A business or concern holds fixed assets for regular use and not for re-sale. The capability of a fixed asset to render service cannot be unlimited. Except land, all other fixed assets have a limited useful life. The benefit of a fixed asset is received throughout its useful life. So its cost is the price paid for the 'Series of Services' to be received or enjoyed from it over a number of years and it should be spread over such years.

Long-term fixed assets are used in the process of earning revenue. Due to regular use such assets gradually lose their service potentials. Such losses are considered as expired costs which have to be matched against the periodic revenues. The latin word 'depretum' literally means 'reduction of value'. So depreciation means the reduction in value of assets which has to be considered for determining revenue. **R. S. Anthony and J. S. Reece** observed that "the cost of an asset that has a long but nevertheless limited life is systematically reduced over that life by the process called depreciation."

The cost of a fixed asset is a capital expenditure. Depreciation is allocated for every accounting period as a cost or an expense which is matched against the revenue of such period. Although it is a measure of the decrease in the value of assets put to use, it is actually a process of allocation. For this reason, **International Accounting Standard** (IAS–4) provides that "Depreciation is the allocation of the depreciable amount of an asset over its estimated useful life." In Accounting Research Bulletin No. 22, **AICPA** observed that "Depreciation for the year is the portion of the total charge under such a system that is allocated to the year. Although the allocation may properly take into account occurences during the year, it is not intended to be the measurement of the effect of all such occurrences."

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Causes of Depreciation

Its causes are :

A. Internal

(i) Wear and tear : Plant & Machinery, Furniture, Motor Vehicles etc. suffer from loss of utility due to vibration, chemical reaction, negligent handling, rusting etc.

(ii) Depletion (or exhaustion) : The utility or resources of wasting assets (like mines etc.) decrease with regular extractions.

B. External or Economic causes

(i) Obsolescence : Innovation of better substitutes, change in market demand, imposition of legal restrictions may result into discarding an asset.

(ii) Inadequacy : Changes in the scale of production or volume of activities may lead to discarding an asset.

C. Time element : With the passage of time some intangible fixed assets like lease, patents, copy-rights etc., lose their value or effectiveness, whether used or not. The word "amortization" is a better term to speak for the gradual fall in their values.

D. Abnormal occurences : An Accident, fire or natural calamity can demage the service potential of an asset partly or fully. As a result the effectiveness of the asset is affected and reduced.

Factors on which Depreciation Depends – Measurement Factors

1. **Historical (original) cost :** Which includes money spent for acquisition, installation, addition and improvement of a fixed asset. Cost of the asset, wages paid for installation, transportation costs, legal expenses for registration of lease agreements, etc. are included.
2. **Useful life of the asset :** It is the estimated period over which the utility of an asset will be enjoyed. It depends upon (a) legal or contractual provisions regarding lease, etc., (b) level of use of the asset, (c) degree of maintenance and (d) technological developments. Useful life is shorter than the physical life of an asset.
3. **Estimated residual value :** It is the value expected to be realised after complete commercial utilization of a fixed asset.

Other factors : The main reason behind charging depreciation is to spread the cost of a fixed asset over its estimated life. It may also be charged to raise funds for replacement of the used asset. Due to inflation the replacement cost will be higher for which index numbers may be used. In that case the replacement cost will also be a factor. Where an asset requires an uniform cost of repairs every year, such cost should also be considered for fixing up depreciation.

4. **Other Relevant Factors :** Some other relevant factors may be considered for deciding the amount to be charged as depreciation. These are—
   (a) Replacement cost that is the cost that would be incurred if the old asset has to be replaced by a new asset.
   (b) Provisions of the Companies Act, Income Tax Act regarding depreciation.
   (c) Costs of probable additions, alterations or improvements of the existing asset.

Objects of Charging Depreciation

Eric Kohler defined depreciation as "the lost usefulness, expired utility, the diminution in service yield." Its measurement and charging are necessary for cost recovery. It is treated as a part of the expired cost for an asset. For determination of revenue, that part or cost should be matched against revenue. The objects or necessities of charging depreciation are :

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1. **Correct calculation of cost of production :** Depreciation is an allocated cost of a fixed asset. It is to be calculated and charged correctly against the revenue of an accounting period. It must be correctly included within the cost of production.
2. **Correct calculation of profits :** Costs incurred for earning revenues must be charged properly for correct calculation of profits. The consumed cost of assets (depreciation) has to be provided for correct matching of revenues with expenses.
3. **Correct disclosure of fixed assets at reasonable value :** Unless depreciation is charged, the depreciable asset cannot be correctly valued and presented in the Balance Sheet. Depreciation is charged so that the Balance Sheet exhibits a true and fair view of the affairs of the business.
4. **Provision of replacement cost :** Depreciation is a non-cash expense. But net profit is calculated after charging it. Through annual depreciation cash resources are saved and accumulated to provide replacement cost at the end of the useful life of an asset.
5. **Maintenance of capital :** A significant portion of capital has to be invested for purchasing fixed assets. The values of such assets are gradually reduced due to their regular use and passage of time. Depreciation on the assets is treated as an expired cost and it is matched against revenue. It is charged against profits. If it is not charged the profits will remain inflated. This will cause capital erosion.
6. **Compliance with technical and legal requirements :** Depreciation has to be charged to comply with the relevant provisions of the Companies' Act and Income Tax Act. It may also be necessary due to technical innovations or requirements (like installation of LPG or CNG in motor vehicles having petrol or diesel engines).

Characteristics of Depreciation

The Characteristics of Depreciation are :

1. It is a **charge against profit.**
2. It indicates **diminution in service potential.**
3. It is an **estimated loss** of the value of an asset. It is not an **actual loss.**
4. It depends upon different **assumptions**, like effective life and residual value of an asset.
5. It is a process of allocation and not of valuation.
6. It arises mainly from an **internal cause** like wear and tear or depletion of an asset. But it is treated as any expense charged against profit like rent, salary, etc., which arise due to an **external transaction.**
7. Depreciation on any particular asset is **restricted** to the working life of the asset.
8. It is charged on **tangible fixed assets.** It is not charged on any current asset. For allocating the costs of intangible fixed assets like goodwill, etc, a certain amount of their total costs may be charged against periodic revenues. This is known as **amortization.** Depreciation includes amortization of intangible assets whose effective lives are pre-estimated. Intangible assets render benefits but they do not have any physical existence. Their 'economic values' are perceived to exist. 'Amortization' or 'Writing Off' such assets is made to account for the deterioration of their economic values. Under depreciation, 'Depletion' and 'obsolescence' are also covered. 'Depletion' means gradual exhaustion of physical resources due to extraction etc, as found in mines, quarries etc. 'Obsolescence' means a major deterioration in the utility of an asset due to (i) innovation of improved substitutes or techniques; (ii) drastic fall in the demand of a product arising through change in market conditions, tastes or fashions; and (iii) usefulness lost and inability arising to cope with increased scale of operation.

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Depreciation – Parameters of Different Views or Different Concepts of Depreciation

The exact nature of depreciation is viewed by different accountants from different stand-points. These are :

1. **A Process of Allocation :** The cost of an asset is allocated over the years of its useful life. **E. S. Hendriksen** observed depreciation as "a systematic and rational method of allocating costs to periods in which benefits are received." Allocated portion of a capital expenditure attributed to any accounting period falling within the working life of a fixed asset is considered as the periodic charge for depreciation. The periodic flow of the service potential of such asset is represented by the periodic charge. According to this concept, the useful working life and the residual value of fixed assets are considered as constant for determining periodic depreciation.
2. **A Decline in Service Potential :** With gradual use and effluxion of time, the capability of a fixed asset to render service is reduced. So, depreciation is the measure of the total reduction of service potential over the years of use of a fixed asset. As this concept believes that the consumption of service potentials of a fixed asset follow a decreasing trend, depreciations for different years do not become equal.
3. **A Source of Fund :** Depreciation is a non-cash expense but it is charged against profits, like rent, salaries etc. As it does not cause any outflow of cash in the period in which it is charged, some accountants prefer to believe that its equivalent amount is retained in cash. This helps to build up a fund which, in turn, helps to replace the old and useless asset by a new and useful asset.

   But this view is full of defects. Depreciation is a portion of the total out flow of cash already made for acquiring an asset. It is an internal arrangement that affects the periodic revenue and the value of a fixed asset of a business. It does not involve any other party. A fund presumes appropriation of an amount and its external application. Depreciation neither helps to create, nor to maintain any fund. It definitely affects periodic revenue and quantum of tax but it does not involve the creation or extinction of any fund.
4. **A Provision for Maintenance of Capital :** Some accountants think that depreciation helps to maintain Capital. They feel that depreciation is charged as a part of expired cost. So, by the time the fixed asset ceases to render any service, the initial capital that was invested to acquire it, is recovered fully. **The American Accounting Association (AAA)** felt that "depreciation must be based on current cost of restoring the service potential consumed during the period."

   For restoring 'service potential consumed' depreciation is needed. But cost of restoration is more related to the replacement cost, that is, the cost that will be required at the time of replacement than the historical cost that was originally incurred at the time of acquiring the asset. If depreciation is based on historical cost, the initial capital invested can be restored. But due to change of price level, replacement cost is bound to be more. So, real capital cannot be maintained. For this reason, **Sprouse and Moontiz** opined in the **Accounting Research Study publised by AICPA** that the current cost of restoring service potential should be based on current replacement cost.

Depreciation : Application of Accounting Standard

1. AS–6 'Depreciation Accounting' has been withdrawn.
2. AS–10 'Fixed Assets' has been revised.
3. At present the provisions of **Revised AS 10 '*Property, Plant and Equipment*'** have become applicable in India for governing the accounting of Fixed Assets and Depreciation thereon.
4. The provisions of **Ind AS-16** should be considered and applied side by side.

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5. **Ind AS 16** ***'Property, Plant and Equipment'*** governs and guides selection and change of method of depreciation.
6. It stipulates that any change in method of depreciation is to be considered as a ***change in accounting estimates*** *which should be treated as per* ***Ind-AS 8 'Accounting Policies, changes in Accounting Estimates and Error'.***

Methods of Charging Depreciation

There are different concepts about the nature of depreciation. Moreover, the nature of all fixed assets cannot be the same. As a result, different methods are found to exist for charging depreciation. A broad classification of the methods may be summarised as follows :

Methods of Depreciation

If depreciation is considered as an allocation of Cost / Decline in Service Potential

Time Base
1. Fixed Instalment method
2. Reducing Balance Method
3. Sum of years' Digit Method
4. Double Declining Balance Method

Use Base
1. Working Hours method
2. Mileage Method
3. Depletion unit Method
4. Service Hours Method
5. Units of Production Method

If depreciation is considered as a Provision for maintenance of Capital / Source of Fund
1. Sinking Fund Method
2. Annuity Method
3. Insurance Policy Method

If Depreciation is considered as a portion of recovery of market price
1. Revaluation Method

Methods of Charging Depreciation

[It is a theoritical discussion. Illustrations are given later]

Major Premise Time Base

Depreciation is a process of Allocation of Cost of a Fixed Asset over the years of its useful life. Periodic charge for Depreciation is the allocated portion of the capital expenditure for an asset attributed to an accounting period covered within its working life.

1. Fixed / Equal Instalment OR Straight Line Method

Features **:**

(i) A fixed portion of the cost of a fixed asset is allocated and charged as periodic depreciation.

(ii) Such depreciation becomes an equal amount in each period.

(iii) $$\text{Amount of Periodic Depreciation} = \frac{\text{Original Cost of acquiring an asset including costs up to its installation} - \text{Scrap or Residual Value}}{\text{No. of years of expected use}}$$

(iv) The rate of charging depreciation shows a fixed percentage which may be shown as

$$\frac{\text{Amount of Periodic Depreciation}}{\text{Total Amount Written off}} \times 100$$

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(v) This method is based on the assumptions that—

(a) Depreciation occurs due to passage or efflux of time. It does not depend on the actual use of an asset.

(b) The 'useful life' and 'scrap value' of an asset can be estimated properly.

(c) The asset is contributing equally to generate income every year.

(d) Cost of repairs and maintenance of the asset will not be too much and it will remain more or less the same in any accounting period.

Applicability **:**

(i) This method is suitable for an asset whose working life can be reasonably estimated; which will not need much repair works and which is not likely to be obsolete, for example Patents, Copyrights, Trade Marks, Leasehold Assets, etc.

Merits **:**

(i) The calculation of depreciation becomes very simple.

(ii) The book value of an asset can be fully written off.

Demerits **:**

(i) With gradual use, the usefulness of an asset is reduced. But the amount of depreciation remains uniform throughout its working life.

(ii) As an asset becomes older, its cost of repairs is likely to increase. So, the total charge for repairs and depreciation in the later years becomes much more than that of the earlier years. It affects the annual profits.

(iii) It does not consider the interest on the capital invested for the asset.

2. Reducing / Diminishing Balance Method OR Written Down Value Method

Features **:**

(i) Depreciation is calculated at a fixed percentage on the original cost in the first year. But in subsequent years it is calculated at the same percentage on the written down values gradually reducing during the expected working life of the asset.

(ii) The rate of allocation is constant (usually a fixed percentage) but the amount allocated for every year gradually decreases.

(iii) Under this method – Annual Depreciation = Fixed rate on written down value brought forward from previous year.

(iv) Rate of Depreciation for measuring depreciation may be represented as—

$$R = \left[1 - \sqrt[N]{\frac{S}{C}}\right] \times 100$$

where R = Percentage of Depreciation

N = Expected number of years of useful life

C = Cost of the Asset

and S = Scrap or Residual Value

(v) This method is based on the assumptions that—

(a) The usefulness or service potential of an asset gradually reduces with the passage of time.

(b) As an asset becomes older, its depreciation reduces but cost of repairs and maintenance increases.

Applicability **:** This method can be applied for an asset requiring more repairs in later years and whose working life cannot be reasonably estimated — for example, Plant & Machinery, Buildings, etc.

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Merits :

(i) The amount of anuual depreciation reduces with the reducing balances of the asset.

(ii) In later years, depreciation becomes lower when cost of repairs increases. Thus, the total charge for depreciation and repairs remains more or less uniform over years.

(iii) The Tax Authorities and other legal bodies approve this method.

(iv) An asset is never fully written off. So, identification of the service yield of any asset is possible at any stage.

Demerits :

(i) An asset cannot be fully written off when it becomes fully useless, some value of the asset has to be shown still.

(ii) It does not consider the interest on capital invested in the asset.

(iii) The rate of depreciation has to be very high if the written down value is to be brought down to its scrap value.

(iv) It is not effective where an asset has a very short life. The calculation of the rate of depreciation creates problems.

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Method used	Entries	Amount	Method used	Entries	Amount
Ordinary Method	**1. For Depreciation charged** Depreciation A/c ..... *Dr.* To Asset A/c	Periodic Depreciation	**Provision Method**	**1. For Depreciation charged** Depreciation A/c ..... *Dr.* To Provision for Deprn.	Periodic Depreciation
	2. For Selling an old asset Cash/Bank A/c ..... *Dr.* (Cash sale) Or, Party A/c ..... *Dr.* (Credit sale) Loss on Sale of Asset A/c .. *Dr.* To Asset A/c „ Profit on Sale of Asset A/c	Selling Price Selling Price If Loss on Sale W.D.V. If Profit on Sale		**2. For Selling an old asset** Cash/Bank A/c ..... *Dr.* (Cash sale) Or, Party A/c (Credit sale) ..... *Dr.* Loss on Sale of Asset A/c .... *Dr.* Provision for Dep. A/c ..... *Dr.* To Asset A/c „ Profit on Sale of Asset A/c	Selling Price Selling Price If Loss on Sale Accumulated Dep. on sold asset Original Cost If Profit on Sale
	3. If Sale of Asset is recorded through Asset Disposal A/c a. Asset Disposal A/c ..... *Dr.* To **Asset A/c** b. Bank/Cash A/c ..... *Dr.* or Party A/c ..... *Dr.* Loss on Sale of Asset A/c .. *Dr.* To Asset Disposal A/c „ Profit on Sale of Asset A/c	W.D.V. Selling Price Selling Price If loss on Sale W.D.V. If Profit on Sale		**3. If Sale of Asset is recorded through Asset Disposal A/c** a. Asset Disposal A/c ..... *Dr.* To Asset A/c b. Cash/Bank/Party A/c ..... *Dr.* Provision for Dep. A/c ..... *Dr.* Loss on Sale of Asset A/c *Dr.* To Asset Disposal A/c „ Profit on Sale of Asset A/c	Original Cost Selling Price Accumulated Dep. If loss on Sale Orginal Cost If Profit on Sale

Notes :

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Illustrations

Illustration 1.

Special Points : (a) Depreciation under straight line method, (b) Journal entries, Ledger accounts and effects on Balance Sheet.

Chandrasena purchased a machine for ₹ 1,02,000 and spent ₹ 8,000 for its installation on 1.1.1994. The working life of the machine was estimated as 10 years and its scrap value at the end of that time as ₹ 10,000. It was decided to write off depreciation by equal annual instalments.

You are required to— (1) Calculate the annual depreciation; (2) Give the necessary journal entries for the first two years and (3) Show the necessary accounts and the Balance Sheets for the said periods (assume accounting periods end on 31st December).

What would be the difference if the entries are to be made using the Provision for Depreciation Account.

[C.U. B.Com. — Adapted]

Solution :

$$\text{Annual Depreciation} = \frac{\text{Original Cost} + \text{Installation Cost} - \text{Scrap Value}}{\text{No. of years of expected use}}$$

$$= \frac{₹1,02,000 + ₹8,000 - ₹10,000}{10} = ₹10,000$$

A. Ordinary method.

Books of Chandrasena

Journal Entries

Date	Particular	L.F.	Dr. Amount ₹	Cr. Amount ₹
1.1.94	Machinery A/c ..... Dr. To Bank A/c [Machinery purchased]		1,02,000	1,02,000
1.1.94	Machinery A/c ..... Dr. To Bank A/c [Installation cost paid for the machine]		8,000	8,000
31.12.94	Depreciation A/c ..... Dr. To Machinery A/c [Depreciation charged on machinery]		10,000	10,000
31.12.94	Profit & Loss A/c ..... Dr. To Depreciation A/c [Depreciaton transferred to Profit & Loss Account]		10,000	10,000
31.12.95	Depreciation A/c ..... Dr. To Machinery A/c [Depreciation charged on machinery]		10,000	10,000
31.12.95	Profit & Loss A/c ..... Dr. To Depreciation A/c [Depreciaton transferred to Profit & Loss Account]		10,000	10,000

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Machinery Account

Dr. Cr.

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
1.1.94	To Bank A/c — Cost	1,02,000	31.12.94	By Depreciation A/c	10,000
	" Bank A/c — Installation Cost	8,000		" Balance c/d	1,00,000
		1,10,000			**1,10,000**
1.1.95	To Balance b/d	1,00,000	31.12.95	By Depreciation A/c	10,000
				" Balance c/d	90,000
		1,00,000			**1,00,000**
1.1.96	To Balance b/d	90,000			

Depreciation Account

Dr. Cr.

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
31.12.94	To Machinery A/c	10,000	31.12.94	By Profit & Loss A/c	10,000
31.12.95	To Machinery A/c	10,000	31.12.95	By Profit & Loss A/c	10,000

Balance Sheet as on 31.12.1994 (includes)

Liabilities	Amount ₹	Assets	Amount ₹
		Machinery	1,10,000
		Less : Depreciation	10,000
			1,00,000

Balance Sheet as on 31.12.1995 (includes)

Liabilities	Amount ₹	Assets	Amount ₹
		Machinery	1,00,000
		Less : Depreciation	10,000
			90,000

B. Provision for Depreciation Account used

Books of Chandrasena

Journal Entries

Date	Particulars	L.F.	Dr. Amount ₹	Cr. Amount ₹
1.1.94	Machinery A/c ..... Dr.		1,02,000	
	To Bank A/c			1,02,000
	[Machinery purchased]			
1.1.94	Machinery A/c ..... Dr.		8,000	
	To Bank A/c			8,000
	[Installation cost paid for the machine]			
31.12.94	Depreciation A/c ..... Dr.		10,000	
	To Provision for Depreciation A/c			10,000
	[Annual Depreciation provided on Machinery]			
31.12.94	Profit & Loss A/c ..... Dr.		10,000	
	To Depreciation A/c			10,000
	[The Depreciation transferred to Profit & Loss Account]			

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31.12.95	Depreciation A/c ..... Dr. To Provision for Depreciation A/c [Annual Depreciation provided on Machinery]		10,000	10,000
31.12.95	Profit & Loss A/c ..... Dr. To Depreciation A/c [The Depreciaton transferred to Profit & Loss Account]		10,000	10,000

Dr. ***Machinery Account*** *Cr.*

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
1.1.94	To Bank A/c — Cost	1,02,000	31.12.94	By Balance c/d	1,10,000
	To Bank A/c — Installation Cost	8,000			
		1,10,000			**1,10,000**
1.1.95	To Balance b/d	1,10,000	31.12.95	By Balance c/d	1,10,000
1.1.96	To Balance b/d	1,10,000			

Dr. ***Depreciation Account*** *Cr.*

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
31.12.94	To Provision for Depreciation A/c	10,000	31.12.94	By Profit & Loss A/c	10,000
31.12.95	To Provision for Depreciation A/c	10,000	31.12.95	By Profit & Loss A/c	10,000

Dr. ***Provision for Depreciation Account*** *Cr.*

Date	Particulars	Amount ₹	Date	Particulars	Amount ₹
31.12.94	To Balance c/d	10,000	31.12.94	By Depreciation A/c	10,000
31.12.95	To Balance c/d	20,000	1.1.95	By Balance b/d	10,000
			31.12.95	By Depreciation A/c	10,000
		30,000			**30,000**
			1.1.96	By Balance b/d	20,000

Balance Sheet as on 31.12.1994 (includes)

Liabilities	Amount ₹	Assets	Amount ₹
		Machinery at cost	1,10,000
		Less : Provision for Depreciation (or accumulated depreciation)	10,000
			1,00,000

Balance Sheet as on 31.12.1995 (includes)

Liabilities	Amount ₹	Assets	Amount ₹
		Machinery at cost	1,10,000
		Less : Provision for Depreciation	20,000
			90,000

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