Depreciation on straight line basis

$$= \text{Rs. } \frac{50{,}000 - 5{,}000}{5} = \text{Rs. } 9000$$

2) Depreciation on written down value basis during 1995

(Book value Rs. 32000)

$$= \text{Rs. } \frac{32000 \times 20}{100} = \text{Rs. } 6400$$

12.9.1 Change in the Method of Depreciation from a back date

Sometimes a change in the method of depreciation is effected retrospectively. In such a case, the following steps are required:

(i) Find out the depreciation which has already been charged according to the old method or at the old rate.

(ii) Compute the amount of depreciation that is to be charged according to the new method form the back date upto the end of the previous year.

(iii) Find the difference, if any, under (i) and (ii) mentioned above.

(iv) In the current year in addition to the depreciation for the current year charge also the difference found under step (iii).

Illustration: Taking the facts as in the illustration 7, prepare computer account for 1995 and 1996, if the firm decides on 1.1.1995 to charge depreciation according to Diministing Balance method. Assume the change in the depreciation policy is efected by the firm since the date of purchase.

Solution

COMPUTER ACCOUNT

Date	Particulars	Rs.	Date	Particulars	Rs.
1.1.95	To Balance	32000	31.12.95	By Depreciation Difference for earlier year (1)	Nil
				Current year (2)	6400
			Dec. 31	By Balance c/d	25600
		32000			32000
1.1.96	To Balance	25600	31.12.96	By Depreciation	5150
			"	By Balance	20480
		25600			25600

Working Notes

1) 1.1.1993 Acquisition cost of computer 50000

31.12.93	Depreciation @ 20% p.a. on 50000	10000
1.1.94	Balance	40000
31.12.94	Depreciation @ 20% on Rs. 40000	8000

Depreciation according to Diministing Balance method for the year 1993 and 1994 (10,000+8,000) 18000

Less Depreciation according to straight line basis (9000+9000) 18000

Difference Nil

2)

1.195	Balance	32000
31.12.95	Depreciation @ 20% p.a. on 32000	6400
1.1.96	Balance	25600
31.12.96	Depreciation @ 20% on 25600	5120
31.12.96	Balance	20480

SUMMARY

The term depreciation refers to the reduction or loss of quality or value of a fixed asset through wear or tear, in use, effusion of time, obsolescence through technology and market changes or from any other cause. The term depreciation, depletion and amortization are used often interchangeably. However, these different terms have been developed in accounting usage for describing this process for different type of assets. The term 'depreciation' is concerned with charging the cost of man-made fixed assets, depletion applied to the process of removing an available but irreplaceable resource such as coal mines or oil well, amortisation refers to the process of writing off intangible assets. The main objectives of charging depreciation are to ascertain the true profits or losses and to show the assets at its reasonable value. The amount of depreciation to be charged depends upon cost of the asset, estimated life of the asset and scrap value of the asset. There are different methods of charging depreciation, i.e., fixed instalment method, machine hour rate method, diminishing balance method, sum of years digits method, annuity method, depreciation fund method, insurance policy method and depletion method.

KEYWORDS

Fixed Assets: Those assets which have been purchased for continuous use in the business.

Depreciation Rate: A percentage applied to the historical cost or the substituted amount of a depreciable asset.

Balance Sheet: A statement of the financial position of an enterprise as at a given time.

Depletion: A measure of exhaustation of a wasting asset represented by periodic write-off of cost.

Obsolescence: Dimunition in the value of an asset by the reason of its becoming out-of-date due to technological changes.

Provision: An amount retained by way of providing for any known liability the amount of which cannot be determined with substantial accuracy.

SELF ASSESSMENT QUESTIONS

1. Why is it necessary to calculate depreciation? Discuss various factors which are considered for calculating depreciation

2. Distinguish between the following:
   (a) Straight line method and diministing balance method.
   (b) Annuity method and depreciation Fund method.
   (c) Depreciation and depletion

3. Explain the circumstances under which different methods of depreciation can be employed.

4. Discuss the advantages and disadvantage of Insurance Policy Method and Straight Line Method.

5. What is sum of the year-digits method do depreciation? In what way does it differ from sinking fund method or depreciation?

6. A firm purchases a plant for a sum of Rs. 10,000 on 1st January 1990. Installation charges are Rs. 2,000. Plant is estimated to have a scrap value of Rs. 1,000 at the end of its useful life of five years. You are required to prepare the plant account for five years charging depreciation according to Straight Line Method

7. A plant is purchased for Rs. 20,000. It is depreciated at 5% per annum on reducing balance for five years when it becomes obsolete due to new method of production and is scrapped. The scrap produces Rs. 5,385. Show the plant account in the ledger.

8. The machinery account of a factory showed a balance of Rs. 1,90,000 on 1st January 1998. 1st accounts were made up on 31st December each year and depreciation is written off at 10% p.a. under the Diministing Balance Method.

   On 1st June 1998, New Machinery is acquired at a cost of Rs. 28,000 and installation charges incurred in erecting the machines works out to Rs. 892 on the same date. On 1st June 1998 a machine which had cost Rs. 6,000 on 1st January 1993 was sold for Rs. 750, another machine which had cost Rs. 600 on 1st January 1994, was scrapped on the same date and it realised nothing.

   Write up plant and Machinery Account for the year 1998, allowing the same rate of Depreciation as in the past calculating Depreciation to the nearest multiple of a Rupee. (Ans. Loss on Sale Rs. 2,645, Loss on scrapping Rs. 377, Closing Balance Rs. 1,94,665).

9. A company purchased a four years lease on January, 1, 1985 for Rs. 20,150. It is decided to provide for the replacement of the lease at the end of four years by setting up a Depreciation Fund. It is expected that investments will fetch interest at 4per cent. Sinking Fund tables show that to provide the requisite sum at 4percent at the end of four years, an investment of Rs. 4,745.02 is required. Investments are made to the nearest rupee.

On December 31, 1988, the investments are sold for Rs. 14,830 On 1st January, 1989, the same lease is renewed for a further period of 4 years by payment of Rs. 22,000.

Show journal entries and give the important ledger account to record the above.

10. Chillies Ltd, acquired a long-term lease of property on payment of Rs. 60,000. A leasehold Redemption Policy was taken out on which an annual premium of Rs. 1,440 was payable. The surender value of the policy on 31st March, 1997 was Rs. 12,896 to which amount the policy account stood adjusted. Next premium was paid on 20th December, 1997 and the surrender value on 31st March, 1978 was Rs. 14,444.

    (i) Show the Redemption fund account and the policy account for the year ended 31st March, 1998

    (ii) Assuming that of maturity, a sum of Rs. 60,100 was received and the balance in policy account then stood at Rs. 59,920 give the ledger accounts showing the entries necessary to close the accounts concerned. (Ans. (i) Balance at the end of 1998 Fund A/c & Policy A/c Rs. 14,444 (ii) Transfer to P & L a/c profit on maturity Rs. 100).

11. Machinery account of CSI Ltd. showed debit balance of Rs. 32,400 on 1st January, 1998. Depreciation was provided at 10% per annum. On 1st July 1998, a part of the machinery purchased for Rs. 10,000 on 1st January 1996 was sold for Rs. 7,000 and on the same date a new machinery which cost Rs. 20,000 was purchased. On 31st Dec. 1998 the company decided to change the method of depreciation from

Diministing Balance Method to Fixed Instalment Method with effect from 1st January, 1996, depreciation remaining at 10% per annum. Show Machinery account.

METHODSAND DIMINISHINGBALANCE METHOD

Points of Distinction	**Straight Line Method**	**Diminishing Balance Method**
1. Change in Depreciation Amount	Throughout the life of the asset, the amount for depreciation remains to be equal.	Amount of depreciation is more during earlier years of the life of asset than later years and therefore amount is never equal.
2. Balance inAssets A/c	Assets A/c at the expiry of the expectedlife becomes nil.	The amount never becomes nil.
3. Overal l Changes	The overall charge i.e., Depreciation and repairs taken together go on increasing from year to year. In other words the amount depreciation and repairs is relatively less during the earlier years of the life of the asset than later years become repairs go on increasing with use of asset.	Overall charge remains more or less same for every year throughout the life of the asset. Since depreciation goes on decreasing and amount of repairs goes on increasing.
4. Profits	Profits under this method are more during the earlier years of the life of the asset.	Profits are less during earlier years thanthe later years.

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UNIT-4 FINANCIAL ANALYSIS

I. Introduction

Financial Analysis is the process of identifying the financial strength and weaknesses of the firm by properly establishing relationship between items of financial statements. A financial statement is an organized collection of data according to logical and conceptual framework. Consistent accounting procedure. Its purpose is to convey an understanding of some financial aspects of a business firm. It may show a position at a moment of time as time, as in the case of an income statement.

Financial performance refers to the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectivities being or has been accomplished. It is the process of measuring the results of firm's policies and operations in monetary terms. It is used to measure firms over all financial health over a given period of time.

Meaning and Definition of Financial Statement Analysis

"Financial statements should be understandable, relevant, reliable and comparable. Reported assets, liabilities, equity, income and expenses are directly related to an organization's financial position. Financial statements are intended to be understandable by readers who have "a reasonable knowledge of business and economic activities and accounting and who are willing to study the information diligently."

According to Lev- "financial statement analysis is an information processing system design to provide data for decision making models, such as the portfolio selection model, bank lending decision models and corporate financial models ".

According to john Myer, "financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by single set of statements and a study of the trend of these factors as shown in a series of statements.

According to Kennedy and Muller, "the analysis and interpretation of financial statements reveal each and every aspect regarding the well-being financial soundness, operational efficiency and credit worthiness of the concern concerned".

Financial statement analysis embraces the methods used in assessing and interpreting the result of past performance and current financial position as they relate to particular factors of interest in investment decisions. It is an important means of assessing past performance and in forecasting and planning future performance.

SCOPE OF FINANCIAL ANALYSIS:

The financial statements are prepared on the basis of recorded facts. The recorded facts are these that can be expressed in monitory terms. The accounting records and financial statements are from those records are based on historical costs. The financial statements are prepared periodically for the accounting period.

1. Financial statements as composed of data, which are the results.
2. Recorded facts concerning business transaction.
3. Convention adopted to facilitate the accounting technique.

4. Postulates or assumptions made to personal judgment.
5. Application of correction and postulates.

OBJECTIVES OF FINANCIAL ANALYSIS

The major objectives of financial statement analysis are to provide decision makers information about a business enterprise for use in decision making. Uses of financial statement information are management for evaluating the operational and financial efficiency of the enterprise as a whole or of sub units; investors for making investment decisions and portfolio decisions, lenders
The major objectives of financial statement analysis are to provide decision makers information about a business enterprise for use in decision making. Uses of financial statement information are management for evaluating the operational and financial efficiency of the enterprise as a whole or of sub units; investors for making investment decisions and portfolio decisions, lenders
and creditors for determining the credit worthiness and solvency position; employee and labour unions for deciding economic status of the enterprise and making sound decisions in wage and salaries negotiations.

However, the following are generally considered to be the objectives of financial Analysis:

- To find out the financial stability and soundness of the business enterprise.
- To assess and evaluate the earning capacity of the business.
- To estimate and evaluate the fixed assets, stock, etc of the concern.
- To estimate and determine the possibilities of future growth of business.
- To assess and evaluate the firm's capacity and ability to repay short-term and long-termloans.
- To evaluate the administrative efficiency of the business enterprise.

PURPOSE OF FINANCIAL ANALYSIS

Financial statements analysis is an attempt to determine the significance and meaning of the financial statements data, which measure the enterprise's liquidity profitability, forecast may be made of the future earnings, solvency and other indicators to assess its operating efficiency, financial position and performance.

Financial analysis serves the following purpose:

1. To know the operational efficiency of the business.
2. This will enable the management to locate weak spots of the business and take necessaryremedial action.
3. Helpful in measuring the solvency of the firm in taking appropriate decisions for strengtheningthe short-term as well as long-term solvency of the firm.
4. Comparison of past and present results.
5. Financial analysis helps the managers in taking certain decisions for improving theprofitability or reducing the losses of the firm.
6. Helps in judging the solvency i.e. the capacity of the business to repay

their loans.

7. Financial statement analysis is a significance tool in predicting the bankruptcy and failure ofthe business enterprises.
8. The financial analysis will help in assessing future development by making forecasts andpreparing budgets.

FINANCIAL STATEMENT ANALYSIS

Financial statements are the summaries of the operating, financing and investment activities of business. It must give useful information for investors and creditors in making investment, credit and other business decisions (Pamela, 1999). Financial statement analysis in accounting arena is effectual device for different users of financial statements, each having dissimilar objectives to learn about the financial circumstances of the unit.

Financial statements are developed to take wise decisions for company. Financial statement analysis compares ratios and trends calculated from data found on financial statements. Financial ratios permit experts to compare output of business to industry averages or to specific competitors. These comparisons assist recognize financial vigour and flaws. The term 'financial analysis' also termed as 'analysis and interpretation of financial statements', denotes to the process of determining financial strengths and limitations of the company by establishing strategic affiliation between the items of the balance sheet, P&L A/c and other operative data. It is the combined name for the tools and techniques that gives significant information to decision makers.

TYPES OF FINANCIAL STATEMENT ANALYSIS

Two types of analysis are undertaken to interpret the position of an enterprise.They are

1. Vertical analysis 2. Horizontal analysis

The companies act, 1956 permits the companies to present the financial statements in vertical aswell as horizontal form.

VERTICAL ANALYSIS:

It is the analysis of relationship as between different individual components. It s also the analysis between these components. It is also the analysis between these components and their totals for a given period of time it is also regarded as static analysis. Comparison of current assets to current liabilities or comparisons of debt to equity for one point of time are examples of vertical analysis. Thus, the vertical analysis can be made in the following ways

- By preparation of common size statements of the two similar units
- By preparing common size statement of different years of the same business unit.

HORIZONTAL ANALYSIS:

It is the analysis of changes in different components of the financial statements over different periods with help of a series of statements. Such an analysis makes it possible to study periodic fluctuations in

different components of the financial statements. Study of trends in debt or share capital or their relationship over the past 10 year's period or study of profitability trends for a period of 5 or 10 years.

Analysis and interpretation of financial statements is the most important step in accounting. To have a very clear understanding of the profitability and financial position of a company the financial statements have to be analyzed or interpreted.

Meaning of Analysis:

Analysis is the process of critically examining in detail accounting information given in the financial statements. For the purpose of analysis, individual items are studied. Their inter relationships with other related figure established, the data is sometimes rearranged to have better understanding of the information with the help of different techniques or tools for the purpose.

The analysis of financial statements refers to the treatment of the information contained in the financial statements in a way so as to afford a full diagnosis of the profitability and financial position of the firm concerned. For this purpose financial statements are classified methodically analyzed and compared with the figures of previous years of other similar firms.

Definition:

In the words of Myer, "Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set of statements and a study of the trend of these factors as shown in a series of statements".

Meaning of interpretation:

Analysis and interpretation are closely related. Interpretation is not possible without interpretation analysis has no value. Various account balances appear in the financial statements. These account balances do not represent homogenous data, so it is difficult to interpret them and draw some conclusions.

This requires an analysis of the data in the financial statements so as to bring some homogeneity to the figures shown in the financial statements.

Interpretation is thus drawings of inferences and stating what the figures, in the financial statements really mean.

Definition:

In the words of Kennedy & Memuller, "The analysis and interpretation of financial statements are an attempt to determine the significance and meaning of the financial statements data so that a forecast may be made of the prospectus for future earnings, ability to pay interest and debt maturities (both current and long term) and profitability of a sound dividend policy.

Q.CRITICALLY EXAMINE THE VARIOUS TOOLS AND TECHNIQUES/METHODS AVAILABLE FOR FINANCIAL ANALYSIS.

The analysis of financial statement consists of a study of relationships and trends to determine whether or not the financial position of the concern and its operating efficiency have been satisfactory. In the process of this analysis, various tools or methods are used by the financial analyst.

The analytical tools generally available to an analyst for this purpose are as follows:

1. Comparative financial statements:

These statements are prepared in a way so as to provide time perspective to the consideration of various elements of financial positions embodied in such statements. This is done to make the financial data more meaningful. The statements of two or more years are prepared to show absolute data of two or more years, increases or decreases in absolute data in value and in terms of percentages. Comparative statements can be prepared for both income statement as well as position statement on balance sheet.

(i)Comparative income statement:

This statement discloses the net profit or net lose resulting from the operation of business. Such statement shows the operating results for a number of accounting periods so that changes in absolute data from one period to another period may be stated in terms of absolute change or in terms of percentage.

This statement helps in ascertaining the changes in sales volume, administrative expenses, selling and distribution expenses, cost of sales etc.

(ii)Comparative balance sheet:

This statement prepared on two or more different dates can be used for comparing assets and liabilities and to find out any increase or decrease in these items. This facilitates the comparison of figures of two or more periods and provides necessary information which may be useful in forming an opinion regarding the financial condition as well as progressive outlook of the concern.

2. Common measurement (size) statement (common measurement analysis)

This statement indicates the relationship of various items with some common items (expressed as percentage of the common item).

In the income statement the sale figure is taken as base and all other figures are expressed as percentage of sales. Similarly in the balance sheet the total of assets and liabilities is taken as base and all other figures are expressed as a percentage to this total. The percentage so calculated can be easily compared with the corresponding percentages in other periods and meaningful conclusions can be drawn.

3) Trend percentage analysis:

This analysis is an important tool of horizontal financial analysis. This method is immensely helpful in making a comparative study of the financial statements of several years. Under this method, trend percentages are calculated for each item of the financial statements taking the figure of base year as 100. The starting year is usually taken as the base year.

The trend percentages show the relationship of each item with its preceeding years percentages. These percentages can also be presented in the form of index numbers showing relative changes in the financial data of certain period. This will exhibit the direction (i.e., upward or downward trend) to which the concern is proceeding. These trend ratios may be compared with industry in order to know the strong or weak points of a concern. These are calculated only for major items instead of calculating for all items in the financial statements.

4) Funds flow statement (or analysis):

This statement is prepared in order to reveal clearly the various sources wherefrom the funds are procured to finance the activities of a business concern during the accounting period and also brings to highlights the uses to which these funds are put during the said period.

5) Cash flow statement (or analysis):

This statement is prepared to know clearly the various items of inflow and outflow of cash. It is an essential tool for short term financial analysis and is very helpful in the evaluation of current liability of a business concern. It helps the business executives of a business in the efficient cash management and internal financial management.

6) Statement of changes in working capital (or net working capital analysis):

This statement is prepared to know the net change in working capital of a business between two specified dates. It is prepared from current assets and current liabilities of the said dates to show the net increase or decrease in working capital.

7) Ratios analysis:

It is done to develop meaningful, relationship between individual item or group of items usually shown in the periodical financial statements published by the concern. An accounting ratio shows the relationship between the two interrelated accounting figures as gross profit to sales, current assets to current liabilities, loaned capital to owned capital etc.

Ratios should not be calculated between the two unrelated figures as sales and discount on issue of shares, operating cost and equity capital etc as it will not serve any useful purposes.

UNIT-5 RATIO ANALYSIS

MEANING OF RATIO.

A ratio is only a comparison of the numerator with the denominator. The term ratio refers to the numerical or quantitative relationship between two figures. A ratio is the relationship between two figures. A ratio is the relationship between two figures and obtained by dividing the former by the latter. Ratios are designed to show how one number is related to another. It is worked out by dividing one number by another.

Q. WHAT DO YOU UNDERSTAND BY RATIO ANALYSIS?

Ratio analysis is an important and age old technique of financial analysis. Ratio analysis involves comparison of relevant figures or useful interpretation of the financial statements. Ratios are relative form of financial data and very useful technique to check upon the efficiency of a firm. Some ratios indicate the trend or progress or downfall of the firm.

.DEFINE RATIOS:

Relationship expressed in quantitative terms between figures which have cause and effect relationships or which are connected with each other in some manner or the other.

Ratio may be defined as "the relationship between two accounting figures, expressed mathematically".

. DISCUSS THE NATURE OF RATIO ANAYSIS.

Ration analysis is a technique of analysis and interpretation of financial statements. It is the process of establishing and interpreting various ratios for helping in making certain decisions. However, ratio analysis is not an end in itself. It is only a means of better understanding of financial strengths and weakness of a firm.

Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analyzed and interpreted .there are a number of ratios which can be calculated from the information given in the financial statements, but the analyst has to select the appropriate data and calculate only a few appropriate ratios from the same keeping in mind the objective of analysis.

The ratios may be used as a symptom like blood pressure, the pulse rate or the body temperature and their interpretation depends upon the caliber and competence of analyst.

.WHAT ARE THE MODES OF EXPRESSING 'RATIOS'?

Ratios may be expressed in any one or more of the following ways:

- ***RATE,*** which is the ratio between the two numerical facts over a period of time, for example, stock turnover is three times a year.

  PURE RATIO OR PROPORTION which is arrived at by the simple division one number by another number
- for example, current asset to current liability ratio is 3:1.
- ***PERCENTAGE*** which is a special type of rate expressing the relationship in hundreds. It is arrived at by multiplying the quotient by 100, for example, gross profit is 30% of sales.

Ratios can be expressed as (a) Proportion, (b)Rate or times, (c) Percentage. Each way of expression may have a distinct advantage over the others. The analyst will choose a particular mode or a combination suitable for a specific purpose.

WHAT ARE THE STEPS INVOLVED IN 'RATIO ANALYSIS'?

(i)Selection of relevant information:

The first task of the financial analyst is to select the information relevant to the decision under consideration from the statements and calculates appropriate ratios.

(ii)Comparison of calculated ratios:

The second step is to compare the calculated ratios with the ratios of the same firm relating to past on with the industry ratios. This step facilitates in assessing success or failure of the firm.

(iii)Interpretation and Reporting:

The third step involves interpretation, drawing of inferences and report writing conclusions are drawn after comparison in the shape of report or recommended course of action.

SIGNIFICANCE OF RATIO ANALYSIS.

Ratio analysis is a powerful tool of financial analysis. It is used as a device to analysis and interprets the financial health of a firm. Analysis of financial statements with the aid of ratio helps the management in decision making and control.

The use of ratio analysis is not confined to financial manager only. Different parties are interested in knowing the financial position of a firm for different purposes. Ratio analysis is used by creditors, banks, financial institutions, investors and shareholders. It helps them in making decisions regarding the granting of credit and making investments in the firm. Thus, ratio analysis is of immense use and has wide application.

USES /IMPORTANCE/ADVANTAGES OF RATIO ANALYSIS.

The inter relationship that exists among the different items appeared in the financial statements are revealed by accounting ratios. Ratio analysis of a firm's financial statements is of interest to a number of parties, mainly shareholders, creditors, financial executives etc.

A) MANAGERIAL USES OF RATIO ANALYSIS:

1. Helps in decision making:

The information provided in financial statements is not an end in itself and no meaningful conclusion can be drawn from these statements alone. Ratio analysis helps in making decisions from the information provided in these financial statements.

2. Helps in financing forecasting and planning:

Planning is looking ahead and the ratios calculated for a number of years work as a guide for the future. Meaningful conclusions can be drawn for future from these ratios. Thus ratio analysis helps in forecasting and planning.

3. Helps in communicating:

The information contained in the financial statements is conveyed in a meaningful manner to the one for whom it is meant. Thus, ratio analysis helps in communication and enhance the value of the financial statements.

4. Helps in co-ordination:

Ratios even help in coordination which is of utmost importance in effective business management. Better communication of efficiency and weakness of an enterprise results in better coordination in the enterprise.

5. Helps in control:

Standard ratios can be based upon proforma financial statements and variances or deviations, if any, can be found by comparing the actuals with the standards, so as to take a corrective action at the right time. The weakness or otherwise, if any, come to the knowledge of the management which helps in the effective control of the business.

6. Aid to measure general efficiency:

Ratios enable the mass of accounting data to be summarized and simplified. They act as an index of the efficiency of the enterprise.

7. Helps to measure financial solvency:

Ratios helps to evaluate the firm's performance over a period of time by comparing the present ratio with the past ones. They point out firm's liquidity position to meet its short term obligations and long term solvency.

8. Aid in corrective action:

Ratio analysis provides inter firm comparison. They highlight the factors associated with successful and unsuccessful firms. If comparison shows an unfavourable variance, corrective actions can be initiated.

9. Aid in intra firm comparison:

Ratio is an instrument of diagnosis of financial health of an enterprise. It facilitates the management to know whether the firm's financial position is improving or deteriorating by setting a trend with the help of ratios.

10. Evaluation of efficiency:

Ratio analysis is an effective instrument which when properly used is useful to assess important characteristics of business liquidity, solvency, profitability etc. A study of these aspects may enable conclusions to be drawn relating to capabilities of business.

11. Other uses:

There are so many other uses of the ratio analysis. It is an essential part of the budgetary control and standard costing. Ratios are of immense importance in the analysis and interpretation of financial statements as they bring the strength or weakness of a firm.

(B)UTILITY TO SHAREHOLDERS/INVESTORS:

An investor in the company will like to assess the financial position of the concern where he is going to invest. His first interest will be the security of his investment and then a return on the form of dividend or interest. Long term solvency ratios will help him in assessing financial position of the concern. Profitability ratios, on the other hand will be useful to determine profitability position. Ratio analysis will be useful to the investor in making up his mind whether present financial position of the concern warrants further investment or not.

(C) UTILITY TO CREDITORS:

The creditors are interested to know whether financial position of the concern warrants their payments at a specified time or not. The concern pays short term creditors out of its current assets. It the current assets are quite sufficient to meet current liabilities, then the creditors will not hesitate in extending credit facilities. Current and acid test ratios will give an idea about the current financial position of the concern.

(D) UTILITY TO EMPLOYEES:

The employees make use of information available in financial statements published by industrial units are used to calculate ratios for determining short term, long term and overall financial position of the concern government may base its future policies on the basis of industrial information available from various units. The ratios may be used as indicators of overall financial strength of public as well as private sector. In the absence of the reliable economic information, government plans and policies may not prove successful.

Q.EXPLAIN THE LIMITATIONS OF RATIO ANALYSIS.

The ratio analysis is one of the most powerful tools of financial management. Though ratios are simple to calculate and easy to understand, they suffer from some serious limitations.

1. Limitations use of a single ratio:

A single ratio, usually does not convey much of a sense. To make a better interpretation a number of ratios have to be calculated which is likely to confuse the analyst than help him in making any meaningful conclusions.

2. Lack of adequate standards:

There are no well accepted standards or rules or thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.

3. Inherent limitations of accounting:

Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature. Ratios of the past are not necessarily true indications of the future.

4. Change of accounting procedure:

Change in accounting procedure by a firm often makes ratio analysis misleading, e.g., a change in the valuation of methods of inventories, from FIFO to LIFO increases the cost of sales and reduces considerably the value of closing stocks which makes stock turnover ratio to be lucrative and an unfavourable gross profit ratio.

5. Window dressing:

Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence one has to be very careful in making a decision from ratios calculated from such financial statements. But it may be very difficult for an outsider to know about the window dressing made by a firm.

6. Personal bias:

Ratios are only means of financial analysis and not an end in itself. Ratios have to be interpreted and different people may interpret the same ratio in different ways.

7. Uncomparable:

Not only industries differ in their nature but also the firms of the similar business widely differ in their size and accounting procedures etc. It makes comparison of ratios difficult and misleading. Moreover, comparisons are made difficult due to differences in definitions of various financial terms used in the ratio analysis.

8. Absolute figure distortive:

Ratios devoid of absolute figures may prove distortive as ratio analysis is primarily a quantitative analysis and not a qualitative analysis.

9. Price level changes:

While making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.

10. Ratios no substitute:

Ratio analysis is merely a tool of financial statements. Hence, ratios become useless if separated from the statement from which they are computed.

11. Background is overlooked:

When inter firm comparison is made, they differ substantially in age, size, nature of product etc. When an inter firm comparison is made, these factors are not considered. Therefore, ratio analyst cannot give satisfactory results.

12. Qualitative factors are ignored:

Ratios are tools of quantitative analysis only and normally qualitative factors which may generally influence the conclusions derived, are ignored while computing ratios. For instance, a high current ratio may not necessarily mean sound liquid position when current assets include a large inventory consisting of mostly obsolete items. Therefore, it is very difficult to generalize whether a particular ratio is good or bad.

13. Limited use:

Ratio analysis is only a beginning and gives just a fraction of information needed for decision making. Ratio analysis is not a substitute for sound judgment. Conclusions drawn from the ratio analysts are not sure indications of bad or good management. They merely convey certain observations which need further investigations, otherwise wrong conclusions may be drawn. Computation of ratios is not useful unless they are interpreted.

USES /IMPORTANCE/ADVANTAGES OF RATIO ANALYSIS.

The inter relationship that exists among the different items appeared in the financial statements are revealed by accounting ratios. Ratio analysis of a firm's financial statements is of interest to a number of parties, mainly shareholders, creditors, financial executives etc.

A) MANAGERIAL USES OF RATIO ANALYSIS:

1. Helps in decision making:

The information provided in financial statements is not an end in itself and no meaningful conclusion can be drawn from these statements alone. Ratio analysis helps in making decisions from the information provided in these financial statements.

2. Helps in financing forecasting and planning:

Planning is looking ahead and the ratios calculated for a number of years work as a guide for the future. Meaningful conclusions can be drawn for future from these ratios. Thus ratio analysis helps in forecasting and planning.

3. Helps in communicating:

The information contained in the financial statements is conveyed in a meaningful manner to the one for whom it is meant. Thus, ratio analysis helps in communication and enhance the value of the financial statements.

4. Helps in co-ordination:

Ratios even help in coordination which is of utmost importance in effective business management. Better communication of efficiency and weakness of an enterprise results in better coordination in the enterprise.

5. Helps in control:

Standard ratios can be based upon proforma financial statements and variances or deviations, if any, can be found by comparing the actuals with the standards, so as to take a corrective action at the right time. The weakness or otherwise, if any, come to the knowledge of the management which helps in the effective control of the business.

6. Aid to measure general efficiency:

Ratios enable the mass of accounting data to be summarized and simplified. They act as an index of the efficiency of the enterprise.

7. Helps to measure financial solvency:

Ratios helps to evaluate the firm's performance over a period of time by comparing the present ratio with the past ones. They point out firm's liquidity position to meet its short term obligations and long term solvency.

8. Aid in corrective action:

Ratio analysis provides inter firm comparison. They highlight the factors associated with successful and unsuccessful firms. If comparison shows an unfavourable variance, corrective actions can be initiated.

9. Aid in intra firm comparison:

Ratio is an instrument of diagnosis of financial health of an enterprise. It facilitates the management to know whether the firm's financial position is improving or deteriorating by setting a trend with the help of ratios.

10. Evaluation of efficiency:

Ratio analysis is an effective instrument which when properly used is useful to assess important characteristics of business liquidity, solvency, profitability etc. A study of these aspects may enable conclusions to be drawn relating to capabilities of business.

11. Other uses:

There are so many other uses of the ratio analysis. It is an essential part of the budgetary control and standard costing. Ratios are of immense importance in the analysis and interpretation of financial statements as they bring the strength or weakness of a firm.

(B)UTILITY TO SHAREHOLDERS/INVESTORS:

An investor in the company will like to assess the financial position of the concern where he is going to invest. His first interest will be the security of his investment and then a return on the form of dividend or interest. Long term solvency ratios will help him in assessing financial position of the concern. Profitability ratios, on the other hand will be useful to determine profitability position. Ratio analysis will be useful to the investor in making up his mind whether present financial position of the concern warrants further investment or not.

(C) UTILITY TO CREDITORS:

The creditors are interested to know whether financial position of the concern warrants their payments at a specified time or not. The concern pays short term creditors out of its current assets. It the current assets are quite sufficient to meet current liabilities, then the creditors will not hesitate in extending credit facilities. Current and acid test ratios will give an idea about the current financial position of the concern.

(D) UTILITY TO EMPLOYEES:

The employees make use of information available in financial statements published by industrial units are used to calculate ratios for determining short term, long term and overall financial position of the concern government may base its future policies on the basis of industrial information available from various units. The ratios may be used as indicators of overall financial strength of public as well as private sector. In the absence of the reliable economic information, government plans and policies may not prove successful.

Q.EXPLAIN THE LIMITATIONS OF RATIO ANALYSIS.

The ratio analysis is one of the most powerful tools of financial management. Though ratios are simple to calculate and easy to understand, they suffer from some serious limitations.

1. Limitations use of a single ratio:

A single ratio, usually does not convey much of a sense. To make a better interpretation a number of ratios have to be calculated which is likely to confuse the analyst than help him in making any meaningful conclusions.

2. Lack of adequate standards:

There are no well accepted standards or rules or thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.

3. Inherent limitations of accounting:

Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature. Ratios of the past are not necessarily true indications of the future.

4. Change of accounting procedure:

Change in accounting procedure by a firm often makes ratio analysis misleading, e.g., a change in the valuation of methods of inventories, from FIFO to LIFO increases the cost of sales and reduces considerably the value of closing stocks which makes stock turnover ratio to be lucrative and an unfavourable gross profit ratio.

5. Window dressing:

Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence one has to be very careful in making a decision from ratios calculated from such financial statements. But it may be very difficult for an outsider to know about the window dressing made by a firm.

6. Personal bias:

Ratios are only means of financial analysis and not an end in itself. Ratios have to be interpreted and different people may interpret the same ratio in different ways.

7. Uncomparable:

Not only industries differ in their nature but also the firms of the similar business widely differ in their size and accounting procedures etc. It makes comparison of ratios difficult and misleading. Moreover, comparisons are made difficult due to differences in definitions of various financial terms used in the ratio analysis.

8. Absolute figure distortive:

Ratios devoid of absolute figures may prove distortive as ratio analysis is primarily a quantitative analysis and not a qualitative analysis.

9. Price level changes:

While making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.

10. Ratios no substitute:

Ratio analysis is merely a tool of financial statements. Hence, ratios become useless if separated from the statement from which they are computed.

11. Background is overlooked:

When inter firm comparison is made, they differ substantially in age, size, nature of product etc. When an inter firm comparison is made, these factors are not considered. Therefore, ratio analyst cannot give satisfactory results.

12. Qualitative factors are ignored:

Ratios are tools of quantitative analysis only and normally qualitative factors which may generally influence the conclusions derived, are ignored while computing ratios. For instance, a high current ratio may not necessarily mean sound liquid position when current assets include a large inventory consisting of mostly obsolete items. Therefore, it is very difficult to generalize whether a particular ratio is good or bad.

13. Limited use:

Ratio analysis is only a beginning and gives just a fraction of information needed for decision making. Ratio analysis is not a substitute for sound judgment. Conclusions drawn from the ratio analysts are not sure indications of bad or good management. They merely convey certain observations which need further investigations, otherwise wrong conclusions may be drawn. Computation of ratios is not useful unless they are interpreted.

USES /IMPORTANCE/ADVANTAGES OF RATIO ANALYSIS.

The inter relationship that exists among the different items appeared in the financial statements are revealed by accounting ratios. Ratio analysis of a firm's financial statements is of interest to a number of parties, mainly shareholders, creditors, financial executives etc.

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DISCUSS THE DIFFERENT WAYS OF CLASSIFYING RATIOS.

a) Classification by statements:

The traditional classification is based on those statements from which information is obtained for calculating the ratios. The statements which provide information are balance sheet and P&L account.

b) Classification by user:

This classification is based on the parties who are interested in making the use of ratios.

c) Classification according to importance:

This basis of classification of ratios has been recommended by the British institute of management. Based on the importance, there are two types of ratios, viz., primary ratios & secondary ratios.

d) Classification of ratios by purpose/functions-

The basis for classification under this head is the purpose for which the ratios are calculated. Generally ratios are used for the purpose of assessing profitability, activity or operating efficiency & financial position of a concern. Based on the purpose the ratios are classified as profitability ratios, turnover ratios & financial ratios or solvency ratios.

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