



# CONCEPT AND ACCOUNTING OF DEPRECIATION



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# DEPRECIATION ACCOUNTING

## **Meaning:-**

Depreciation is the decrease in the value of Depreciable Asset due to wear and tear, passage of time, change of technology etc.

It is charged every year and deducted from book value of depreciable asset to calculate the value of depreciable asset which to be shown in Balance sheet.



# DEPRECIATION ACCOUNTING

## Important Note:-

- Depreciation is a non-cash expenditure.
- Land is never depreciated.
- Current Assets are never depreciated instead valued.



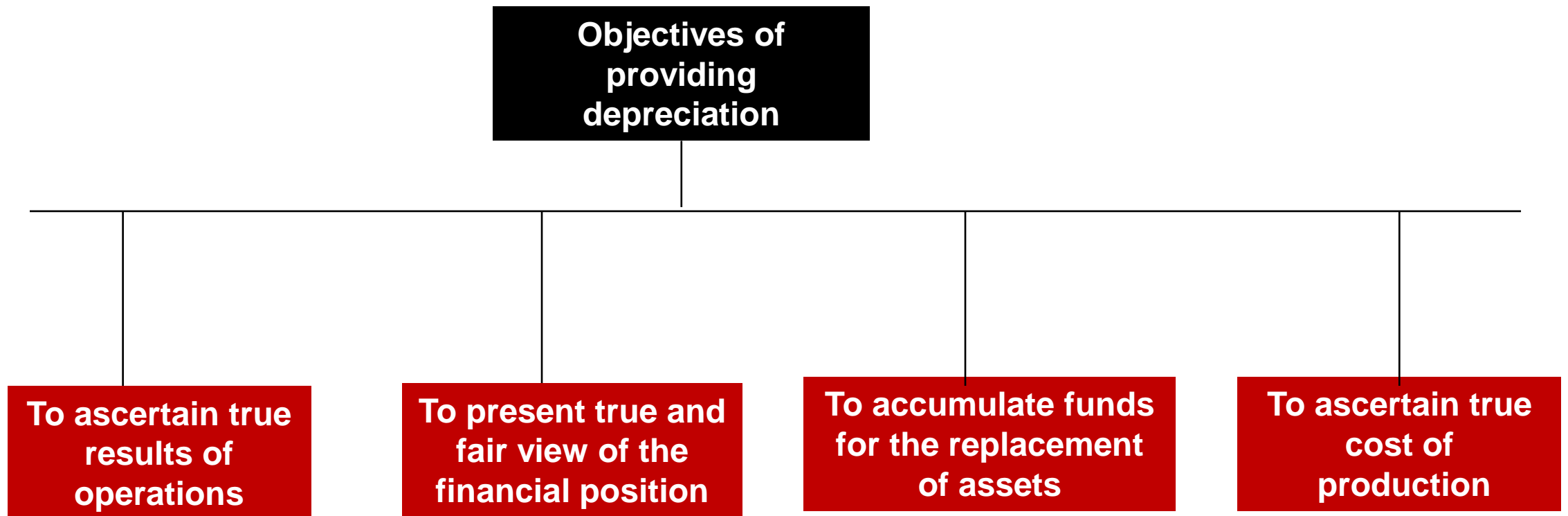
# DEPRECIATION ACCOUNTING

## Depreciable Assets are those 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.



# DEPRECIATION ACCOUNTING





# DEPRECIATION ACCOUNTING

## BASIC FACTORS AFFECTING DEPRECIATION

**1. Cost of asset.** The original cost of asset paid/payable on acquisition of asset, is increased with the amount spent on installation, freight, loading and unloading charges, transit insurance, octroi, import duty etc. The aggregate amount is called 'cost of asset'.

**Let's take us an example**



# DEPRECIATION ACCOUNTING

## BASIC FACTORS AFFECTING DEPRECIATION

**2. Estimated working life.** Technical expertise is required to estimate the working life of an asset. Conditions under which the asset is maintained and preserved affect the life of asset. The estimated working life of the asset may be measured in terms of years, months, days, hours, output (unit) & weight etc.

**3. Salvage/Residual/Scrap value.** It refers to the estimated amount which will be realized when asset is sold, discarded, or exchanged for a new asset at the end of its working life. Cost of asset minus residual value is called the 'Depreciable Amount' which is charged over the working life of asset.



# DEPRECIATION ACCOUNTING

## BASIC FACTORS AFFECTING DEPRECIATION

**4.Provision for repairs and renewals.** Proper repairs and renewals undertaken at regular intervals help in keeping the asset in good condition. Both handling and careless approach adversely affect the life of the asset. Thus, before estimating the amount of depreciation this factor must be taken into consideration.





# DEPRECIATION ACCOUNTING

## BASIC FACTORS AFFECTING DEPRECIATION

**5. Depreciation in case of obsolescence.** If the asset is likely to be of nil value due to some new inventions, more amount of depreciation should be provided. Lesser the period more will be the amount of depreciation. Suppose, if the asset is expected to be obsolete within 6 years, the firm will have to split its value over 6 years. If it will obsolete in 5 years, the value will be split over 5 years. It means the amount of depreciation charged over every year, will increase with more quick obsolescence.

# DEPRECIATION ACCOUNTING

## BASIC FACTORS AFFECTING DEPRECIATION

**6. Legal provisions.** If there are some legal provisions for providing depreciation on asset the same should be taken into consideration. Provisions of Companies Act, 2013 and Income Tax Act, 1961 are relevant in this regard.

**7. Additions to assets.** Any capital expenditure incurred on extension or addition to old machinery will be subject to depreciation in the year in which the addition is made to the asset.



# DEPRECIATION ACCOUNTING

**The following journal entries are passed to give effect to the depreciation:**

**(i) For providing depreciation**

Depreciation Account	Dr.
To Asset Account	

**(ii) For transfer of depreciation to Profit and Loss A/c**

Profit and Loss Account	Dr.
To Depreciation Account	



# DEPRECIATION ACCOUNTING

**The following journal entries are passed to give effect to the depreciation:**

**(iii) When additional asset is purchased during the year**

Asset a/c	Dr.
To Bank a/c	



# DEPRECIATION ACCOUNTING

## **(iv) Journal entry at the time of sale**

### **(a) When asset is sold**

Bank a/c	Dr.
To Asset a/c	

### **(b) For the depreciation of current period**

Depreciation a/c	Dr.
To Asset a/c	

### **(c) For profit & loss a/c on sale**

Profit & loss	Dr.
To Asset a/c	



# DEPRECIATION ACCOUNTING

- **Method for providing depreciation**
  - **Straight Line Method**
  - **Reducing balance method**
  - **Sum of years of digits method**
  - **Machine hour method**
  - **Production units method**
  - **Depletion method**



# DEPRECIATION ACCOUNTING

## Methods of Depreciation

### Straight Line Method

Under this method, a fixed proportion of original cost of the asset is written off annually so that by the time asset is worn out, its value in the books is reduced to zero or residual value. It is also known as fixed installment method. In this method, a fix amount of depreciation is debited to profit & loss a/c every year. The following is the formula for calculating depreciation under this method :-

$$\text{Depreciation} = \frac{\text{Cost price of asset} - \text{Scrap value of asset}}{\text{Estimated life of asset}}$$



# DEPRECIATION ACCOUNTING

## Illustration 1.

A trader bought machinery on 1<sup>st</sup> January, 2013 for Rs. 1,25,000 whose useful life has been estimated 5 years. After the expiry of useful life, the scrap will realize Rs. 25,000. Prepare machinery account and depreciation account, charging depreciation by fixed installment method for 5 years.





# DEPRECIATION ACCOUNTING

## Solution1.

$$\text{Annual Depreciation} = \frac{(1,25,000 - 25,000)}{5} = \text{Rs. } 20,000$$

Dr.		MACHINERY ACCOUNT		Cr.	
2013		Rs.	2013		Rs.
Jan1.	To bank A/c	125000	Dec31.	By Depreciation A/c	20000
				By Balance c/d	<u>105000</u>
		<u>125000</u>			<u>125000</u>
2014		Rs.	2014		Rs.
Jan1.	To bal b/d	105000	Dec31.	By Depreciation A/c	20000
				By Balance c/d	<u>85000</u>
		<u>105000</u>			<u>105000</u>



# DEPRECIATION ACCOUNTING

## Solution1.

Dr.		MACHINERY ACCOUNT		Cr.	
2015		Rs.	2015	Rs.	
Jan1.	To bal b/d	85000	Dec31.	By Depreciation A/c	20000
		<u>85000</u>		By Balance c/d	<u>65000</u>
					<u>85000</u>
2016		Rs.	2016	Rs.	
Jan1.	To bal b/d	85000	Dec31.	By Depreciation A/c	20000
		<u>85000</u>		By Balance c/d	<u>45000</u>
					<u>85000</u>
2017		Rs.	2017	Rs.	
Jan1.	To bal b/d	45000	Dec31.	By Depreciation A/c	20000
		<u>45000</u>		By Cash A/c sale	<u>25000</u>
					<u>45000</u>



# DEPRECIATION ACCOUNTING

Dr.	DEPRECIATION ACCOUNT		Cr.
2013	Rs.	2013	Rs.
Dec31. To Depreciation A/c	<u>20000</u>	Dec31. By Profit & Loss A/c	<u>20000</u>
2014		2014	
Dec31. To Depreciation A/c	<u>20000</u>	Dec31. By Profit & Loss A/c	<u>20000</u>
2015		2015	
Dec31. To Depreciation A/c	<u>20000</u>	Dec31. By Profit & Loss A/c	<u>20000</u>
2016		2016	
Dec31. To Depreciation A/c	<u>20000</u>	Dec31. By Profit & Loss A/c	<u>20000</u>
2017		2017	
Dec31. To Depreciation A/c	<u>20000</u>	Dec31. By Profit & Loss A/c	<u>20000</u>



# DEPRECIATION ACCOUNTING

## DIMINISHING BALANCE METHOD

Diminishing balance method in accounting is the method by which the total amount of the depreciation can be calculated like some fixed percentage of the diminishing and reducing value of any asset that can stand in books during the beginning of an annual year so that it can bring the book value down to its initial residual value. The depreciation amount decreases every year. This means that the depreciation amount does not remain fixed but gradually decreases annually. It is also said that the depreciation method is the same as the Fixed Installment Method.



# DEPRECIATION ACCOUNTING

## DIMINISHING BALANCE METHOD

The rate of depreciation under this method may be determined by the following formula:

$$1 - n \sqrt{\frac{\text{Residual Value}}{\text{Cost of asset}}} \times 100$$

Where, n = useful life



# DEPRECIATION ACCOUNTING

## Example:

If the cost of a machine is Rs. 10,000 and scrap value after 4 years is Rs. 2,000, the rate of depreciation is calculated as under:

$$r = 1 - \frac{4 \quad 2000}{10,000} \times 100 = 33.33\%$$



# DEPRECIATION ACCOUNTING

**Taking the above example, the calculation of depreciation for each of the four years would be as follows:**

Year	Computation	Annual	Accumulated	
Written	Down Value	Depreciation	Depreciation	
1	Rs. 10,000x33.33%	3,333	3,333	6,667
2	Rs. 6,667x33.33%	2,222	5,555	4,445
3	Rs. 4,445x33.33%	1,482*	7,037	2,963
4	Rs. 2,963x33.33%	963**	8,000	2,000



# DEPRECIATION ACCOUNTING

**Illustration 2.** A firm purchased plant and machinery on 1<sup>st</sup> April, 2013 for Rs. 50,000. Depreciation is written-off at the rate of 10 percent per annum. Show for five years plant and machinery account and depreciation account under both the fixed installment and reducing installment methods. The firm closes its books on 31<sup>st</sup> December each year.





# DEPRECIATION ACCOUNTING

## Solution2.

Dr.				Cr.			
Plant & Machinery A/c							
Date	Particulars	Fixed installment method	Reducing installment method	Date	Particulars	Fixed installment method	Reducing installment method
		Rs.	Rs.			Rs.	Rs.
2013				2013			
Apr1.	To Bank a/c	50000	50000	Dec 31	By Depreciation a/c	3,750	3,750
				Dec 31	By balance c/d	46,250	46,250
						50,000	50,000



## Examination Questions ( July 2021)

**4 MARKS**

The balance of Machinery Account of a firm on 1st April, 2020 was ` 28,54,000. Out of this, a plant having book value of ` 2,16,090 as on 1st April, 2020 was sold on 1st July, 2020 for

` 82,000. On the same date a new plant was purchased for ` 4,58,000 and ` 22,000 was spent on its erection. On 1st November, 2020 a new machine was purchased for ` 5,60,000. Depreciation is written off @ 15% per annum under the diminishing balance method. Calculate the depreciation for the year ended 31st March, 2021.



## Examination Questions ( November 2019)

**10 MARKS**

X purchased a machinery on 1st January 2017 for ₹ 4,80,000 and spent ₹ 20,000 on its installation. On July 1, 2017 another machinery costing ₹ 2,00,000 was purchased. On 1st July, 2018 the machinery purchased on 1st January, 2017 having become scrapped and was sold for ₹ 2,90,000 and on the same date fresh machinery was purchased for ₹ 5,00,000. Depreciation is provided annually on 31st December at the rate of 10% p .a. on written down value. Prepare Machinery account for the years 2017 and 2018.



# DEPRECIATION ACCOUNTING

## Sum of Years of Digits Method

It is variation of the “Reducing Balance Method”. In this case, the annual depreciation is calculated by multiplying the original cost of the asset less its estimated scrap value by the fraction represented by:

The number of years (including the present year) of remaining life of the asset  
Total of all digits of the life of the asset (in years)

Suppose the estimated life of an asset is 10 years; the total of all the digits from 1 to 10 is 55 i.e.,  $10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1$ , or by the formula:

$$\frac{n(n+1)}{2} = \frac{10 \times 11}{2} = 55$$



# DEPRECIATION ACCOUNTING

The depreciation to be written off in the first year will be  $10/55$  of the cost of the asset less estimated scrap value; and the depreciation for the second year will be  $9/55$  of the cost of asset less estimated scrap value and so on.

The method is not yet in vogue; and its advantages are the same as those of the Reducing Balance Method.



## ILLUSTRATION 3

M/s Akash & Co. purchased a machine for ₹ 10,00,000. Estimated useful life and scrap value were 10 years and ₹ 1,20,000 respectively. The machine was put to use on 1.1.2014.

### **Required**

Show Machinery Account and Depreciation Account in their books for 2019 by using sum of years digits method.



# DEPRECIATION ACCOUNTING

## **Depletion method**

This method is an accounting for natural resources rather than accounting for depreciation. Wasting assets such as mines, quarries and the like are examples of such natural resources. The distinguishing feature of these types of assets is that they cannot be depreciated but can gradually be depleted. This is because these assets can be physically consumed and converted into inventory. For example, a coal mine can be considered as an underground inventory of coal. But such inventory can not be considered as one of the current assets.



# DEPRECIATION ACCOUNTING

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For example, suppose a mine is acquired for Rs. 10,00,000 and it is estimated that 2,50,000 tonnes of coal can be extracted over its life.

Therefore, the rate of depreciation per tonne of coal is  $\text{Rs. } 10,00,000 / 2,50,000 = \text{Rs. } 4$ .

If 50,000 tonnes are extracted in a year, then the depreciation for that year will be  $50,000 \times \text{Rs. } 4 = \text{Rs. } 2,00,000$ .



## ILLUSTRATION 6

M/s Surya & Co. took lease of a quarry on 1-1-2017 for ₹ 1,00,00,000. As per technical estimate the total quantity of mineral deposit is 2,00,000 tonnes. Depreciation was charged on the basis of depletion method. Extraction pattern is given in the following table:

<b>Year</b>	<b>Quantity of Mineral extracted</b>
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2017	2,000 tonnes
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2018	10,000 tonnes
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2019	15,000 tonnes
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### **Required**

Show the Quarry Lease Account and Depreciation Account for each year from 2017 to 2019.



# DEPRECIATION ACCOUNTING

## MACHINE HOUR RATE METHOD

This method is used in case life of an asset can be measured in machine hours which is used for dividing depreciable amount to calculate depreciation per hour. Here, it is necessary to estimate the total effective working hours (estimated hours less idle time) during the whole life of the machine and to divide this total into the net cost of the machine and thus arriving at an hourly rate of depreciation.

# DEPRECIATION ACCOUNTING

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## **MACHINE HOUR RATE METHOD**

Schedule II To the Companies Act 2013, prescribes estimated useful life of different assets for Companies, also recognizes this method to some extent. It prescribes that depreciation should be charged using estimate useful life suggested in it, however, in certain category of plant and machinery it prescribes to charge higher amount of depreciation if these assets are used for 2 shifts or 3 shifts. In a way, schedule II combines straight line method and machine hour method.



# DEPRECIATION ACCOUNTING

## MACHINE HOUR RATE METHOD

***For example*** a machine cost Rs. 50,000 with an estimated residual value of Rs. 10,000. The expected effective hours during its life is 20,000. The depreciation charge per machine hour would be:

$$\text{Machine Hour Rate} = \frac{\text{Cost of the Machine} - \text{Scrap Value}}{\text{Effective Working Hours}}$$

Therefore, depreciation rate per machine hour is =  $\frac{50000-10000}{20000} = \text{Rs.}2$

Under this method, each period each period is charged with depreciation to the extent of the use of machine. But this method misses a vital point, i.e. depreciation also takes place even when a machine is not in use.

## **ILLUSTRATION 4**

A machine was purchased for ₹ 30,00,000 having an estimated total working of 24,000 hours. The scrap value is expected to be ₹ 2,00,000 and anticipated pattern of distribution of effective hours is as follows :

### **Year**

1 – 3 3,000 hours per year

4 - 6 2,600 hours per year

7 - 10 1,800 hours per year

### **Required**

Determine Annual Depreciation under Machine Hour Rate Method.



# DEPRECIATION ACCOUNTING

## PRODUCTION UNITS METHOD

Under this method depreciation of the asset is determined by comparing the annual production with the estimated total production. The amount of depreciation is computed by the use of following method:

$$\text{Depreciation for the period} = \text{Depreciable Amount} \times \frac{\text{Production during the period}}{\text{Estimated total production}}$$

The method is applicable to machines producing product of uniform specifications.

## ILLUSTRATION 5

A machine is purchased for ₹ 20,00,000. Its estimated useful life is 10 years with a residual value of ₹ 2,00,000. The machine is expected to produce 1.5 lakh units during its life time. Expected distribution pattern of production is as follows:

Year    Production

1-3    20,000 units per year

4-7    15,000 units per year

8-10   10,000 units per year

### Required

Determine the value of depreciation for each year using production units method.



# DEPRECIATION ACCOUNTING

## DEPRECIATION OF REVALUED ASSETS

Para 26 of AS-6 states that 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.





# DEPRECIATION ACCOUNTING

## Sale of Previously Revalued Assets

In this connection Para-32 of AS-10 states that:-

- Increase in the value of Asset will debited to Asset A/c and Credited to Revaluation Reserve/Surplus A/c.
- Decrease in value of Asset will be debited to P/L A/c and Credited to Asset A/c.

# DEPRECIATION ACCOUNTING

In this connection Para-32 of AS-10 states that:-

- If, an Asset is first increased and then later decreased then Revaluation Reserve will be debited (maximum upto to the amount earlier increased) and credited to Asset A/c. Any excess will be debited to P/L A/c and credited to Asset A/c.
- If, an Asset is first decreased and later increased then Asset A/c will be debited and P/L A/c (maximum upto the amount of decrease) will be credited.



# DEPRECIATION ACCOUNTING

## Sale of Previously Revalued Assets

### Illustrative Example

The net book value of an asset is Rs. 10,000 which is disposed off for Rs. 6,000. The asset was previously revalued upwards by Rs. 3,000. Here, the loss of Rs. 4,000 (Rs. 10,000-6,000) is to be adjusted first by debiting Revaluation Reserve (Rs. 3,000) and the balance by debiting Profit & Loss A/c (Rs. 1,000).

It should be noted that if the Revaluation Reserve Account in respect of that asset has already been reversed or utilized, no adjustment against Revaluation Reserve Account is possible. In this case, the entire amount is to be debited to Profit & Loss Account.



# DEPRECIATION ACCOUNTING

## SUMMARY

- Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.
  
- Objectives for providing depreciation are:
  - Correct income measurement by matching the charge for the year
  - True financial position statement by showing PP&E at their current value
  - Funds for replacement
  - Ascertainment of true cost of production.



# DEPRECIATION ACCOUNTING

## SUMMARY

- Factors in the measurement of depreciation:
  - Cost of asset
  - Estimated useful life of the asset
  - Estimated scrap value (if any) at the end of useful life of the asset.



# DEPRECIATION ACCOUNTING

## SUMMARY

- Methods for providing depreciation:
  - Straight line method
  - Reducing balance method
  - Sum of years of digits method
  - Machine hour method
  - Production units' method
  - Depletion method



# DEPRECIATION ACCOUNTING

## SUMMARY

- The resulting profit or loss on sale of the tangible asset is ultimately transferred to profit and loss account.
- The depreciation method residual value & useful life applied to an asset should be reviewed at least at each financial year-end and, if there has been a significant change in the expected pattern of consumption of the future economic benefits embodied in the asset, on account of the above, they should be changed to reflect the changed pattern.



# DEPRECIATION ACCOUNTING

## SUMMARY

- Whenever there is a revision in the estimated useful life of the asset, the balance depreciable amount should be charged to the asset over the revised remaining estimated useful life of the asset.
- Whenever the depreciable asset is revalued, the depreciation should be charged on the revalued amount on the basis of the remaining estimated useful life of the asset.





# DEPRECIATION ACCOUNTING

## TEST YOUR KNOWLEDGE

### True and False

- Depreciation of an asset begins when it is available for use in the location & condition necessary for it to be capable of being operated.  
True : It is not necessary that the asset must be used to be depreciated, thus depreciation may start once it is brought in the location & condition required to be used



# DEPRECIATION ACCOUNTING

## TEST YOUR KNOWLEDGE

Akash purchased a machine for Rs.12,00,000. Estimated useful life is 10 years and scrap value is ₹ 1,00,000. Depreciation for the first year using sum of the years digit method shall be ₹ 2,00,000.