

28.4.20 5

Methods of Calculating Depreciation:-

- ① Straight Line Method.
- ② Sinking Fund Method
- ③ Constant Percentage Method
- ④ Quantity Survey Method.

① Straight Line Method -

In this method it is assumed that the property loses its value by the same amount every year. A fixed amount of the original cost is deducted every year, so that at the end of the utility period only the scrap value is left.

$$\therefore \text{Annual Depreciation } D = \frac{\text{original cost} - \text{scrap value}}{\text{Life in year}}$$

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

where, C = Original cost

S = Scrap value

n = Life of property
in years

D = Annual Depreciation

[The Book Value after the no. of years, say N years = Original Cost - $N \times D$]

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Ex A building has been constructed for Rs 15,00,000. Assuming its Scrap value at the end of 60 years as Rs 50,000 determine the amount of depreciation by straight line method.

Solⁿ

Original cost, $C = \text{Rs } 15,00,000$

Scrap Value, $S = 50,000$

Life in years, $n = 60$ years

We know that

$$D = \frac{C - S}{n} = \frac{15,00,000 - 50,000}{60}$$

$$= \frac{14,50,000}{60}$$

$$= 24,167$$

The amount of depreciation ^{Rs} 24,167 per annum.

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~~Hence, In this problem value of property~~
 ~~$x(1-0.3) = 67600$ at the end of~~
 ~~$x = 96571$~~ ~~1st year = $C(1-P)$~~
 ~~$= 1500000(F)$~~

$2x = 0.3x = 35600$
 $x(1-0.3) = 35600$
 $0.7x = 35600$
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Given, $C = 1500000$, $n = 60$ years

$S = 50,000$, Annual depreciation

we know that

$P = ?$

$$P = 1 - \left(\frac{S}{C}\right)^{1/n} = 1 - \left(\frac{50000}{1500000}\right)^{1/60} = 0.019$$

Hence, In this problem value of property at the end of

1st year = $C(1-P)$

$= 1500000(1 - 0.019)$
 $= 1471500$

2nd year = $C(1 - 0.019)^2$

$= 1500000(0.981)^2$
 $= 1443541.5$

3rd year = $C(1 - 0.019)^3$

$= 1500000(0.981)^3$
 $= 1416111$

- ∴ Depreciation after 1st year = $1500000 - 1471500 = 28500$
- " " 2nd year = $1500000 - 1443541.5 = 56458.5$
- " " 3rd year = $1500000 - 1416111 = 1498538.89$

Ex. A land measuring 600 m^2 is purchased at a rate of Rs 100 per m^2 . A building of 200 m^2 area is constructed on it. The cost of construction is Rs 800000/- If the return on the cost of land and building is to be 6% and 8% respectively. What should be the rent for property? Assume all outgoings 30% of gross ~~net~~ rent.

Soln.

$$\text{Cost of land} = 600 \times 100 = 60,000$$

$$\text{Cost of construction} = \text{Rs } 8,00,000/-$$

$$\begin{aligned} \text{Net return on land cost @ 6\%} &= 60,000 \times \frac{6}{100} \\ &= 3600 \end{aligned}$$

$$\begin{aligned} \text{Net return on Construction cost @ 8\%} &= 8,00,000 \times \frac{8}{100} \\ &= 64,000 \end{aligned}$$

$$\text{Net rent per Year} = 3600 + 64,000 = 67,600$$

$$\text{Let Gross rent} = x$$

$$\therefore \text{Gross rent} = \text{Net rent} + \text{outgoings}$$

$$x = 67,600 + 30\% \text{ of } x$$

$$\text{or } x = 67,600 + \left(\frac{30}{100} x \right)$$

$$= 67,600 + 0.3x$$

$$\text{or Gross rent, } x = 96,571 \text{ Per annum.}$$

$$\therefore \text{Gross rent per month} = \frac{96,571}{12}$$

$$= \text{Rs } 8048/-$$

Ex

A building is constructed at a cost of Rs 8,00,000. Calculate the monthly rent of property.

- (a) Cost of Land Rs 4,00,000
- (b) Returns expected on Cost of Land 5%
- (c) " " " " " Constⁿ 8%
- (d) Repair and maintenance 0.5% of construction cost.
- (e) Other Outgoings 20% of Gross rent.
- (f) Sinking Fund Rs 500

Solⁿ

Cost of Land = Rs 4,00,000

Construction cost = Rs 8,00,000

(b) Net return on Land cost = $4,00,000 \times 5\%$
 $= 20,000$

(c) Net return on Constⁿ cost = $8,00,000 \times 8\%$
 $= 64,000$

(d) Repair and Maintenance = $8,00,000 \times 0.5\%$
 $= 4,000$

(f) Sinking Fund = 500 (Given)

Hence, Net Rent = $20,000 + 64,000 + 4,000$
 $+ 500$
 $= 88,500$

P.T.O.

② Other outgoings = 20% of Gross Rent. 11

(20% of gross rent assuming gross rent as x)

$$\text{Gross rent} = \text{Net rent} + \text{Outgoings}$$

$$x = 88500 + 20\%x$$

$$\text{or } x = 88500 + 0.2x$$

$$\text{or } x(1-0.2) = 88500$$

$$\text{or } x = \frac{88500}{0.8} = 1,10,625$$

∴ Gross rent per annum = Rs. 1,10,625/-

∴ Gross rent per month = $\frac{1,10,625}{12}$

$$= 9,218.75$$

Say Rs. 9,219/-

[Signature]

③ Sinking Fund Method - In this method the depreciation of property is assumed to be equal to the annual sinking fund the interest on the fund for that year, which is supposed to be invested on interest bearing investment.

This method is based on a well established principle of compound interest, but it does not take into consideration the consumption of usefulness of the property.

④ Quantity Survey Method:- In this method It is the most widely used method. The property is studied in detail and loss in value owing to the physical deterioration is worked out. The amount spent or to be spent to modernization so as to offset obsolescence is worked out and taken into consideration.