UNIT 5 DEPRECIATION ACCOUNTING

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5.0 OBJECTIVES

After going through this unit, learner should be able to:

- understand the concept of depreciation, amortization and depletion;
- explain various methods of depreciation and what impact does it have on the financial statement of the organization; and
- compute depreciation expense using each of the three major depreciation methods.

5.1 INTRODUCTION

Depreciation is the reduction in the value of an asset due to usage, passage of time, wear and tear, technological advancement or obsolescence, depletion or other such factors. Thus, the cost of a fixed asset less its estimated residual value represents the total amount to be depreciated.

In accounting, depreciation is a term used to describe any method of attributing the historical or purchase cost of an asset across its useful life, roughly corresponding to normal wear and tear. It is the allocation of the historical cost of
an asset across time periods when the asset is employed to generate revenues. This process of cost allocation has little or no direct relationship to the market value or current selling price of the asset, it is simply the recognition that a portion of the asset’s cost—the portion that will never be realized through re-sale or disposal of the asset as it was “used up” in the generation of revenues during the time period over which its cost is allocated.

The use of depreciation affects the financial statements and in some countries the taxes of companies and individuals. The recording of depreciation will cause an expense to be recognized, thereby lowering stated profits on the income statement, while the net value of the asset (the portion of the historical cost of the asset that remains to provide future value to the company) will decline on the balance sheet.

5.2 REASONS FOR PROVIDING DEPRECIATION

There are various reasons for providing depreciation. Let us, now, discuss them in detail.

1. The use of any asset erodes its value due to wear and tear or due to the passage of time, or due to obsolescence resulting from a change in technology. The cost of an asset should be written down to reflect its correct value. Since assets like plant and machinery, buildings, and furniture and fixtures are used to generate revenue; the reduction in their values represents a charge, which is debited to the profit and loss account to arrive at the correct profits of the year.

2. Depreciation is a non-cash expenditure—it does not involve an outflow of cash from the business, and therefore results in the accumulation of funds. But since it is debited to the profit and loss account like any other expense, it reduces the taxable profits and, therefore, the burden of tax. It acts as a source of internal financing for replacement of an asset at the end of its useful life.

3. The cost of fixed asset is in nature of capital expenditure and is not charged to revenues of accounting period in which it is purchased or the period in which the said asset is sold or discarded. Thus the cost of fixed asset less its salvage value must be allocated in rational manner to the periods that receive benefit from the use of the asset. This requires depreciation as an item of expense to be provided and recorded for a proper matching of cost with revenue, a condition necessary for each accounting period of asset use.

4. To maintain the capital invested in the cost of asset intact in business so that it can reinvested in the profit earning process.

5. To allocate cost of fixed assets to products.

Causes of Depreciation: Depreciation may be of two types:

(1) Internal-Depreciation which occurs for certain inherent normal causes is known as internal depreciation. The causes of internal depreciation are:

(1.1) Wear and Tear

An asset declines on account of continued use e.g. building, plant,
Depreciation Accounting

machinery etc. such decline depends upon quantum of use of an asset. If a factory works doubleshift instead of single shift, depreciation on plant and machinery will be doubled. It is obvious that such loss is unavoidable. An asset may be kept in proper working conditions through repairs for the time being, but it can not be done so permanently. At one time the asset will become unfit for repairs, when it will no longer be suitable.

(1.2) Depletion

Some assets decline in value proportionate to the quantum of production, e.g. mines, quarry etc. With the raising of coal etc. from coal mine, the total deposit reduces gradually and after some time it will be fully exhausted. Then its value will be nil.

(2) External-Depreciation caused by some external reasons is called external depreciation.

The causes of external depreciation are:

(2.1) Obsolescence

Some assets, though in proper working order, may become obsolete. For example old machine becomes obsolete with the invention of more economical and sophisticated machine, whose productive capacity is generally higher and cost of production is lesser. In order to survive in the competitive market the manufacturer must install new machine replacing the old one.

(2.2) Passage of time

Some assets diminish in value on account of sheer passage of time, even though they are not used e.g. lease hold property, patent rights, copy right etc.

(2.3) Accidents

Assets may be destroyed by abnormal reasons such as fire, earth quake, flood etc. in such a case the destroyed asset may be written-off as loss and a new one purchased.

5.3 NEED FOR PROVISION FOR DEPRECIATION

The need for provision for depreciation arises for the following reasons:

1) Ascertainment of true profit or loss-Depreciation is a loss. So unless it is considered like all other expenses and losses, true profit & loss cannot be ascertained. In other words, depreciation must be considered in order to find out true profit / loss of a business.

2) Ascertainment of true cost of production-Goods are produced with the help of plant and machinery which incurs depreciation in the process of production. This depreciation must be considered as a part of the cost of production of goods. Otherwise, the cost of production would be shown less than the true cost. Sale price is normally fixed on the basis of cost of production. So, if the cost of production is shown less by ignoring depreciation, the sale price will also be fixed at a low level resulting in loss to the business.
3) True Valuation of Assets—Value of assets gradually decreases on account of depreciation. If depreciation is not taken into account, the value of asset will be shown in the books at a figure higher than its true value and hence the true financial position of the business will not be disclosed through Balance Sheet.

4) Replacement of Assets—After some time an asset will be completely exhausted on account of use. A new asset then is purchased requiring large sum of money. If the whole amount of profit is withdrawn from business each year without considering the loss on account of depreciation, necessary sum may not be available for buying the new assets. In such a case the required money is to be collected by introducing fresh capital or by obtaining loan by selling some other assets. This is contrary & sound commercial policy.

5) Keeping Capital’ Intact—Capital invested in buying an asset gradually diminishes on account of depreciation. If loss on account of depreciation is not considered in determining profit/loss at the year end, profit will be shown more. If the excess profit is withdrawn, the working capital will gradually reduce, the business will become weak and its profit earning capacity will also fall.

6) Legal Restriction—According to Sec. 205 of the Companies Act, 1956 dividend cannot be declared without charging depreciation on fixed assets. Thus in “case of joint stock companies charging of depreciation is compulsory.

Depreciation as a Source of Revenue

Depreciation when posted on the debit side of the P&L account, the profit is decreased. In other way, the profits that should be distributed among the shareholders get decreased. It means that the residual is placed in the business itself.

Since depreciation is an allocation of cost over accounting periods, it is not directly connected to market value—or the amount that the asset would be worth if it was sold. The book value of an asset, computed as the actual cost minus the accumulated depreciation, is simply the unallocated cost of the item. The pattern of depreciation is fixed, and does not respond to changing market conditions. Depreciation does not involve any cash flow. This is clearest in the simple case of an asset acquired entirely by cash payment. Although the initial purchase is a cash flow, the subsequent allocation of part of the cost as a period expense involves only an accounting entry. Depreciation is not intended as a mechanism to provide for replacement of the asset. There are no cash flows associated with depreciation, and there is no connection with any cash accumulated for replacement of the asset. The asset may or may not be replaced—this is a capital budgeting decision that is immaterial to the recognition of expense.

Because depreciation is an expense but has no associated cash flow, it is sometimes described as being “added back” to arrive at cash flow for the firm. This gives the impression that depreciation is somehow a source of cash flow. The “adding back,” however, is simply recognition that no cash flow occurred, and depreciation cannot supply cash.

5.4 FACTORS DETERMINING DEPRECIATION EXPENSE

Actual cost of the asset i.e. the price at which an asset is purchased and recorded in books of accounts.
Estimated salvage value of asset ie. the amount obtained when the asset is sold, discarded or exchanged for some other asset at the end of its useful service life. The following are used in determining useful life of an asset:

**Intensity of use:** Life of an asset depends on the way in which it is put to use, for e.g. high speed and continuous operation of machines may result in shorter useful life than low speed and intermittent operations.

**Standard of maintenance:** Careful handling and frequent overhauling usually tends to prolong useful life of asset.

**Replacement policy of management:** for e.g. an asset having expected life of 15 years may have a useful life of 10 years if policy of firms is to exchange or dispose off the asset after 10 years.

### 5.5 RECORDING DEPRECIATION

For historical cost purposes, assets are recorded on the balance sheet at their original cost; this is called the historical cost. Historical cost minus all depreciation expenses recognized on the asset since purchase is called the book value. Depreciation is not taken out of assets directly. It is instead recorded as accumulated depreciation. Balancing an asset account with its corresponding accumulated depreciation account will result in the net book value. The net book value will never fall below the salvage value, meaning that once an asset is fully depreciated, no further expenses will be taken during its life. Salvage value is the estimated value of the asset at the end of its useful life.

Recording a depreciation expense will involve a credit to an accumulated depreciation account. So the corresponding debit will involve either an expense account or an asset account which represents a future expense, such as work in process. Depreciation is recorded as an adjusting journal entry.

### 5.6 CONCEPTS OF AMORTIZATION, DEPRECIATION AND DEPLETION

As there are very few assets which last forever, one of the main principles of accrual accounting requires that an asset’s cost be proportionally expensed based on the time period over which the asset was used. Depreciation and amortization (as well as depletion) are methods that are used to prorate the cost of a specific type of asset to the asset’s life. It is important to mention that these methods are calculated by subtracting the asset’s salvage value from its original cost.

**Amortization** usually refers to spreading an intangible asset’s cost over that asset’s useful life. For example, a patent on a piece of medical equipment usually has a life of 17 years. The cost involved with creating the medical equipment is spread out over the life of the patent, with each portion being recorded as an expense on the company’s income statement.

**Depreciation**, on the other hand, refers to prorating a tangible asset’s cost over that asset’s life. For example, an office building can be used for a number of years before it becomes run down and is sold. The cost of the building is spread out over the predicted life of the building, with a portion of the cost being expensed each accounting year.
**Depletion** refers to the allocation of the cost of natural resources over time. For example, an oil well has a finite life before all of the oil is pumped out. Therefore, the oil well’s setup costs are spread out over the predicted life of the oil well.

### 5.7 METHODS OF DEPRECIATION

There are several methods for calculating depreciation, generally based on either the passage of time or the level of activity (or use) of the asset.

#### 5.7.1 Straight Line Method

Straight-line depreciation is the simplest and most often used technique, in which the company estimates the salvage value of the asset at the end of the period during which it will be used to generate revenues (useful life), and will expense a portion of original cost in equal increments over that period. The salvage value is an estimate of the value of the asset at the time it will be sold or disposed of; it may be zero Salvage value is scrap value, by another name.

For example, a vehicle that depreciates over 5 years, is purchased at a cost of Rs. 17,000, and will have a salvage value of Rs. 2,000 per year: \( \frac{(Rs.17,000 - Rs.2,000)}{5 \text{ years}} = Rs. 3,000 \) annual straight-line depreciation expense. In other words, it is the depreciable cost of the asset divided by the number of years of its useful life.

This table illustrates the straight-line method of depreciation. Book value at the beginning of the first year of depreciation is the original cost of the asset. At any time book value equals original cost minus accumulated depreciation.

**Book Value = Original Cost - Accumulated Depreciation**

Book value at the end of year becomes book value at the beginning of next year. The asset is depreciated until the book value equals scrap value.

<table>
<thead>
<tr>
<th>Book Value - Beginning of Year</th>
<th>Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value - End of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs.17,000 (Original Cost)</td>
<td>Rs.3,000</td>
<td>Rs.3,000</td>
<td>Rs.14,000</td>
</tr>
<tr>
<td>Rs.14,000</td>
<td>Rs.3,000</td>
<td>Rs.6,000</td>
<td>Rs.11,000</td>
</tr>
<tr>
<td>Rs.11,000</td>
<td>Rs.3,000</td>
<td>Rs.9,000</td>
<td>Rs.8,000</td>
</tr>
<tr>
<td>Rs.8,000</td>
<td>Rs.3,000</td>
<td>Rs.12,000</td>
<td>Rs.5,000</td>
</tr>
<tr>
<td>Rs.5,000</td>
<td>Rs.3,000</td>
<td>Rs.15,000</td>
<td>Rs.2,000 (Scrap Value)</td>
</tr>
</tbody>
</table>

If the vehicle were to be sold and the sales price exceeded the depreciated value (net book value) then the excess would be considered a gain and subject to the depreciation recapture rule. In addition, this gain above the depreciated value would be recognized as ordinary income by the tax office. If the sales price is ever less than the book value, the resulting capital loss is tax deductible. If the sale price were ever more than the original book value, then the gain above the original book value is recognized as a capital gain.
5.7.2 Declining-Balance Method (Reducing Balance Method)

Depreciation methods that provide for a higher depreciation charge in the first year of an asset’s life and gradually decreasing charges in subsequent years are called **accelerated depreciation methods**. This may be a more realistic reflection of an asset’s actual expected benefit from the use of the asset: many assets are most useful when they are new. One popular accelerated method is the **declining-balance method**. Under this method the Book Value is multiplied by a fixed rate.

**Annual Depreciation = Depreciation Rate * Book Value at Beginning of Year**

The most common rate used is double the straight-line rate, For this reason, this technique is referred to as the **double-declining-balance method**. To illustrate, suppose a business has an asset with Rs.1,000 Original Cost, Rs.100 Salvage Value, and 5 years useful life. First, calculate straight-line depreciation rate. Since the asset has 5 years useful life, the straight-line depreciation rate equals \( \frac{100\%}{5} = 20\% \) per year. With double-declining-balance method, as the name suggests, double that rate, or 40% depreciation rate is used. The table below illustrates the double-declining-balance method of depreciation. Book Value at the beginning of the first year of depreciation is the Original Cost of the asset. At any time Book Value equals Original Cost minus Accumulated Depreciation.

**Book Value = Original Cost - Accumulated Depreciation**

Book Value at the end of year becomes Book Value at the beginning of next year. The asset is depreciated until the Book Value equals Salvage Value, or Scrap Value.

<table>
<thead>
<tr>
<th>Book Value - Beginning of Year</th>
<th>Depreciation Rate</th>
<th>Depreciation Expense</th>
<th>Accumulated Depreciation</th>
<th>Book Value - End of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs.1,000 (Original Cost)</td>
<td>40%</td>
<td>Rs.400</td>
<td>Rs.400</td>
<td>Rs.600</td>
</tr>
<tr>
<td>Rs.600</td>
<td>40%</td>
<td>Rs.240</td>
<td>Rs.640</td>
<td>Rs.360</td>
</tr>
<tr>
<td>Rs.360</td>
<td>40%</td>
<td>Rs.144</td>
<td>Rs.784</td>
<td>Rs.216</td>
</tr>
<tr>
<td>Rs.216</td>
<td>40%</td>
<td>Rs.86.40</td>
<td>Rs.870.40</td>
<td>Rs.129.60</td>
</tr>
<tr>
<td>Rs.129.60 (Scrap Value)</td>
<td>Rs.129.60 - Rs.100</td>
<td>Rs.29.60</td>
<td>Rs.900</td>
<td>Rs.100</td>
</tr>
</tbody>
</table>

The Salvage Value is not considered in determining the annual depreciation, but the Book Value of the asset being depreciated is never brought below its Salvage Value, regardless of the method used. The process continues until the Salvage Value, or the end of the asset’s useful life, is reached. In the last year of depreciation a subtraction might be needed in order to prevent Book Value from falling below estimated Scrap Value.

Since declining balance depreciation doesn’t always depreciate an asset fully by its end of life, some methods also compute a straight-line depreciation each year, and apply the greater of the two. This has the effect of converting from declining-balance depreciation to straight-line depreciation at a midpoint in the asset’s life. A business purchases a new machine for Rs.75,000 on 1 January 2017. It is estimated that the machine will have a residual value of Rs. 10,000 and a useful
The business decides to calculate annual depreciation at the rate of 40% of the written-down value. The business has an accounting year end of 31 December.

**Example to differentiate between Straight line and Reducing balance depreciation method**

Using the reducing balance depreciation method, the calculation of the annual depreciation charge is as follows:

<table>
<thead>
<tr>
<th>31 December</th>
<th>Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original machine cost</td>
<td>75,000</td>
</tr>
<tr>
<td>2013</td>
<td>Depreciation in 2013 (40% cost)</td>
</tr>
<tr>
<td></td>
<td>Written down value at 31 December 2013</td>
</tr>
<tr>
<td>2014</td>
<td>Depreciation in 2014 (40% of WDV @ 31 December 2013)</td>
</tr>
<tr>
<td></td>
<td>Written down value at 31 December 2014</td>
</tr>
<tr>
<td>2015</td>
<td>Depreciation in 2015 (40% of WDV @31 December 2014)</td>
</tr>
<tr>
<td></td>
<td>Written down value at 31 December 2015</td>
</tr>
<tr>
<td>2016</td>
<td>Depreciation in 2016 (40% of WDV @31 December 2015)</td>
</tr>
<tr>
<td></td>
<td>Written down value at 31 December 2016</td>
</tr>
<tr>
<td>2017</td>
<td>Depreciation in 2017 (40% of WDV @31 December 2016)</td>
</tr>
<tr>
<td></td>
<td>Written down value at 31 December 2017</td>
</tr>
</tbody>
</table>

The reducing balance method can result in significant differences in the annual depreciation charge, depending on the “percentage” of written-down value that is used to calculate the charge,

**Straight Line Depreciation Method**

Using the straight line depreciation method, the calculation of the annual depreciation charge is as follows:

\[ Dpn = \frac{(C-R)}{N} \]

where:

\[ Dpn = \text{Annual straight-line depreciation charge}, \]

\[ C = \text{Cost of the asset} \]

\[ R = \text{Residual value of the asset} \]

\[ N = \text{Useful economic life of the asset (years)} \]

So the calculation is:

\[ Dpn = \frac{(Rs.75,000-Rs.10,000)}{5} \]

\[ Dpn = Rs.13,000 \]

In the accounts of the business a depreciation charge of Rs. 13,000 will be expensed in the profit and loss account for each of the five years of the asset’s useful economic life.
In the annual balance sheet, the machine would be shown at its original cost less the total accumulated depreciation for the asset to date.

**Example of how this would be disclosed in the accounts**

At the end of the third year of ownership of the machine, the financial accounts of the business would include the following items in relation to the machine:

**In the Profit and Loss Account:**

Depreciation of Machinery - Charge: Rs.13,000

**In the Balance Sheet at 31 December 2015:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine at Cost</td>
<td>75,000</td>
</tr>
<tr>
<td>less: Accumulated Depreciation</td>
<td>39,000</td>
</tr>
<tr>
<td>Machine at net book value</td>
<td>36,000</td>
</tr>
</tbody>
</table>

The figure for accumulated depreciation of Rs. 39,000 at 31 December 2015 represents three years’ worth of depreciation at Rs. 13,000 per year.

The cost of the machine (Rs. 35,000) less the accumulated depreciation charged on the machine (Rs. 39,000) is known as the “written-down value” (“WDV”) or “net book value” (“NBV”).

It should be noted that WDV or NBV is simply an accounting value that is the result of a decision about which method is used to calculate depreciation. It does not necessarily mean that the machine is actually worth more or less than the WDV or NBV.

In the example above, the total amount charged to depreciation in the first three years of owning the machine (2013-2015) was Rs.58,800 (compared with Rs.39,000 if a straight line depreciation method has been used).

Importantly, no depreciation deduction is allowed for inventories or other property held for sale to customers in the ordinary course. Land is also not depreciable (However, improvements to land are usually depreciable, including landscaping).

### 5.7.3 Other methods

**Activity depreciation methods** are not based on time, but on a level of activity. This could be miles driven for a vehicle, or a cycle count for a machine. When the asset is acquired, we estimate its life in terms of this level of activity. Assume the vehicle above is estimated to go 50,000 kilometers in its lifetime. We calculate a per-mile depreciation rate: $(52,000 \text{ cost} - 2,000 \text{ (salvage)}) / 50,000 \text{ miles} = \text{Re 1 per kilometer}$. Each year, we then calculate the depreciation expense by multiplying the rate by the actual activity level.

**Sum of Years Digits** is a historical depreciation method that results in a more accelerated write off than straight line, but less than declining balance or later methods. Salvage value is counted in the method. There are no property classes of later methods.
5.8 ACCOUNTING FOR THE CHANGE IN DEPRECIATION METHOD

Any change in depreciation caused by an alteration in the cost of the asset, the residual value or the life will have a prospective effect in the books of accounts. This means that if in the fifth year, the life is reduced from ten years to eight, the unamortized amount will be charged to revenue over the remaining life of three years (eight minus five).

For a change in policy, the amount will be recomputed on a retrospective basis from the date in which the asset is put to use; any deficiency or surplus arising from this re-computation will be adjusted in the year in which the method is changed.

While so far, we have discussed a possibility of higher depreciation suppressing profits, there may also be situations where profits receive a leg-up because of lower depreciation. For instance, TCS, in the first quarter increased the useful life of computers from two to four years. This boosted profits by an estimated Rs 50 crore. In such a situation, the company’s profits from operations are actually lower.

Under both these circumstances, you can alternatively compare the operating profits (earnings before interest, depreciation and taxes) to see how well the company has performed.

The above discussion is supported by Accounting Standard (AS) 5 (Net Profit or Loss for the Period, Prior Period Items and Changes in Accounting Policies)

The method of depreciation is applied consistently to provide comparability of the results of the operations of the enterprise from period to period. A change from one method of providing depreciation to another is made only if the adoption of the new method is required by statute or for compliance with an accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of the financial statements of the enterprise. When such a change in the method of depreciation is made, depreciation is recalculated in accordance with the new method from the date of the asset coming into use. The deficiency or surplus arising from retrospective recomputation of depreciation in accordance with the new method is adjusted in the accounts in the year in which the method of depreciation is changed. In case the change in the method results in deficiency in depreciation in respect of past years, the deficiency is charged in the statement of profit and loss. In case the change in the method results in surplus, the surplus is credited to the statement of profit and loss. Such a change is treated as a change in accounting policy and its effect is quantified and disclosed.

Check Your Progress A

1) State any two reasons for proving depreciation.

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2) List Out the causes of depreciation.
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3) What do you mean by Amortization and Depletion?
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4) Based on the following information answer questions 4.1 to 4.3

ABC limited purchases a machine for Rs. 3,00,000/- on April 1, 2005. Depreciation is provided on straight line method. The estimated life of machine is 9 years and the scrap value is Rs. 30,000/-.  

4.1 The amount of depreciation charged is
   a. Rs. 33,333/-
   b. Rs. 30,000/-
   c. Rs. 27,000/-
   d. Rs. 35,000/-
   e. Rs. 41,111/-

4.2 The rate of depreciation in the above case is
   a. 10%
   b. 9%
   c. 15%
   d. 8%
   e. 7%

4.3 If the asset is disposed-off on March 31, 2007 for Rs. 2,00,000/-, the profit/loss in such case is
   a. Rs. 40,000/- (profit)
   b. Rs. 40,000/- (loss)
   c. Rs. 70,000/- (profit)
   d. Rs. 70,000/- (loss)
   e. Rs. 30,000/- (profit)

4.4 An asset was purchased for Rs. 10,000/- on which depreciation was provided @5% on SLM method, the WDV of the asset at the end of two years is
   a. Rs. 7,500/-
   b. Rs. 8,000/-
   c. Rs. 8,500/-
4.5 Star Limited purchased a machine for Rs. 10,000/- on April 1, 2017. Depreciation is provided @10% on written down value method. The depreciation provided on machine in 2018-19 financial year is

a. Rs. 750/-
b. Rs. 900/-
c. Rs. 1,000/-
d. Rs. 1,900/-
e. Rs. 2,000/-

4.6 The written down value of the machine as on March 31, 2018 is (based on the information given in above question)

a. Rs. 10,000/-
b. Rs. 9,000/-
c. Rs. 8,100/-
d. Rs. 8,000/-
e. Rs. 7,000/-

4.7. If the machine (given above) is sold for Rs. 8,000/- on December 1, 2018, the profit/loss on sale of machine is

a. Profit of Rs 400/-
b. Loss of Rs. 400/-
c. Profit of Rs. 1,000/-
d. Loss of Rs. 2,000/-
e. Profit of Rs. 2,000/-

5) On April 1, 2016, Company A purchased an equipment at the cost of Rs.140,000. This equipment is estimated to have 5 year useful life. At the end of the 5th year, the salvage value (residual value) will be Rs. 20,000. Company A recognizes depreciation to the nearest whole month. Calculate the depreciation expenses for 2016, 2017 and 2018 using straight line depreciation method.

6) On January 1, 2012, Lynn Corporation purchased a machine for Rs.100,000. Lynn paid shipping expenses of Rs.1,000 as well as installation costs of Rs. 2,400. The machine was estimated to have a useful life of ten years and an estimated salvage value of Rs. 6,000. In January 2013, additions costing Rs. 7,200 were made to the machine. These additions significantly improved the quality of output, but did not change the life or salvage value of the machine. If Lynn records depreciation under the straight-line method, what is depreciation expense for 2013.

7) The sale of a depreciable asset resulting in a loss indicates that the proceeds from the sale were:
a) Less than current market value.
b) Greater than cost.
c) Greater than book value.
d) Less than book value.

8) On April 1, 2016, Company A purchased an equipment at the cost of Rs.140,000. This equipment is estimated to have 5 year useful life. At the end of the 5th year, the salvage value (residual value) will be Rs. 20,000. Company A recognizes depreciation to the nearest whole month. Calculate the depreciation expenses for 2016, 2017 and 2018 using double declining balance depreciation method.

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5.9 DEPRECIATION ACCOUNTING - ACCOUNTING STANDARDS (AS) 6

The following is the text of the revised Accounting Standard (AS) 6, ‘Depreciation Accounting’, issued by the Council of the Institute of Chartered Accountants of India.

Introduction

Depreciation Accounting

1. This Statement deals with depreciation accounting and applies to all depreciable assets, except the following items to which special considerations apply:—

   (i) forests, plantations and similar regenerative natural resources;
   (ii) wasting assets including expenditure on the exploration for and extraction of minerals, oils, natural gas and similar non-regenerative resources;
   (iii) expenditure on research and development;
   (iv) goodwill;
   (v) live stock.

   This statement also does not apply to land unless it has a limited useful life for the enterprise.

2. Different accounting policies for depreciation are adopted by different enterprises. Disclosure of accounting policies for depreciation followed by an enterprise is necessary to appreciate the view presented in the financial statements of the enterprise.

Definitions

3. The following terms are used in this Statement with the meanings specified:

   3.1 Depreciation is a measure of the wearing out, consumption or other loss of value of a depreciable asset arising from use, effluxion 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 asset. Depreciation includes amortisation of assets whose useful life is predetermined.
3.2 Depreciable assets are assets which

(i) are expected to be used during more than one accounting period; and

(ii) have a limited useful life; and

(iii) are held by an enterprise for use in the production or supply of goods and services, for rental to others, or for administrative purposes and not for the purpose of sale in the ordinary course of business.

3.3 Useful life is either (i) the period over which a depreciable asset is expected to be used by the enterprise; or (ii) the number of production or similar units expected to be obtained from the use of the asset by the enterprise.

3.4 Depreciable amount of a depreciable asset is its historical cost, or other amount substituted for historical cost in the financial statements, less the estimated residual value.

Explanation

4. Depreciation has a significant effect in determining and presenting the financial position and results of operations of an enterprise. Depreciation is charged in each accounting period by reference to the extent of the depreciable amount, irrespective of an increase in the market value of the assets.

5. Assessment of depreciation and the amount to be charged in respect thereof in an accounting period are usually based on the following three factors:

(i) historical cost or other amount substituted for the historical cost of the depreciable asset when the asset has been revalued;

(ii) expected useful life of the depreciable asset and

(iii) estimated residual value of the depreciable asset.

6. Historical cost of a depreciable asset represents its money outlay or its equivalent in connection with its acquisition, installation and commissioning as well as for additions to or improvement thereof. The historical cost of a depreciable asset may undergo subsequent changes arising as a result of increase or decrease in long term liability on account of exchange fluctuations, price adjustments, changes in duties or similar factors.

7. The useful life of a depreciable asset is shorter than its physical life and is:

(i) pre-determined by legal or contractual limits, such as the expiry dates of related leases;

(ii) directly governed by extraction or consumption;

(iii) dependent on the extent of use and physical deterioration on account of wear and tear which again depends on operational factors, such as, the number of shifts for which the asset is to be used, repair and maintenance policy of the enterprise etc.; and

(iv) reduced by obsolescence arising from such factors as:

(a) technological changes;
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(b) improvement in production methods;
(c) change in market demand for the product or service output of
the asset; or
(d) legal or other restrictions.

8. Determination of the useful life of a depreciable asset is a matter of estimation
and is normally based on various factors including experience with similar
types of assets. Such estimation is more difficult for an asset using new
technology or used in the production of a new product or in the provision of
a new service but is nevertheless required on some reasonable basis.

9. Any addition or extension to an existing asset which is of a capital nature
and which becomes an integral part of the existing asset is depreciated over
the remaining useful life of that asset. As a practical measure, however,
depreciation is sometimes provided on such addition or extension at the rate
which is applied to an existing asset. Any addition or extension which retains
a separate identity and is capable of being used after the existing asset is
disposed of, is depreciated independently on the basis of an estimate of its
own useful life.

10. Determination of residual value of an asset is normally a difficult matter. If
such value is considered as insignificant, it is normally regarded as nil. On
the contrary, if the residual value is likely to be significant, it is estimated at
the time of acquisition/installation, or at the time of subsequent revaluation
of the asset. One of the bases for determining the residual value would be
the realisable value of similar assets which have reached the end of their
useful lives and have operated under conditions similar to those in which
the asset will be used.

11. The quantum of depreciation to be provided in an accounting period involves
the exercise of judgement by management in the light of technical,
commercial, accounting and legal requirements and accordingly may need
periodical review. If it is considered that the original estimate of useful life
of an asset requires any revision, the unamortised depreciable amount of the
asset is charged to revenue over the revised remaining useful life.

12. There are several methods of allocating depreciation over the useful life of
the assets. Those most commonly employed in industrial and commercial
enterprises are the straight line method and the reducing balance method.
The management of a business selects the most appropriate method(s) based
on various important factors e.g., (i) type of asset, (ii) the nature of the use
of such asset and (iii) circumstances prevailing in the business. A combination
of more than one method is sometimes used. In respect of depreciable assets
which do not have material value, depreciation is often allocated fully in the
accounting period in which they are acquired.

13. The statute governing an enterprise may provide the basis for computation
of the depreciation. For example, the Companies Act, 1956 lays down the
rates of depreciation in respect of various assets. Where the management’s
estimate of the useful life of an asset of the enterprise is shorter than that
envisioned under the provisions of the relevant statute, the depreciation
provision is appropriately computed by applying a higher rate. If the
management’s estimate of the useful life of the asset is longer than that envisaged under the statute, depreciation rate lower than that envisaged by the statute can be applied only in accordance with requirements of the statute.

14. Where depreciable assets are disposed of, discarded, demolished or destroyed, the net surplus or deficiency, of material, is disclosed separately.

15. The method of depreciation is applied consistently to provide comparability of the results of the operations of the enterprise from period to period. A change from one method of providing depreciation to another is made only if the adoption of the new method is required by statute or for compliance with an accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of the financial statements of the enterprise. When such a change in the method of depreciation is made, depreciation is recalculated in accordance with the new method from the date of the asset coming into use. The deficiency or surplus arising from retrospective recomputation of depreciation in accordance with the new method is adjusted in the accounts in the year in which the method of depreciation is changed. In case the change in the method results in deficiency in depreciation in respect of past years, the deficiency is charged in the statement of profit and loss. In case the change in the method results in surplus, the surplus is credited to the statement of profit and loss. Such a change is treated as a change in accounting policy and its effect is quantified and disclosed.

16. Where the historical cost of an asset has undergone a change due to circumstances specified in para 6 above, the depreciation on the revised unamortised depreciable amount is provided prospectively over the residual useful life of the asset.

Disclosure

17. The depreciation methods used, the total depreciation for the period for each class of assets, the gross amount of each class of depreciable assets and the related accumulated depreciation are disclosed in the financial statements along with the disclosure of other accounting policies. The depreciation rates or the useful lives of the assets are disclosed only if they are different from the principal rates specified in the statute governing the enterprise.

18. In case the depreciable assets are revalued, the provision for depreciation is based on the revalued amount on the estimate of the remaining useful life of such assets. In case the revaluation has a material effect on the amount of depreciation, the same is disclosed separately in the year in which revaluation is carried out.

19. A change in the method of depreciation is treated as a change in an accounting policy and is disclosed accordingly.

Accounting Standard

20. The depreciable amount of a depreciable asset should be allocated on a systematic basis to each accounting period during the useful life of the asset.

21. The depreciation method selected should be applied consistently from period to period. A change from one method of providing depreciation to another
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should be made only if the adoption of the new method is required by statute or for compliance with an accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of the financial statements of the enterprise. When such a change in the method of depreciation is made, depreciation should be recalculated in accordance with the new method from the date of the asset coming into use. The deficiency or surplus arising from retrospective recomputation of depreciation in accordance with the new method should be adjusted in the accounts in the year in which the method of depreciation is changed. In case the change in the method results in deficiency in depreciation in respect of past years, the deficiency should be charged in the statement of profit and loss. In case the change in the method results in surplus, the surplus should be credited to the statement of profit and loss. Such a change should be treated as a change in accounting policy and its effect should be quantified and disclosed.

22. The useful life of a depreciable asset should be estimated after considering the following factors:
   (i) expected physical wear and tear;
   (ii) obsolescence;
   (iii) legal or other limits on the use of the asset.

23. The useful lives of major depreciable assets or classes of depreciable assets may be reviewed periodically. Where there is a revision of the estimated useful life of an asset, the unamortised depreciable amount should be charged over the revised remaining useful life.

24. Any addition or extension which becomes an integral part of the existing asset should be depreciated over the remaining useful life of that asset. The depreciation on such addition or extension may also be provided at the rate applied to the existing asset. Where an addition or extension retains a separate identity and is capable of being used after the existing asset is disposed of, depreciation should be provided independently on the basis of an estimate of its own useful life.

25. Where the historical cost of a depreciable asset has undergone a change due to increase or decrease in long term liability on account of exchange fluctuations, price adjustments, changes in duties or similar factors, the depreciation on the revised unamortised depreciable amount should be provided prospectively over the residual useful life of the asset.

26. Where the depreciable assets are revalued, the provision for depreciation should be based on the revalued amount and on the estimate of the remaining useful lives of such assets. In case the revaluation has a material effect on the amount of depreciation, the same should be disclosed separately in the year in which revaluation is carried out.

27. If any depreciable asset is disposed of, discarded, demolished or destroyed, the net surplus or deficiency, of material, should be disclosed separately.

28. The following information should be disclosed in the financial statements:
   (i) the historical cost or other amount substituted for historical cost of each class of depreciable assets;
29. The following information should also be disclosed in the financial statements along with the disclosure of other accounting policies:

(i) depreciation methods used; and

(ii) depreciation rates or the useful lives of the assets, if they are different from the principal rates specified in the statute governing the enterprise.

5.10 LET US SUM UP

Depreciation is the deduction in the value of an asset due to its usage, passage of time, wear and tear and any such other factors. The recording of Depreciation is therefore important for any company as it affects the income statements the future value of the fixed asset on the valuation. Provision for Depreciation helps to ascertain the true profit or loss as depreciation provided on fixed asset is a loss. It helps to keep the capital intact as the depreciation amount accumulated can help to replace the old asset with new assets. Section 205 of the company’s act 1956 regulates that no dividend can be declared without charging depreciation on fixed assets. So depreciation is provided on fixed assets whereas amortization is done of intangible assets. In amortization the cost of intangible assets is spread over the life of the patent and each portion is recorded as an expense on the company’s income statement. The various methods of depreciation are Straight Line method, Declining Balance method, Activity Depreciation method, Sum of Years Digit etc. Accounting Standard- 6 as specified by Institute of Chartered Accountant of India is used for accounting of Depreciation.

5.11 KEY WORDS

Depreciation is the reduction in the value of an asset due to usage, passage of time, wear and tear, technological outdating or obsolescence depletion or other such factors.

Salvage value is the estimated value of the asset at the end of its useful life.

Amortization usually refers to spreading an intangible assets cost over that asset’s useful life.

Depletion refers to the allocation of the cost of natural resources over time.

Straight-line depreciation is the simplest and most often used technique, in which the company estimates the salvage value of the asset at the end of the period during which it will be used to generate revenues (useful life), and will expense a portion of original cost in equal increments over that period.

Declining-balance method. Under this method the Book Value is multiplied by a fixed rate of depreciation.

Sum of Years Digits is a historical depreciation method that results in a more accelerated write off than straight line, but less than declining balance or later methods.
5.12 ANSWERS TO CHECK YOUR PROGRESS

A (4.1) b; (4.2) a; (4.3) b; (4.4) d; (4.5) b; (4.6) b; (4.7) b;

5) A Depreciation for 2016
   = (Rs.140,000 - Rs. 20,000) x 1/5 x 9/12 = Rs. 18,000
   Depreciation for 2017
   = (Rs. 140,000 - Rs. 20,000) x 1/5 x 12/12 = Rs. 24,000
   Depreciation for 2018
   = (Rs. 140,000 - Rs. 20,000) x 1/5 x 12/12 = Rs. 24,000

6) Rs. 10,540. The original annual depreciation is Rs. 9,740 (Rs. 100,000 + Rs. 1,000 + Rs. 2,400 - Rs. 6,000)/10 years). The additional amount of depreciation is Rs. 800 (Rs. 7,200/9 years) per year.

7) d. A loss on the sale of a depreciable asset indicates that the proceeds received from the sale were less than the recorded book value of the asset. A gain would result if the proceeds were greater than cost or book value. Hopefully, the sale proceeds equaled market value; a loss, therefore, suggests that market value is also below book value.

8) Useful life = 5 years – > Straight line depreciation rate = 1/5 = 20% per year
   Depreciation rate for double declining balance method
   = 20% x 200% = 20% x 2 = 40% per year
   Depreciation for 2016
   = Rs. 140,000 x 40% x 9/12 = Rs. 42,000
   Depreciation for 2017
   = (Rs. 140,000 - Rs. 42,000) x 40% x 12/12 = Rs. 39,200
   Depreciation for 2018
   = (Rs. 140,000 - Rs. 42,000 - Rs. 39,200) x 40% x 12/12 = Rs. 23,520

Double Declining Balance Depreciation Method

<table>
<thead>
<tr>
<th>Year</th>
<th>Book Value at the beginning</th>
<th>Depreciation Rate</th>
<th>Depreciation Expense</th>
<th>Book Value at the year-end</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Rs. 140,000</td>
<td>40%</td>
<td>Rs. 42,000 (*1)</td>
<td>Rs. 98,000</td>
</tr>
<tr>
<td>2017</td>
<td>Rs. 98,000</td>
<td>40%</td>
<td>Rs. 39,200 (*2)</td>
<td>Rs. 58,800</td>
</tr>
<tr>
<td>2018</td>
<td>Rs. 58,800</td>
<td>40%</td>
<td>Rs. 23,520 (*3)</td>
<td>Rs. 35,280</td>
</tr>
<tr>
<td>2019</td>
<td>Rs. 35,280</td>
<td>40%</td>
<td>Rs. 14,112 (*4)</td>
<td>Rs. 21,168</td>
</tr>
<tr>
<td>2020</td>
<td>Rs.21,168</td>
<td>40%</td>
<td>Rs. 1,168 (*5)</td>
<td>Rs. 20,000</td>
</tr>
</tbody>
</table>

(*1) Rs. 140,000 x 40% x 9/12 = Rs. 42,000
(*2) Rs. 98,000 x 40% x 12/12 = Rs. 39,200
(*3) Rs. 58,800 x 40% x 12/12 = Rs. 23,520
(*) Rs. 35,280 x 40% x 12/12 = Rs. 14,112

(*) Rs. 21,168 x 40% x 12/12 = Rs. 8,467

-> Depreciation for 2020 is Rs. 1,168 to keep book value same as salvage value.
> Rs. 21,168 - Rs. 20,000 = Rs. 1,168 (At this point, depreciation stops.)

-> If Rs. 8,467 is charged to depreciation expense, book value goes below salvage value (Rs. 21,168 - Rs. 8,467 = Rs. 12,701).

5.13 TERMINAL QUESTIONS/EXCERCISES

1) What do you mean by depreciation? Explain the causes of depreciation.

2) Discuss the reasons for providing depreciation and justify the rational for provision of depreciation.

3) What are the factors that determine depreciation expense.

4) Write a notes on:
   a) Amortization
   b) Depletion

5) Discuss the straight and reducing balance methods of depreciation and state the difference between them.

6) Explain the issues of depreciation in detail which are stated in Accounting Standard - 6 (AS-6).

7) Provided below is information available for Masters Factory that acquired new equipment on January 1, 20X8:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase price</td>
<td>Rs. 12,000</td>
</tr>
<tr>
<td>Delivery cost</td>
<td>Rs. 1,000</td>
</tr>
<tr>
<td>Estimated useful life</td>
<td>3 years</td>
</tr>
<tr>
<td>Estimated number of units:</td>
<td>30,000</td>
</tr>
<tr>
<td>In year 1</td>
<td>8,000</td>
</tr>
<tr>
<td>In year 2</td>
<td>5,000</td>
</tr>
<tr>
<td>In year 3</td>
<td>17,000</td>
</tr>
<tr>
<td>Salvage value</td>
<td>Rs. 4,000</td>
</tr>
</tbody>
</table>

Required:

a) Apply four depreciation methods below to determine depreciation expense for the equipment for three years:
   - straight-line method;
   - double-declining balance method;
   - units-of-production method;
   - sum-of-year-digits depreciation method
b) Prepare journal entries for the double-declining method, provided the company sold the equipment at the end of 20X0 for Rs. 3,000.

8) Johnson & Co. a building and construction firm, commenced trading on 1 January Year 6. During the three years to 31 December Year 8, the company bought and sold motor vehicles for use in the business as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Registration No</th>
<th>Cost (Rs.)</th>
<th>Date Of Disposal</th>
<th>Disposal Proceeds (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Feb Yr6</td>
<td>E762</td>
<td>12,000</td>
<td>12 Apr Yr 8</td>
<td>6,000</td>
</tr>
<tr>
<td>4 May Yr7</td>
<td>F134</td>
<td>14,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Mar Yr8</td>
<td>G915</td>
<td>16,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The firm provides for depreciation of its motor vehicles at the rate of 20% per annum of the straight line basis, with no residual value.

A full year’s depreciation is provided for motor vehicles bought before 1 July but no depreciation is provided in the year of disposal.

Required:

1) Prepared in the books of Johnson & Co for the period 1 January Year 6 to 31 December Year 8, balancing the accounts each year, the following:

   (a) Using the straight line basis for depreciation:
       (i) Motor Vehicles Account
       (ii) Provision for Depreciation Account
       (iii) Motor Vehicles Disposal Account

   (b) Using the reducing balance basis for depreciation at the rate of 25% per annum:
       (i) Provision for Depreciation Account
       (ii) Motor Vehicles Disposal Account

8) Differentiate between various methods of calculating depreciation

9) Is depreciation a source of revenue for the company? What are the reasons for charging depreciation?

10) R Limited bought a machinery for Rs. 30,000/- on April 1, 2017. One more machinery was purchased on October 1, 2017 costing Rs. 20,000/-. On July 1, 2018, a new machinery for Rs. 10,000/- was added to the existing machinery. On January 1, 2019 one third of the machinery which was installed on April 1, 2017 was sold for Rs. 3,000/-. Show the machinery account in the books of the company. The rate of depreciation is 10% on reducing balance method.

11) Voltas Limited bought a truck on January 1, 2010 for Rs. 60,000/- and a sum of Rs. 20,000/- was spent for various accessories, On July 1, 2011 another vehicle was purchased for Rs. 52,000/-. On July 1, 2012 the first truck was sold for Rs. 60,000/-. On the same day another truck was purchased for Rs. 50,000/-. On July 1, 2013 the second vehicle was sold
for Rs. 46,000/-. Rate of depreciation was 10% on the original cost annually on December 31. In 2012 the method of charging depreciation has changed to diminishing value method, the rate being 15% per annum. Prepare truck account for 2010, 2011, 2012 and 2013.

12) The book value of plant and machinery on January 1, 2014 was Rs. 2,00,000/-. New machinery for Rs. 10,000/- was purchased on October 1, 2014 and for Rs. 20,000/- on July 1, 2015. On April 1, 2016 a machinery whose book value had been Rs. 30,000/- on January 1, 2014 was sold for Rs. 16,000/-. Depreciation had been charged at 10% per annum since 2014 on straight line method. It was decided in 2016 that depreciation @ 20% per annum on diminishing balance method should be charged with retrospective effect since January 1, 2014. Show (i) Plant & Machinery account upto December 31, 2016 (ii) Plant & Machinery disposal account. Give detailed workings.

13) Machinery Account of Radha Company Limited showed debit balance of Rs. 32,400/- on January 1, 2014, depreciation being provided at 10%. On July 1, 2014 a part of the machinery purchased for Rs. 10,000/- on January 1, 2012 was sold for Rs. 7,000/- and on the same date a new machinery which cost Rs. 20,000/- was purchased. On December 31, 2014, the company decided to change the method of depreciation from WDV method to SLM with effect from January 1, 2012, depreciation remaining at 10% per annum.

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www.investopedia.com
www.wikipedia.com
valuation is carried out.