China glass, cutlery & linen	600		
Billiard Table	2,070		
Fixtures and Fittings	870		
Furniture	4,140		
Club Premises	30,000		
	1,53,840		1,53,840

On March 31, 1988 stock of bar and dining room consisted of Rs. 900 and Rs. 60 respectively. Provide depreciation Rs. 60 on fixtures and fittings, Rs. 390 on billiard table and Rs. 560 on furniture.

(Answer : Excess of income over **expenditure—Rs.** 2,950 : Total of Balance Sheet Rs. 51,700)

5 Dr. Iodine commenced practice as an eye-specialist investing Rs. 25,000 in equipment on January 1,1987. The **Receipts and** Payments Account for the year was as follows:

Receipts and Payments Account

Receipts	Amount	Payments	Amount
	Rs.		**Rs.**
To Fees	50,000	By Rent	3,000
To Miscellaneous Receipts	100	By Salaries to Assistants	7,500
To Equipment **Sold**	2.000	By Journals	1,000
		By Library Books	3,000
		By Equiprnents Purchased	4,000
		By Drawings	12,000
		By Balance	
		at bank	21,500
		in hand	100
	52,100		52,100

Rs. 1500 of the fees was still outstanding. Equipment was sold and purchased on October 1,1987; the cost of the equipment sold being Rs. 3,000. Depreciation on equipment is **20%** and on Library Books 5%. Salaries to assistants outstanding Rs. 1,000. Prepare the Receipts & Expenditure Account and the Balance Sheet relating to 1987.

(Answer : Surplus Rs. 31,850; Total of **Balance** Sheet **Rs.** 45,850).

Note: These questions will help you to understand the unit better. **Try** to write answers for them. But do not submit your answers to the **University.** *These* are for your practice only.

UNIT 20 DEPRECIATION – I

Structure

20.0 OBJECTIVES

After going through this unit you should be able to :

- define depreciation
- distinguish depreciation from other related concepts
- state the causes of depreciation
- describe the objectives of providing depreciation
- state the factors influencing the amount of depreciation
- explain the methods of recording depreciation
- list various methods of providing depreciation
- prepare accounts under fixed instalment and diminishing balance methods of providing depreciation.

20.1 INTRODUCTION

While preparing final accounts you have to provide for depreciation on all fixed assets so as to work out the correct amount of profit or loss for the accounting period. Adjustments usually contain an item asking you to charge depreciation on various fixed assets at some given rate and you know how to show it in final accounts. In this unit we shall have a detailed discussion on depreciation and study the basic factors influencing the amount of depreciation and various methods of providing and accounting for the same.

20.2 WHAT IS DEPRECIATION?

You are already familiar with the distinction between revenue expenditure and capital expenditure. You are aware that when the benefit of an expenditure is available beyond the accounting year (for ohe or more years) such an expenditure is treated as capital expenditure and it often results in acquisition of an asset. Since many accounting years are likely to receive benefits on account of the use-of such an asset, the cost of investment must necessarily be allocated over the period of its useful life and charged to the Profit and Loss Account. **Allocation of the appropriate**

amount to each period is called depreciation which represents the expired portion of the cost of an asset.

It would be useful to discuss different definitions given by various authorities in the subject for a proper appreciation of the meaning of depreciation.

Pickles defined depreciation as "the permanent and continuous diminution in the quality, quantity or value of an asset."

According to Spicer and Pegler, "Depreciation may be defined as a measure of the exhaustion of the effective life of an asset from any cause during a given period."

These definitions refer to certain basic aspects like permanent and continuous diminution, exhaustion of effective life but they are not comprehensive. Let us see some more definitions.

According to ICMA (Institute of Cost and Management Accounts, London) terminology, "Depreciation is the diminution in intrinsic value of the asset due to use and/or lapse of time."

According to Walter B. Meigs and others, "The concept of depreciation is closely linked to the concept of business income. Since part of the service potential of the depreciable asset is exhausted in the revenue getting process each period, the cost of these services must be deducted from revenue in measuring periodic income; the expired cost must be recovered before a business is considered as well off as at the beginning of the period. Depreciation is a measure of this cost."

According to the Institute of Chartered Accountants in Austria, "Depreciation represents that part of the cost of a fixed asset to its owner which is not recoverable when the asset is finally put out of use by him. Provision against this loss of capital is an integral cost of conducting the business during the effective commercial life of the assets and is not dependent upon the amount of profit cleared."

From the above definitions it is clear that depreciation refers to that part of the cost of fixed asset which has expired on account of its usage and or the passage of time. It is thus the 'lost usefulness', 'expired utility', or 'reduction in the intrinsic value' of a fixed asset.

Depreciation is charged on almost all fixed assets, possible exceptions being land, antiques, etc. Usually the value of land and antiques appreciates over a period of time, because they do not have finite economic life as in the case of machinery or furniture.

28.3 DEPRECIATION AND OTHER RELATED CONCEPTS

Sometimes the terms depletion, amortisation etc., are used interchangeably with depreciation. These terms in fact are used in a different context. Let us understand the distinction between depreciation and such related concepts.

Depreciation and Depletion : The term 'depletion' is used in respect of the extraction of natural resources from wasting assets such as quarries, mines, etc. and refers to the reduction in the available quantity of the material. As a matter of fact, depletion' is regarded as a method of computing the depreciation on wasting assets. Thus, it has a limited application. Depreciation, on the other hand, is a wider term and refers to a reduction in the value of all kinds of fixed assets arising from their wear and tear.

Depreciation and Amortisation : The terms 'amortisation' refers to writing off the proportionate value of the intangible assets such as copyrights, patents, goodwill, etc., while depreciation refers to the writing off the expired cost of the tangible assets like machinery, furniture, building etc.

Depreciation and Obsolescence : Obsolescence refers to the decrease in usefulness arising on account of the external factors like change in technology, new inventions, change of style, etc. Thus, it is caused mainly on account of the asset becoming out of date, old fashioned. Depreciation on the other hand, is a functional loss generally

arising on account of wear and tear. Obsolescence, in fact, is regarded as one of the causes of depreciation.

Depreciation and Fluctuation : Fluctuation refers to an increase or decrease in the market price of an asset. Such a change is usually temporary. Depreciation differs from fluctuation in the following respects.

i) Depreciation is concerned with book value of assct while fluctuation is related to the market value.

ii) Depreciation refers only to the decrease while fluctuation refers to either increase or decrease.

iii) Depreciation reflects a permanent decrease while fluctuation is only a temporary phenomenon.

20.4 CAUSES OF DEPRECIATION

The causes of depreciation can be stated as follows:

1 **Wear and Tear** : Wearing out of the asset on account of its constant use is called wear and tear. This causes a definite reduction in the value of the asset and is regarded as the major source of depreciation.

2 **Lapse of Time** : Normally, the passage of time also causes some reduction in the value of fixed assets because as they become old their value stands reduced. That is why the depreciation is usually charged on time basis. In case of certain assets like least., patents, etc., the value decreases with **passage** of time as they generally have a fixed number of years of legal life. For example, a building is taken on lease for a period of 10 years costing Rs. 1,00,000. The yearly depreciation of lease will amount to Rs. 10,000 (1/10 of Rs. 1,00,000) and charged as such to the Profit and Loss Account every year.

3 **Obsolescence** : The acquisition of an improved *model* may render the existing machine obsolete. As the new machine performs the same operation more quickly and/or more economically existing machine is said to have become out of date or obsolete. This causes a drastic reduction in the value of existing machinery and the amount of depreciation is bound to be **heavy.**

4 **Depletion** : Some assets are of a wasting character. For example mines, quarries, oil wells etc. Due to continuous extraction of materials the natural resources get depleted. Depreciation, in case of such assets is often computed on the basis of actual **depletion.** For example, a coal mime has the coal deposits of 200 million tons. In the first year we extract 10 m. tons of coal. The depreciation in the first five years shall amount to 10/200 of the cost of mine.

On She basis of the causes mentioned above, it can be said that depreciation is a permanent and continuous reduction in the value of an **assct due to wear and tear, passage of time, obsolescence, depletion or any other cause.**

20.5 OBJECTIVES OF PROVIDING DEPRECIATION

You know depreciation is treated as a loss and is chargeable to the Profit and Loss Account every year. The justification for charging depreciation can be explained as follows :

1 **Ascertaining the true profits :** Depreciation represents **the expired** cost **of** a fixed assct caused by its usage in business. This cost is a part of the total expenses incurred in earning the revenue during an accounting period and must be taken into account for arriving at the correct amount of profit or loss for the period. If depreciation is not charged, the expenses and losses will be understated and the Profit and Loss Account will show higher profits making the concern pay higher taxes.

2 **Ascertaining the true cost of production :** Depreciation on machinery and other fixed assets in the factory is an important component of the cost of production specially when the unit is not labour intensive. So if no provision is made for depreciation, the cost calculations will be incorrect.

3 **Presentation of true** Financial **position** : The value of fixed assets reduces from year to year on account of their usage and passing of time. They must be shown in the Balance Sheet at their reduced values otherwise it will not reflect the true financial position of the business. Hence depreciation must be taken into account. It will enable the concern to show fixed assets at their proper values in the Balance Sheet.

4 **Funds for replacement of** assets : Charging depreciation reduces the profits available for distribution. It enables-the concern to retain a part of its profit and thus accumulate funds for the replacement of the assets as and when necessary.

Cheek Your Progress A

1 What is depreciation?

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2 How is depreciation different from amortisation?

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3 State whether the following statements are True or False.

i) Depreciation is charged also on current assets. .....
ii) Profits will be overstated if depreciation is not charged. .....
iii) Expenses will-be understated if depreciation is not charged .....
iv) If adequate maintenance expenditure is incurred, depreciation need not be charged. .....
v) Depreciation is charged to reduce the value of asset to its market value, ...
vi). Depreciation is charged only on the original purchase price of the asset. .....
vii) When market value of an asset is higher than book value, depreciation is not charged. .....
viii) The main cause of depreciation is wear and tear caused by its usage. .....

20.6 FACTORS INFLUENCING DEPRECIATION

The amount of depreciation to be charged to the Profit and Loss Account in respect of a particular fixed asset is affected by following factors :

1 **Cost of the asset :** Cost of the asset should include purchase price and all other costs incurred to bring the asset to usable condition like transportation costs, erection charges, etc. It is to be noted that financial charges; such as interest on loan taken for the-purchase of the asset is not to be included in the original cost of an asset.

2 **Estimated working life of the asset :** The useful or economic life of the asset can be stated in terms of time i.e., years, months, hours a r in terms of quantity, i.e., number of units of output or any other operating measure such as kilometres in the case of lorries, motor vans, etc.

3 **Estimated scrap** value : Scrap Value (also called salvage value, residual value) refers to the estimated amount expected to be realised when the asset is sold at the end of its useful life. While the original cost of an asset can be correctly determined, useful life and salvage value can only be estimated, based on certain assumptions.

The total amounts of depreciation to be written off during the life time of an asset is calculated as follows :

	Rs.
Total Cost of Asset	...
Less Estimated Scrap Value	...
Total amount of Depreciation to be written off during its useful life	...

For example, a machine was bought for Rs. 1,00,000 and a sum of Rs. 24,000 was spent towards its transportation and erection charges. It was estimated that the machine has a useful life of 10 years and that the residual value expected to realise at the end of its useful life is Rs. 14,000. The total amount of depreciation to be written off during the economic life of an,asset can be calculated as shown below :

	Rs.
Original cost of the asset	1,00,000
Add Transportation and erection charges	24,000
	1,24,000
Less Estimated residual value	14,000
Total amount of depreciation to be written off during its useful life	1,10,000

After determining the total amount of depreciation to be written off during the life time of an asset the next step is to decide the amount of depreciation to be charged every year. In the above situation the annual amount of depreciation to be written off may be considered as 1/10 of the total amount of depreciation because its estimated life is 10 years.

However, there are various methods of calculating the'amount of depreciation to be charged from year to year. There are discussed in Section 20.8 of this unit.

20.7 METHODS OF RECORDING DEPRECIATION.

'There are essentially two methods of recording depreciation in the books of account: (1) when Provision for Depreciation Account is maintaincd. and (2) when Provision for Depreciation Account is not maintained. Under the first method, the amount of depreciation is credited to the 'Provision for Depreciation Account' every year and the concerned asset account continues to appear at its original cost. Of course, while preparing the Balance Sheet, the accumulated balance of the Provision for Depreciation Account is shown by way of deduction from the cost of the asset. Under the second method, no Provision for Depreciation Account is opened. The amount of depreciation is directly credited to the concerned asset account every Year. The asset account would thus appear in books at the depreciated value (written down value). Of course, it will be shown in the Balance Sheet giving the details of the opening balance, purchase and sale of the asset, and the depreciation provided during the year.

The following are the journal entries passed for the related transactions under the two methods.

1 When Provision for Depreciation Account is maintained

a) For charging depreciation :

Depreciation Account Dr
To Provision for Depreciation Account
(Being depreciation provided)

b) For transferring depreciation to Profit and Loss Account :

Profit and Loss Account Dr
To Depreciation Account
(Being transfer of depreciation)

c) When the asset is sold :

i) Bank Account Dr.
To Asset Account
(Being the sale proceeds)

ii) Provision for Depreciation Account Dr.
To Asset Account
(Being transfer of provisidn for depreciation on the asset sold)

iii) Asset Account Dr.
To Profit and Loss Account
(Being transfer of profit on sale of the asset)

or

Profit and Loss Account Dr.
To Asset Account
(Being transfer of loss on sale of the asset)

2 When Provision for Depreciation Account is not maintained

a) For charging depreciation :

Depreciation Account Dr.
To Asset Account
(Being depreciation provided)

b) For transferring depreciation to Profit and Loss Account

Profit and Loss Account Dr.
To Depreciation Account
(Being transfer of depreciation)

c) When the asset is sold :

i) Bank Account Dr.
To Asset Account
(Being sale proceeds)

ii) Asset Account Dr.
To Profit and Loss Account
(Being transfer of profit on sale of asset)

or

Profit and Loss Account Dr.
To Asset Account
(Being transfer of loss on sale of the asset)

A firm can adopt any method for recording depreciation, But in practice, most of the firms follow the second method under,which provision for Depreciation Account is not opened and all entries are made directly in the concerned asset account. Hence, we shall follow this method for the treatment of depreciation.

20.8 METHODS FOR PROVIDING DEPRECIATION

As stated earlier there are various methods of calculating the amount of depreciation to be charged from year to year. Different methods are adopted to suit the nature of each asset. It is also possible that different concerns may follow different methods for depreciating the same asset, The following are the principal methods for providing depreciation.

1 Fixed Instalment Method
2 Diminishing Balance Method
3 Annuity Method .
4 Depreciation Fund Method
5 Insurance Policy Method
6 Revaluation Method
7 Depletion Method
8 Machine Hour Rate Method

Of the above eight methods used for providing depreciation, the first two viz., Fixed Instalment Method and Diminishing Balance Method are the most commonly used methods. These are taken up in this unit and the remaining method shall be discussed in Unit 21.

20.8.1 Fixed Instalment Method

This method is also called 'equal instalment method' or 'straight line method'. Under this method, a fixed and equal amount is charged as depreciation every year during the life time of an asset. When this amount of depreciation is presented on a graph paper it would show a straight line parallel to the X-axis, and hence the alternative name 'straight line method'. This method writes off a fixed percentage of the original cost of the asset every year so that the asset is reduced to zero or its salvage value at the end of its working life. The annual amount ofdepreciation to be charged under this method can be calculated with the help of the following formula :

$$\text{Annual Depreciation} = \frac{\text{Original Cost} - \text{Scrap Value}}{\text{Life of the Asset in number of years}}$$

$$\text{or } D = \frac{C - S}{N}$$

Look at lllustration 1 and see how the amount of annual depreciation has been calculated and the concerned asset account prepared from year to year.

Illustration 1

Ravikiran & Sons purchased machinery on January 1,1983 for Rs. 22,000 and spent Rs. 3,000 on its erection. The asset is expected to last for four years after which its break up value is estimated to Rs. 5,000, Find out the amount of depreciation to be charged every year and show how the Machinery Account would appear for four years assuming that the machine is sold for Rs. 1,000 at the end. Also show how the balance of Machinery Account would appear in the Balance Sheet.

Solution :

The annual depreciation is calculated as follows :

$$D = \frac{C - S}{N}$$

$$= \frac{(22,000 + 3,000) - 5,000}{4}$$

$$= \frac{20,000}{4}$$

= Rs. 5,000

Machinery' Account

Dr.					Cr.
1983		Rs.	1983		Rs.
Jan. 1	To Bank A/c	22,000	Dec. 31	By Depreciation A/c	5,000
Jan. 1	To Cash A/c (erection charges)	3,000	" 31	By Balance c/d	20,000
		25,000			25,000
1984			1984		
Jan. 1	To Balance bld	20,000	Dec. 31	By Depreciation A/c	5,000
			" 31	By Balance c/d	15,000
		20,000			20,000
1985			1985		
Jan. 1	To Balance bld	15,000	Dec. 31	By Depreciation A/c	5,000
			" 31	By Balance cld	10,000
		15,000			15,000
1986			1986		
Jan. 1	To Balance b/d	10,000	Dec. 31	By Depreciation A/c	5.000
			" 31	By Bank A/c	1,000
			" 31	By Profit and Loss A/c (Loss on sale)	4,000
		10,000			10,000

Bnlance Sheet as on December 31, 1983

		Rs.
Machinery	22,000	
Add : Erection charges	3,000	
	25,000	
Less : Depreciation	5,000	
		20,000

Bnlance Sheet as on December 31,1984

Machinery	20,000	
Less : Depreciation	5,000	
		15,000

Bnlance Sheet as on December 31, 1985

		Rs.
Machinery	15,000	
Less : Depreciation	5,000	
		10,000

Balance Sheet as on December 31, 1986

		Rs.
Machinery	10,000	
Less : Depreciation	5,000	
	5,000	
Less : Sale proceeds	1,000	
	4,000	
Less : Loss written off	4,000	

In practice, the purchase and sale of an asset, is a continuous exercise. Hence, you should know how the calculation of depreciation will be made in such situations and the transactions recorded in the concerned asset account. Look at Illustration 2 and study how the asset account appears in such situations.

Illustration 2

Arivind & Co. purchased a plant worth Rs. 2,00,000 on January 1, 1987, On June 30, 6987 an additional plant was bought for Rs. 50,000, On December 31,1988 a part of the plant bought on January 6, 1987 costing Rs. 4,000 was sold for Rs. 3,000,

Prepare Plant and Machinery Account for years 1987 and 1988 providing depreciations at 10% per annum on fixed instalmcnt method. The accounts are closed on December 31, every year.

Solution :

Plant and Machinery Account

Dr. **Cr.**

1987		Rs.	1987	Rs.	
Jan. 1	*To Bank A/c*	),000	Dec. 31	By Depreciation A/c	*22,500*
June 30	*To Bank A/c*	),000	" 31	By Balance c/d	2,27,500
		0.000			2,50,000
1988			1988		
Jan. 1	To Balance b/d	2,27,500	Dec. 31	By Bank A/c	3,000
			" 31	By Depreciation A/c	25,000
			" 31	By P & L A/c (Loss on sale)	200
			" 31	By Balance c/d	1,99,300
		2,27,500			2,27,500

Working Notes :

1 **Depreciation for 1987**

	Rs.
On Rs. 2,00,000 for one year (101100 of 2,00,000)	20,000
On Rs. 50,000 for six months (101100 x 50,000 x 6/12)	2,500
	22,500

2 **Depreciation for 1988**

On Rs. 2,50,000 for one year (101100 of 2,50,000)	25,000

3 **Loss on** Sale of **Plant**

Depreciated value of plant sold as an December 31, 1988 (Rs. 4,000 – Rs. 800)	3,200
Less : Sale Proceeds	3,000
Loss on Sale	200

Advantages

1 It is easily understandable and is simple to apply.
2 Amount of depreciation does not vary from year to year,
3 Under this method the book value of asset is reduced either to zero or scrap value as the case may be,

4 In this method depreciation charge spreads equally over 'the entire period of its anticipated working life. Therefore, it is considered particularly suitable for those assets which get depreciated more on account of lapse of time such as lease-holds, patents etc.,

Disadvantages

1 It does not reflect the correct charge on account of depreciation when the effective utilisation of the asset varies from year to year.
2 It does not recognise the reality that as an asset becomes older, the amount spent for repairs and renewals goes on increasing. It is common knowledge that when the asset is brand new, repair bill would be either nil or very small. But, as the machine is progressively subjected to wear and tear, the repairs bill would increase considerably. Thus the combined charge on account of depreciation and repairs will not be uniform throughout the life of the asset. The increasing repairs bill unjustifiably burden the later years of asset life with heavier combined charges.
3 It does not take into account the loss of interest on the money invested in the asset. Certain other methods (annuity method) while calculating depreciation also take interest aspect into account.

20.8.2 Diminishing Balance Method

Under this method, though the rate of depreciation is fixed, it is calculated on the written down value of the asset. Consequently the amount of depreciation to be charged goes on reducing from year to year. For example, a machine was purchased on January 1,1986 for Rs. 10,000. It is to be depreciated at 15% per annum under the diminishing balance-method. In this case, the depreciation for 1986 would be Rs. 1,500 (15% of 10,000), for 1987 it would be Rs. 1,275 (15% of 8,500), and for 1988 it would work out as Rs. 1,084 (15% of 7,225). Thus you will notice that the annual depreciation goes on reducing. Hence, it is also known as 'reducing instalment method'. This method is considered better than the fixed instalment method because with reducing instalrnents of depreciation the combined effect of repairs and depreciation will be more or less uniform throughout the life of the asset.

Look at Illustration 3 and see'how the amount of depreciation is computed every year and recorded in the concerned asset account.

Illustration 3

Kishore Ltd. purchased a tractor costing Rs. 1,00,000 on January 1, 1982. The rate of depreciation to be charged was fixed at 20% per annum. Write up Tractor Account for five years ending December 31, 1986, under diminishing balance method.

Tractor Account

Dr.					Cr.
1982		Rs.	1982		Rs.
Jan. 1	To Bank A/c	1,00,000	Dec. 31	By Depreciation A/c	20,000
			" 31	By Balance cld	80,000
		1,00,000			1,00,000
1983			1983		
Jan. 1	To Balance b/d	80,000	Dec. 31	By Depreciation A/c	16,000
			" 31	By Balance c/d	64,000
		80,000			80,000
1984			1984		
Jan. 1	To Balance bld	64,000	Dec. 31	By Depreciation A/c	12,800
			" 31	By Balance c/d	51,200
		64,000			64,000

1985 Jan. 1	To Balance bld	51,200	1985 Dec. 31	By Depreciation A/c	10,240
			" 31	By Balance cld	40,960
		51,200			51,200
1986 Jan. 1	To Balance bld	40,960	1986 Dec. 31	By Depreciation A/c	8,192
			" 31	By Balance c/d	32,768
		40,960			40,960

Now look at Illustration 4. It deal with the situation when additions and disposals are made during the course of the year and a part of the asset is replaced.

Illustration 4

Harinath purchased on January 1, 1984, a plant for Rs. 50,000. On July 1, 1984 an additional plant worth Rs. 20,000 was purchased and on July 1, 1985, the plant purchased on January 1, 1984 having become obsolete is sold off for Rs. 20,000. On July 1, 1986, a new plant was purchased for Rs. 60,000 and the plant purchased on July 1, 1984 was sold for Rs. 15,000. Depreciation is to be provided at 10% p.a. on the written down value every year. Show the Plant Account.

Plant Account

Dr. Cr.

1984			1984		Rs.
Jan. 1	To Bank A/c	50,000	Dec. 31	By Depreciation A/c	6,000
July 1	To Bank A/c	20,000	31	By Balance cld	64,000
		70,000			70,000
1985 Jan. 1	To Balance bld	64,000	1985 July 1	By Bank A/c	20,000
			Dec. 31	By P & L A/c (loss on sale)	22,750
			" 31	By Depreciation A/c	4,150
			" 31	By Balance cld	17,100
		64,000			64,000
1986 Jan. 1	To Balance b/d	17,100	1986 July 1	By Bank A/c	15,000
July 1	To Bank A/c	60,000	Dec. 31	By P & L A/c (loss on sale)	1,245
			" 31	By Depreciation A/c	3,855
			" 31	By Balance c/d	57,000
		77,100			77,100

Working Note8 :

1 Depreciation tor 1984

	Rs.
10% on Rs. 50,000 for one year	5,000
10% on Rs. 20,000 for six months	1,000
	6,000

2 Depreciation for 1985

10% on Rs. 45,000 for six months (upto June 30, 1985)	2,250

10% on Rs. 19,000 for one year	1,900
	4,150

3 Loss on plant sold on July 1, 1985

Depreciated value as on 1985	
50,000 – 5,000 – 2,250	42,750
Less : Sale proceeds	20,000
Loss on sale	22,750

4 Depreciation for 1986

10% on Rs. 37,100 for six months	855
10% on Rs. 60,000 for six months	3,000
	3,855

5 Loss on plant sold on July 1,1986

Depreciated value as on 1.7.1986	
20,000 – 1,000 – 1,900 – 855	16,245
Less : Sale proceeds	15,000
Loss on sale	1,245

Advantages

This method is also simple to understand and easy to follow, though calculation of depreciation is slightly complicated. It ensures a fairly even charge to Profit and Loss Account on account of both depreciation and repairs. This is possible because the amount of depreciation decreases year after year while the charge for repairs goes on increasing year after year.

Disadvantages

One of the important limitations of this method is that the value of an asset cannot be brought down to zero. Hence, even after the asset is put out of use it may have, certain book value. This method also does not take into account the loss of interest on the money invested in the asset. The determination of a suitable rate of depreciation is also difficult under this method. The formula generally used for this purpose is as follow :

$$\text{Rate of Depreciation} = 1 - \sqrt[n]{\frac{\text{Scrap Value}}{\text{Original Cost}}}$$

This looks quite complicated as compared to the fixed instalment method.
This method is considered suitable for assets like plant and machinery where the repairs are insignificant in earlier years but increase considerably in later years. It is popularly known as 'written down value method' because the depreciation is computed on the written down value every year. There are however, other methods of computing depreciation under the diminishing balance method such as 'sum of year digits method' and 'double declining balance method'. These are also called accelerated depreciation method, because under all these methods the amount of depreciation charged in earlier years is more compared to that of the later years.

20.8.3 Difference between Fixed Instalment Method and Diminishing Balance Method

The difference between the fixed instalment method and the diminishing balance method can be summarised as follows :

	Fixed Instalment Method	Diminishing Balance Method
1	Depreciation is calculated on the original cost.	Depreciation is calculated on the written down value.
2	Depreciation instalment is the same every year.	Depreciation instalment goes on reducing every year.
3	The balance in the asset account will reduce to zero at the expiry of the working life of the asset.	The balance in the asset account will never reduce to zero.
4	The combined cost on account of depreciation and repairs is low during the initial years and high during later years.	The combined cost on account of depreciation and repairs is more or less equal throughout.
5	Calculation of the rate of depreciation is easy.	Calculation of the rate of depreciation is difficult.
6	It is suitable for assets which get depreciated more on account of the expiry of time.	It is suitable for assets which require heavy repairs in later years of their working life.

Check Your Progress B

1 List the factors influencing the amount of depreciation.

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2 Name various methods of computing depreciation.

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3 State whether the following statements are True or False,

i) Depreciation is a temporary change in the value of an asset. .....

ii) While calculating depreciation, the scrap value (salvage value) must be taken into account. .....

iii) 'Under fixed instalmcnt method of providing depreciation the combined effect of repairs and depreciation is uniform over the year. .....

iv) Under the diminishing balance method it would be possible to reduce the value of an asset to zero. .....

v) The interest involved in the investment on assets purchased is ignored under both the fixed instalment and the diminishing balance methods. .....

vi) When a Provision for Depreciation Account is maintained, the asset is shown at the original cost in the Balance Sheet. .....

20.8.4 Change of Method

Sometimes a firm may decide to change the method of depreciation it had adopted i.e., it may change the method of depreciation from fixed instalment method to reducing instalment method or vice versa. If it decides to implement the change with prospective effect, there is no problem because no adjustment is necessary in respect of depreciation charged in earlier years. All that is necessary is to charge depreciation from that year onwards according to the new method decided, However, when it is decided to change the method with retrospective effect i.e., with effect from a prior date (usually from the date of acquisition of an asset) it would be necessary to adjust the depreciation charged till date. Suppase a firm was depreciating its machinery under the fixed instalment method during the past three years. It has now decided to change the method to written down value method with retrospective effect. In such a case it would be necessary to take the following steps :

1 Calculate the amount of depreciation already charged till the date of change according to old method.

2 Calculate the amount of depreciation that would have been charged under the new method now proposed to be adopted.
3 If the amount of depreciation under the new method is more than what was charged under the old method, such difference should be credited to the asset account in current year and debited to the Profit and Loss Account.
4 If, on the other hand, the amount of depreciation under the new method is less than what was charged under the old method such a difference should be debited to the asset account in current year and credited to the Profit and Loss Account.
5 As the difference in depreciation amount is adjusted to the current value of asset in the asset account, the asset account will appear at its new value, from the date of change and depreciation will be charged according to the new method in subsequent years.

Look at Illustration 6. It will help you to clearly understand the procedure to be followed when a change of method is desired with retrospective effect.

Illustration 5

Sharat & Sons purchased a car for Rs. 1,00,000 on January 1,1983. The car was depreciated at 10% under the written down value method. On January 1, 1986 they wanted to change the method of depreciation from reducing instalment method to straight line method without changing the rate. Show the asset account from 1983 to 1.986.

Solution :

Car Account

Dr.					Cr.
1983		Rs.	1983		Rs.
Jan. 1	To Bank A/c	1,00,000	Dec. 31	By Depreciation A/c	10,000
			" 31	By Balance c/d	90,000
		1,00,000			1,00,000
1984			1984		
Jan. 1	To Balance b/d	90,000	Dec. 31	By Depreciation A/c	9,000
			" 31	By Balance cld	81,000
		90,000			90,000
1985			1985		
Jan. 1	To Balance b/d	81,000	Dec. 31	By Deprecintion A/c	8,100
			" 31	By Balance c/d	72,900
		81,000			81,000
1986			1986		
Jan. 1	To Balance b/d	72,900	Dec. 31	By P & L A/c (dif.)	2,900
			" 31	By Depreciation A/c	10,000
			" 31	By Balance c/d	60,000
		72,900			72,900
1987					
Jan. 1	To Balance bld	60,000			

Notes : 1 If the firm had followed the fixed instalment method right from the beginning (1.1.1983), the value of car as on 1.1.1986 would be Rs. 70,000 worked out as follows :

Original cost	1,00,000
Less : Depreciation for years at Rs. 10,000 p.a. (10% of 1,00,000)	30,000
Value of Car as on 1.1.86	70,000

But from the Car Account you find that the opening balance on 1.1.1986 is Rs. 72,900..This means that under the written down value method the amount of depreciation charged during the three years was Rs. 27,100 (1,00,000 – 72,900) as against Rs. 30,060 required under the fixed instalment method. Hence, the difference between the two amounts i.e., Rs. 2,900 (30,000 – 27,100) must be charged as additional depreciation so as to adjust the asset account.

2 The depreciation to be charged for the year 1986 would be Rs. 10,000 i.e., 10% on Rs. 1,00,000 as required under the fixed instalment method. From this year onwards Rs. 10,000 will be charged as depreciatian every year.

20.9 LET US SUM UP

Depreciation is a permanent and gradual diminution in the value of an asset caused by' usage and effluxion of time.

It represents the expired cost of a fixed asset which must be charged to the Profit and Loss Account and deducted from the value of the asset concerned. Unless it is; so treated, the Profit and Loss Account will not show true profit or loss for the year and the Balance Sheet will not reflect the correct financial position.

The amount of depreciation to be charged is determined by taking into account : (i) the cost of asset, (ii) the estimated useful life, and (iii) the estimated salvage value.

There are essentially two methods of recording the depreciation in books of a account (i) By maintaining a Provision for Depreciation Account, and (ii) Without maintaining a Provision for Depreciation Account.

When a provision for Depreciation Account is maintained the depreciation is credited to this account from year to year. Its accumulated balance is transferred to the asset account only at the end of the life of the asset or when the same is sold. But when provision for Depreciation Account-is not maintained, the depreciation is directly credited to the asset account every year. Of course, in the Balance Sheet the asset will always be shown at the depreciated value.

There are various methods of calculating the amount of depreciation. Of these, the two most common method? are : (i) fixed instalment method, and (ii) diminishing balance method. Under the fixed instalment method an equal amount is charged as depreciation year after yearwhile under the diminishing balance method the amount of depreciation goes on reducing year after year. Both have their merits and demerits, But, the diminishing balance method is considered better because the combined cost on account of depreciation and repairs is uniformly distributed over the working life of an asset. Although the amount of depreciation under these two methods differ, the method of recording it in the books of account is the same.

Sometimes, a concern may decide to change the method of depreciation. If the change is to take effect from current years, it does not involve much problem. But if it is with retrospective effect, it would require the calculation of depreciation according to both the methods and the difference will have to be adjusted before the depreciation can be charged accarding to changed method.

20.10 KEY WORDS

Amortisation : Writing off the expired cost of an intangible asset.
Depreciation : Permanent and gradual diminution in value of a fixed asset.
Obsolescence : Becoming out of date, a cause for depreciation in value of asset.
Residual Value : Expected realisable amount, when the asset is sold out at the end of its useful life,
Salvage **Value :** Same as residual or scrap value.
Written Down Value : Book value of an asset after deducting depreciation from the original cost. It is also called depreciated value.

20.11 SOME USEFUL BOOKS

Gupta R.L and M. Radhaswamy, 1986. *Advanced Accountancy*, Volume 1, Sultan , Chand & Sons, New Delhi. (Chapter 3 Section II)
Maheshwari S.N. 1986. *Introduction* to *Accounting*, Vikas Publishing House : New Delhi. (Chapter 13)
Patil, V.A. and J.S. Korlahalli, 1986. *Principles and Practice of Accounting*, R. Chand & Co., New Delhi. (Chapter 4 Volume II)
Shukla, M.C. and T.S. Grewal, 1987. *Advanced Accounts*, S. Chand & Co., New Delhi. (Chapter 7)
William Pickles. 1982. *Accountancy*, E.I..B.S. and Pitman, London. (Chapter 7)

20.12 ANSWERS TO CHECK YOUR PROGRESS

A 3 i) False ii) True iii) True iv) False
v) False vi) False vii) False viii) True

B 3 i) False ii) True iii) False iv) False
v) True vi) False.

20.13 TERMINAL QUESTIONS/EXERCISES

Questions

1 Define depreciation. Distinguish it from depletion, amortisation and obsolescence.
2 Explain the need and significance of depreciation. What factors should he considered for determining the amount of depreciation?
3 Enumerate the methods of calculating depreciation. Discuss the advantages and disadvantages of fixed instalment method.
4 What are the merits and demerits of written down value method? Distinguish it from the straight line method.
5 Describe the methods of recording depreciation in books of account:. How is the balance of the Provisions for Depreciation Account shown in the Balance Sheet?

Exercises

1 A cold storage plant was purchased on July 1, 1980 for Rs. 1,00,000. Show the plant Account under (a) the Straight Line Method and (b) the Written Down Value Method. Rate of depreciation charged is 20%. What is the balance of plant at the end of the third year?

(Answer : Balance at the end of the third year (a) under Straight Line Method : Rs. 40,000; and (b) under Written Down Value Method : Rs. 51,200)

2 Suresh purchased plant and machinery far Rs. 50,000 on July 1, 1983. The asset was to be depreciated at the rate of 10 per cent per annum on written down value basis. The machinery was sold on January 1, 1987 for Rs. 32,000. Write up Machinery Account assuming accounting year to end on December 31 every year.

(Answer : Loss on sale Rs. 2,627)

3 On 1-8-1983, a machine was purchased by a manufacturing concern for Rs. 60,000 and it spent for its overhaul and installation Ks. 10,000. Its effective life was estimated to be ten years and residual value at the end of its life time was estimated to be Rs. 10,000.
Show Machine Account for the first three years assuming that the concern decided to depreciate it under the fixed instalment method. The accounting year ends on December 31.

(Answer : Balance of Machine Accounts as on January 1, 1986: Rs. 55,000)

4 Ashok Ltd. has bought machinery for Rs. 1,00,000 including a boiler worth Rs. 10,000. The Machinery Account hut! been credited for depreciation on the written down value method for the past four years at the rate of 10%. During the fifth year the boiler became useless on account of damage to some of its vital parts; the damaged boiler is sold for Rs. 5,000. Write up the Machinery Account.

(Answer : Loss on sale of machinery Rs. 1,561; Balance of Machinery Account as at the end of fifth year Rs. 59,049.)

5 Navrang & Co., whose accounting year is the calendar year, purchased machinery costing Rs. 60,000 on July 1, 1984. It purchased further machinery on September 1, 1984 costing Rs. 30,000.
On January 1, 1986 one-third of the Machinery installed on June 1, 1984 became obsolete and was sold for Rs. 5,000.
Depreciation is being written off on fixed instalment system at 10% per annum. Prepare the machinery account as would appear in the ledger of the company for the years 1984, 1985 and 1486.

(Answer : Balance of Machinery Account as on January 1, 1987 : Rs. 53,000).

6 On October 1, 1983 Raghavan & Sons purchased machinery for Rs. 30,000 and spent Rs. 3.000 on installing it. On January 1, 1984, the firm purchased another machinery fur Rs. 20,000. On June 30, 1985 the machinery purchased on January 1, 1984 was sold for Rs. 16,000 and on the same date a fresh plant was installed at a cost of Rs. 25,000.

The company writes off 10% depreciation on the diminishing balance method. The accounts are closed every year on December 31. Show the Machinery account for the years 1983, 1984 and 1985.

(Answer : Balance of Machinery Account as on January 1, 1987 : Rs. 39,950)

7 On July 1, 1980, a company purchased a plant for Rs. 2,00,000. Depreciation was provided at 10% per annum on straight line method on December 31, every year. With effect from January 1, 1982 the company decided to change the method of depreciation to diminishing balance method @ 15% per annum with retrospective effect. On July 1, 1983, the plant was sold for Rs. 1,20,000. Prepare Plant Account from 1980 to 1983).

(Answer : Loss on sale of plant : Rs. 3,637.

8 Work out problem No. 7 assuming that (a) the asset was originally depreciated on written down value method at 20% and that (b) now it is desired to change the method to fixed instalment method with retrospective effect, rate of depreciation remaining same.

(Answer : Profit on sale of plant Rs. 40,000).

Note: These questions will help you to understand the unit better. Try to write answers for them. But do nor submit your answers to the University. These are for your practice only.