

Chapter 4 – Concept and Accounting of Depreciation

Meaning of Depreciation

Depreciation means fall in the value of tangible fixed asset because of its usage or with efflux of time or due to obsolescence or accident.

Depreciation, Amortisation and Depletion

The term “Depreciation” is used for tangible fixed assets, “Amortisation” is used for intangible fixed assets, and “Depletion” is used for a wasting asset such as extraction of material from quarry, mine, etc.

Objectives or Need for Providing Depreciation

Depreciation is provided to achieve the following objectives:

1. Correct Income Measurement,
2. True Position Statement,
3. Funds for Replacement,
4. Ascertainment of True Cost of Production.

Factors in the Measurement of Depreciation

Following factors are taken into consideration for calculation of depreciation:

1. Cost of asset, including expenses for installation, commissioning, trial run, etc.
2. Estimated useful life of the asset.
3. Estimated scrap value (if any) at the end of useful life of the asset.

Methods of Recording Depreciation

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

1. When Depreciation is Charged to the Asset Account –
Under this method, in the Balance Sheet, the asset is shown at its written down value (i.e., cost less depreciation provided to date). The following entries are recorded:
 - a. On recording depreciation:

Depreciation A/c	Dr.
To Asset A/c	
 - b. On transferring depreciation to Profit & Loss A/c:

Profit & Loss A/c	Dr.
To Depreciation A/c	
2. When Provision for Depreciation/Accumulated Depreciation Account is Maintained –
Under this method, in the Balance Sheet, the asset is shown at its original cost, and the amount of depreciation provided to date is shown in the “Provision for Depreciation A/c” in the liabilities side. The following entries are recorded:
 - a. On recording depreciation:

Depreciation A/c	Dr.
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- To Provision for Depreciation A/c
- b. On transferring depreciation to Profit & Loss A/c:
- | | |
|---------------------|-----|
| Profit & Loss A/c | Dr. |
| To Depreciation A/c | |

Methods of Providing Depreciation

The following are the various methods for providing depreciation:

1. Uniform Charge Methods:
 - a. Fixed Instalment Method or Straight-Line Method
 - b. Depletion Method
 - c. Machine Hour Rate Method
 - d. Production Units Method
2. Declining Charge or Accelerated Depreciation Methods:
 - a. Diminishing Balance Method or Reducing Balance Method or Written Down Value Method
 - b. Sum of Years' Digits Method

Uniform Charge Methods

In case of these methods, depreciation is charged on uniform basis year after year. Such methods are considered appropriate only for such assets which are uniformly productive.

Fixed Instalment Method or Straight Line Method

As per this method, depreciation is charged evenly throughout the life of the asset.

$$\text{Depreciation} = \frac{\text{Original Cost} - \text{Estimated Scrap Value}}{\text{Life of Asset in Number of Years}}$$

Question 1

Jain Bros. acquired a machine on 1st July, 2015 at a cost of ₹14,00,000 and spent ₹1,00,000 on its installation. The firm writes off depreciation at 10% p.a. of the original cost every year. The books are closed on 31st December every year.

Required:

Show the Machinery Account and Depreciation Account for the year 2015 and 2016.

(ICAI Study Material)

Depletion Method

This method is used in mines, quarries, etc. which contain only a certain quantity of product. Depreciation is calculated per unit of output.

$$\text{Rate of Depreciation} = \frac{\text{Cost}}{\text{Total Estimated Quantity}}$$

$$\text{Depreciation for any year} = \text{Quantity extracted} \times \text{Rate of Depreciation}$$

Question 2

M/s Ram took lease of a quarry on 1-1-2016 for ₹2,00,00,000. As per technical estimate the total quantity of mineral deposit is 4,00,000 tonnes. Depreciation was charged on the basis of depletion method. Extraction pattern is given in the following table:

Year	Quantity of Mineral Extracted
2016	4,000 tonnes
2017	20,000 tonnes
2018	30,000 tonnes

Required:

Show the Quarry Lease Account and Depreciation Account for each year from 2016 to 2018.

(MTP November, 2019 – 10 Marks; MTP November, 2018 – 10 Marks; ICAI Study Material (Similar – the figures were halved))

Machine Hour Rate Method

This method takes into account the running time of the asset for the purpose of calculating depreciation.

$$\text{Depreciation} = \frac{\text{Original Cost} - \text{Scrap Value}}{\text{Life of Asset in Hours}}$$

Question 3

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	Hours per 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.

(ICAI Study Material)

Production Units Method

Under this method, depreciation of the asset is determined by comparing the annual production with the estimated total production.

$$\text{Depreciation} = \text{Depreciable Amount} \times \frac{\text{Production During the Period}}{\text{Estimated Total Production}}$$

Question 4

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.

(ICAI Study Material)

Declining Charge or Accelerated Depreciation Methods

In case of these methods, the amount charged for depreciation declines over the asset's expected life.

Diminishing Balance Method or Reducing Balance Method or Written Down Value Method

In this method, Depreciation is charged on the book value of asset every year. Thus, the amount of depreciation goes on decreasing every year.

$$\text{Depreciation Rate} = 1 - \sqrt[n]{\frac{\text{Net Residual Value}}{\text{Acquisition Cost}}}$$

where, n = Useful Life of the Asset.

Question 5

Jain Bros. acquired a machine on 1st July, 2015 at a cost of ₹14,00,000 and spent ₹1,00,000 on its installation. The firm writes off depreciation at 10% p.a. every year. The books are closed on 31st December every year.

Required:

Show the Machinery Account on diminishing balance method for the year 2015 and 2016.

(ICAI Study Material)

Sum of Years' Digits Method

$$\text{Depreciation} = \frac{\text{Remaining Life of the Asset (including the current year)}}{\text{Sum of all the digits of the life of the asset in years} - \text{Estimated Scrap Value}} \times (\text{Original Cost} - \text{Estimated Scrap Value})$$

Sum of all the digits of the life of the asset in years can be calculated by using the following formula:

$$\frac{n(n+1)}{2}$$

where, n = useful life of the asset.

Question 6

M/s Akash 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 1.1.2010.

Required

Show Machinery Account and Depreciation Account in their books for 2015 by using sum of years' digits method.

Profit or Loss on the Sale/Disposal of Property, Plant and Equipment

When Depreciation is Charged to Asset A/c

Follow the following Steps:

1. Bring the Asset to the correct value by charging depreciation from the beginning of the year to the date of sale:

Depreciation A/c	Dr.
To Asset A/c	
2. Determine Profit or Loss on Sale of Asset:
 - a. Receive money on Sale of Asset:

Bank A/c	Dr.
To Asset A/c	
 - b. If there's a profit:

Asset A/c	Dr.
To Profit & Loss A/c	
 - c. If there's a loss:

Profit & Loss A/c	
To Asset A/c	

Question 7

The M/s LG Transport purchased 10 trucks at ₹45,00,000 each on 1st April 2014. On October 1st, 2016, one of the trucks is involved in an accident and is completely destroyed and ₹27,00,000 is received from the insurance in full settlement. On the same date, another truck is purchased by the company for the sum of ₹50,00,000. The company write off 20% on the original cost per annum. The company follows the calendar year as its financial year. You are required to prepare the motor truck account for two year ending 31 Dec, 2017.

(MTP May, 2019 – 10 Marks; MTP November, 2018 – 10 Marks; RTP May 2018; ICAI Study Material)

Question 8

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.

(November, 2019 – 4 Marks)

When Provision for Depreciation/Accumulated Depreciation A/c is Created

Follow the following Steps:

1. Bring the Asset to the correct value by charging depreciation from the beginning of the year to the date of sale:

Depreciation A/c	Dr.
To Provision for Depreciation A/c	
2. Transfer the balance of Provision for Depreciation A/c to the Asset A/c:

Provision for Depreciation A/c	Dr.
To Asset A/c	
3. Determine Profit or Loss on Sale of Asset:	
a. Receive money on Sale of Asset:	
Bank A/c	Dr.
To Asset A/c	
b. If there's a profit:	
Asset A/c	Dr.
To Profit & Loss A/c	
c. If there's a loss:	
Profit & Loss A/c	
To Asset A/c	

Question 9

A company purchased machinery for ₹2,00,000 on 1st April, 2015. The machinery is depreciated @ 10% p.a. on the original cost. On 1st October, 2017, the machinery was sold for ₹1,20,000. Give the Machinery Account, and Provision for Depreciation Account assuming the books are closed on 31st March every year.

Change in the Method of Depreciation

When a change in the method of providing depreciation is decided, the depreciation for that year and subsequent years is calculated as per such changed method of Depreciation.

Question 10

M/s Green Channel purchased a second-hand machine on 1st January, 2015 for ₹1,60,000. Overhauling and erection charges amounted to ₹40,000.

Another machine was purchased for ₹80,000 on 1st July, 2015.

On 1st July, 2017, the machine installed on 1st January, 2015 was sold for ₹1,00,000. Another machine amounted to ₹30,000 was purchased and was installed on 30th September, 2017.

Under the existing practice the company provides depreciation @ 10% p.a. on original cost. However, from the year 2018 it decided to adopt WDV method and to charge depreciation @ 15% p.a. You are required to prepare Machinery account for the years 2015 to 2018.

(RTP November, 2019; RTP November, 2018)

Question 11

A Firm purchased an old Machinery for ₹37,000 on 1st January, 2015 and spent ₹3,000 on its overhauling. On 1st July 2016, another machine was purchased for ₹10,000. On 1st July 2017, the machinery which was purchased on 1st January 2015, was sold for ₹28,000 and the same day a new machinery costing ₹25,000 was purchased. On 1st July, 2018, the machine which was purchased on 1st July, 2016 was sold for ₹2,000.

Depreciation is charged @ 10% per annum on straight line method. The firm changed the method and adopted diminishing balance method with effect from 1st January, 2016 and the rate was increased to 15% per annum. The books are closed on 31st December every year.

Prepare Machinery account for four years from 1st January, 2015.

(May, 2019 – 10 Marks)

Revision of the Estimated Useful Life of Property, Plant and Equipment

Whenever there is a revision in the estimated useful life of the asset, the book value of the asset on the date of revision of estimated useful life should be depreciated over the revised remaining estimated useful life of the asset.

Question 12

M/s Anshul commenced business on 1st January 2011, when they purchased plant and equipment for ₹7,00,000. They adopted a policy of charging depreciation at 15% per annum on diminishing balance basis and over the years, their purchases of plant have been:

Date	Amount
01-01-2012	1,50,000
01-01-2015	2,00,000

On 1-1-2015 it was decided to change the method and rate of depreciation to straight line basis. On this date remaining useful life was assessed as 6 years for all the assets purchased before 1.1.2015 and 10 years for the asset purchased on 1.1.2015 with no scrap value.

Required:

Calculate the difference in depreciation to be adjusted in the Plant and Equipment Account for the year ending 31st December, 2015.

(ICAI Study Material)

Revaluation of Property, Plant and Equipment

Whenever a revaluation of any asset is done, such revalued amount should be depreciated over the estimated useful life of the asset.

Question 13

A Plant & Machinery costing ₹10,00,000 is depreciated on straight line assuming 10 year working life and zero residual value, for four years. At the end of the fourth year, the machinery was revalued upwards by ₹40,000. The remaining useful life was reassessed at 8 years. Calculate Depreciation for the fifth year.

(RTP May, 2020; MTP May, 2020 – 5 Marks; November, 2018 – 4 Marks)