



A FEW EXERCISES ON VALUATION OF IMMOVABLE PROPERTIES

- B. Kanaga sabapathy
bkvaluer@gmail.com

PART - 1

Exercise 1.1 :

The value of a building on completion in 2015 is 25 lakhs excluding foundation and the owner has insured for Rs. 25 lakhs. The value of the building in 2018 is 30 lakhs exclusive of the value of foundation. In 2018, there is a damage to the building to the extent of Rs. 3,00,000. How much the owner will get compensation from the insurance company?

$$\text{Compensation} = \frac{\text{Sum insured in 2015}}{\text{Value as on 2018}} \times \text{Damage}$$

$$\text{Compensation} = \frac{25,00,000}{30,00,000} \times 3,00,000 = \text{Rs. } 2,50,000/-$$

Exercise 1.2 :

An assessee has spent Rs. 1,20,00,000 in his new building in the year April 2014. What will be the written down value (WDV) of the above building as on 31.03.2018 assuming a rate of depreciation as 10%. This is required for preparing balance sheet for Income Tax purpose.

Cost as on April 2014	=	Rs. 1,20,00,000
Less 10% depreciation	= (-)	Rs. 12,00,000
WDV as on 31.03.2015	=	Rs. 1,08,00,000
Less 10% depreciation	= (-)	Rs. 10,80,000
WDV as on 31.03.2016	=	Rs. 97,20,000
Less 10% depreciation	= (-)	Rs. 9,72,000
WDV as on 31.03.2017	=	Rs. 87,48,000
Less 10% depreciation	= (-)	Rs. 8,74,800
WDV as on 31.03.2018	=	Rs. 78,73,200/-

**Exercise 1.3 :**

In the year 2014, Mr. 'X' has spent Rs. 78,00,000 in purchasing a vacant site of 10,000 sq.ft. which includes registration charges, stamp duty, brokerage, etc. What will be the book value of the plot as on 2018?

Book value is the amount spent originally in procuring the site.

$$\therefore \text{Book value} = \text{Rs. 78,00,000/-}$$

Exercise 1.4 :

It is a load bearing structure. Age is 8 years. Life is 60 years.

- i) What is the percentage depreciation by straight line method assuming a salvage value of 10%.
- ii) What is the depreciation by constant percentage method if the depreciation rate is 1.5%.

$$\begin{aligned} \text{i) Age} &= 8 \text{ years} \\ \text{Life} &= 60 \text{ years} \\ \text{Salvage} &= 10\% \\ \text{Depreciation} &= \frac{8}{60} \times (100 - 10) = \mathbf{12\%} \end{aligned}$$

$$\begin{aligned} \text{ii) Depreciation} &= 1 - \left(1 - \frac{r}{100}\right)^n \\ \text{Formula A} &= P \left(1 - \frac{r}{100}\right)^n \\ n &= \text{age} \\ r &= \text{rate of depreciation} \end{aligned}$$

$$\begin{aligned} \text{Depreciation factor} &= 1 - (0.985)^8 = 0.1138 \\ \text{Depreciation percentage} &= 0.1138 \times 100 = \mathbf{11.38\%} \end{aligned}$$

Exercise 1.5 :

It is a load bearing structure of 20 years old. Plinth area : 1275 sq.ft.. Replacement rate = Rs. 1,650/sq.ft. What is the depreciated value of the building (Life : 60 years, salvage value = 10%) by adopting straight line method?



Plinth area	=	1,275 sq.ft.
Replacement rate	=	Rs. 1,650/sq.ft.
Replacement value	=	Rs. 21,03,750/-
Age of the building	=	20 Years
Life of the building	=	60 years
Salvage value	=	10%
Depreciation percentage	=	$\frac{20}{60} \times (100 - 10) = 30\%$
Depreciated value or (Net Present Value)	=	$0.7 \times 21,03,720$ Rs. 14,72,625/-

Exercise 1.6 :

- i) In a plot of 3,000 sq.ft., 3 flats of same built up area 1,500 sq.ft each are constructed. What is the Undivided share (UDS) of land for each flat?
- ii) If 3 flats of 1,500, 800, 700 are constructed in the plot of 3,000 sq.ft., what is the UDS of land for 1,500 sq.ft. of flat?

i)	Built up area	= 3 x 1,500	=	4,500 sq.ft.
	Plot area		=	3,000 sq.ft.
	FSI	= 4,500/3,000	=	1.5
	UDS	= 1,500 / 1.5	=	1,000 sq.ft.

ii)	Built up area	= 1,500 + 800 + 700	=	3,000 sq.ft.
	Plot area		=	3,000 sq.ft.
	FSI	= 3,000/ 3,000	=	1
	UDS for 1,500 sq.ft. flat	= 1,500 / 1	=	1,500 sq.ft.

Exercise 1.7 :

Land rate = Rs. 5,500 / sq.ft. FSI is 2. Building unit rate is Rs. 2,000/sq.ft. Assuming the promoter's profit as 20%, what is the composite rate?

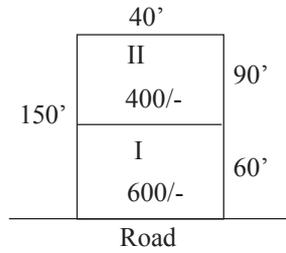
Prevailing land rate	=	Rs. 5,500 / sq.ft.
FSI	=	2
Land component = 5,500 / 2	=	Rs. 2,750
Building rate	=	Rs. 2,000
Land + building component	=	Rs. 4,750



Add promoter's profit, 20% = Rs. 950
 Composite unit rate = **Rs. 5,700/-**

Exercise 1.8 :

Estimate the value of plot 40' x 150' by belting method. The prevailing market rate for one ground plot in the nearby locality is Rs. 600/sq.ft. Standard depth is 60'.



Belts	Size	Extent sq.ft.	Basic rate for standard depth. (Rs.)	Unit rate adopted Rs.	Estimated value Rs.
I Belt	40' x 60'	2,400	600	600	14,40,000
II Belt	40' x 90'	3,600	600	400	14,40,000
	40' x 150'	6,000	---	---	28,80,000

Exercise 1.9 :

The built up area of a GF building is 5,000 sq.ft. and the carpet area is 4,000 sq.ft. Plot size is 10,000 sq.ft. What is the FSI?

$$\begin{aligned}
 \text{FSI} &= \frac{\text{Builtup area}}{\text{Plot area}} \\
 &= \frac{5,000}{10,000} = \mathbf{0.5}
 \end{aligned}$$

$$\begin{aligned}
 \text{Plot coverage} &= \frac{\text{GF area}}{\text{Plot area}} \times 100 \\
 &= \frac{5,000}{10,000} \times 100 = \mathbf{50\%}
 \end{aligned}$$

Exercise 10 :

A building of 8,000 sq.ft (GF & FF - 4,000 sq.ft each) is existing in a plot of 8,000 sq.ft. What is the plot coverage?



$$\begin{aligned} \text{Plot coverage} &= \frac{\text{Plinth area of GF}}{\text{Plot area}} \times 100 \\ &= \frac{4,000}{8,000} \times 100 = \mathbf{50\%} \end{aligned}$$

Exercise 1.11 :

In a plot of 2,400 sq.ft., Mr. X has proposed to construct a building of 1,200 sq.ft. He has obtained loan. Basement completed (25%). Land rate is Rs. 1,000/sq.ft. The unit construction cost is Rs. 1,800/-. Determine the stage value of the property for primary security purpose to bank.

$$\begin{aligned} \text{Land value} &= 2,400 \times 1,000 &= & \text{Rs. 24,00,000} \\ \text{Building value} &= 0.25 \times 1,200 \times 1,800 &= & \text{Rs. 5,40,000} \\ \text{Total value} &&= & \mathbf{\text{Rs. 29,40,000/-}} \end{aligned}$$

Exercise 1.12 :

The plot area is 3,000 sq.ft. The land rate is Rs. 1,500/sq.ft. The owner wishes to construct a building of 3 floors of 1,200 sq.ft. each. The average unit rate of construction is Rs. 1,600/-. The total estimated amount is Rs. 57.60 lakhs and the bank has sanctioned a loan of 43.20 lakhs. The owner has completed 40% of the civil works. In order to pay the first installment of loan, the bank directs the valuer to certify the stage cost of the building alone.

$$\begin{aligned} \text{Number of floors} &= 3 \\ \text{Built up area of each floor} &= 1,200 \text{ sq.ft.} \\ \text{Total built up area} &= 3 \times 1,200 = 3,600 \text{ sq.ft.} \\ \text{Unit rate of construction} &= \text{Rs. 1,600/-} \\ \text{Total value of completion} &= 3,600 \times 1,600 \\ &= \text{Rs. 57,60,000/-} \\ \text{Stage percentage completed} &= 40\% \\ \text{Stage value} &= 0.4 \times 57,60,000 \\ &= \mathbf{\text{Rs. 23,04,000/-}} \end{aligned}$$

Exercise 1.13 :

The monthly rent (Net) of a shop of 540 sq.ft. is Rs. 12,000/-. Calculate the approximate value by rent capitalisation method by adopting a rate of return as 5%.



Monthly rent	=	Rs. 12,000
Yearly rent	=	12,000 x 12
	=	Rs. 1,44,000/-
Rate of return adopted	=	5%
Capitalised value	=	$1,44,000 \times \frac{100}{5}$
	=	Rs. 28,80,000/-

Exercise 1.14 :

The net monthly rent of a residential building of 1,250 sq.ft. is Rs. 16,500/-. Find the approximate value of the property by rent capitalisation method by adopting a rate of return as 3%.

Monthly rent	=	Rs. 16,500
Yearly rent	=	16,500 x 12
	=	Rs. 1,98,000/-
Rate of return	=	3%
Capitalised value	=	$1,98,000 \times \frac{100}{3}$
	=	Rs. 66,00,000/-

Exercise 1.15 :

20 years factory building of 5,000 sq.ft. is situated in 1 acre of industrial land. The unit replacement rate of building is Rs. 1,000/-. Assuming the life as 40 years and a salvage value of 30%, find the depreciated value and salvage value of the building.

Plinth area	=	5,000 sq.ft.
Replacement rate	=	Rs. 1,000/sq.ft.
Replacement value	=	Rs. 50,00,000
Age of the building	=	20 years
Life assumed	=	40 years
Salvage value assumed	=	30%
Depreciation percentage	=	$\frac{20}{40} \times (100 - 30) = 35\%$
Depreciated value	=	$0.65 \times 50,00,000 = \mathbf{Rs. 32,50,000}$
Salvage value	=	$0.3 \times 50,00,000 = \mathbf{Rs. 15,00,000}$



Exercise 1.16 :

A factory building with 30' roof height was constructed in 1974 at the cost of Rs. 5,40,000. Calculate the replacement cost (by book value method) in the year 1995 if prevalent building construction cost in 1974 and 1995 were Rs. 540/sq.m. and Rs. 5,900/sq.m. respectively.

$$\begin{aligned}
 \text{Historical cost 1974} &= \text{Rs. 5,40,000} \\
 \\
 \text{Replacement cost} &= \frac{\text{Historical cost in 1974}}{\text{Cost factor in 1974}} \times \text{cost factor in 1995} \\
 &= 5,40,000 \times \frac{5,900}{540} \\
 &= \text{Rs. 59,00,000/-}
 \end{aligned}$$

Exercise 1.17 :

A freehold site is rented out for 99 years to a developer at a ground rent of Rs. 1,00,000 per annum, net of outgoings. It is renewable. The lessee developer has constructed a building fetching an annual rent of Rs. 5,00,000/-. Value the freeholder's interest assuming an yield of 6%.

Value in the hands of lessor :

$$\begin{aligned}
 \text{Net income from ground rent} &= \text{Rs. 1,00,000} \\
 \text{Yield} &= 6\% \\
 \text{Years purchase} &= \frac{100}{6} = 16.67 \\
 \text{Value in the hands of lessor} &= 1,00,000 \times 16.67 \\
 &= \text{Rs. 16,67,000/-}
 \end{aligned}$$

Exercise 1.18 :

What is the amount of Rs. 5,000 at the end of 5 years @ 5% compound interest per annum?

$$\begin{aligned}
 \text{Amount A} &= P \left(1 + \frac{r}{100} \right)^n \\
 &= 5,000 \left(1 + \frac{5}{100} \right)^5
 \end{aligned}$$



8

$$\begin{aligned} &= 5,000 \times (1.05)^5 \\ &= 5,000 \times 1.276 \\ &= \text{Rs. 6,380/-} \end{aligned}$$

Exercise 1.19 :

In 2013, a valuer valued a residential property in a mofusil town for Rs. 68.56 lakhs. Assuming an annual escalation of 10% per year, what will be the value of the property as on 2018 by applying the formula?

$$\begin{aligned} P &= \text{Rs. 68.56 lakhs} \\ r &= 10\% \\ n &= 2018 - 2013 = 5 \text{ years} \\ \text{Amount A} &= P \left(1 + \frac{r}{100} \right)^n \\ &= 68.56 \left(1 + \frac{10}{100} \right)^5 \\ &= 68.56 \times (1.1)^5 \\ &= 68.56 \times 1.6105 \\ &= \text{Rs. 110.42 lakhs} \end{aligned}$$

Exercise 1.20 :

A new shop was purchased for Rs. 10,00,000 which was rented out for Rs. 5,000 per month. What is the yield?

$$\begin{aligned} \text{Capital value} &= \text{Rs. 10,00,000} \\ \text{Yearly rent} &= \text{Rs. 5,000} \times 12 = \text{Rs. 60,000} \\ \text{Yield} &= \frac{60,000}{10,00,000} \times 100 \\ &= \mathbf{6\%} \end{aligned}$$

Exercise 1.21 :

Value the freehold interest of a shop which has been let out for a rent of Rs. 1,00,000 (Net) per month. The rent is renewable. Yield is 5%.

$$\begin{aligned} \text{Yearly rent} &= 1,00,000 \times 12 = \text{Rs. 12,00,000} \\ \text{Net income} &= \text{Rs. 12,00,000} \end{aligned}$$



$$\begin{aligned}
 \text{Y.P. for a yield of 5\%} &= \frac{100}{5} = 20 \\
 \text{Capitalised value} &= 12,00,000 \times 20 \\
 &= \text{Rs. 2,40,00,000/-}
 \end{aligned}$$

Exercise 1.22 :

An industrial corporation has decided to lease 40,000 sq.ft. plot for an user for 60 years period. The land rate is 2,000 per sq.ft. Assuming a yield of 6%, what will be the monthly lease?

$$\begin{aligned}
 \text{Extent of land} &= 40,000 \text{ sq.ft.} \\
 \text{Market rate} &= \text{Rs. 2,000/sq.ft.} \\
 \text{Value of land} &= \text{Rs. 8,00,00,000} \\
 \text{Lease rent yield} &= 6\% \\
 \text{Annual rent} &= 8,00,00,000 \times \frac{6}{100} \\
 &= \text{Rs. 48,00,000} \\
 \text{Monthly rent} &= \frac{48,00,000}{12} = \text{Rs. 4,00,000/-}
 \end{aligned}$$

Exercise 1.23 :

A private trust had leased 10,000 sq.ft. plot for 99 years lease which can be renewed for further period. Fix lease rent if the land rate is Rs. 1,500/sq.ft. Assume lease rent as 8%.

$$\begin{aligned}
 \text{Extent of land} &= 10,000 \text{ sq.ft.} \\
 \text{Land rate} &= \text{Rs. 1,500/sq.ft.} \\
 \text{Land value} &= \text{Rs. 1,50,00,000} \\
 \text{Lease rent yield assumed} &= 8\% \\
 \text{Annual lease rent} &= 1,50,00,000 \times \frac{8}{100} \\
 &= 12,00,000 \\
 \text{Monthly lease rent} &= \text{Rs. 1,00,000/-}
 \end{aligned}$$

Exercise 1.24 :

Mr. X is selling 2,400 sq.ft. of plot to Mr. Y for a mutually agreed amount of Rs. 24,00,000. But in sale deed, they mention as Rs. 12,00,000/-. Guideline rate is Rs. 510/-. What is the intrinsic value?, What is the agreement value? & What is stamp duty value?



a.	Intrinsic value	=	Rs. 24,00,000/-
b.	Agreement value	=	Rs. 12,00,000/-
c.	Stamp duty value	=	2,400 x 510
		=	Rs. 12,24,000/-

Exercise 1.25 :

In the year April 2018, Mr. X has purchased plot of 2,400 sq.ft. for Rs. 24,00,000. In the same year (April to December) he has constructed a residential building for Rs. 18,00,000. He wants to sell. He quoted (Jan 2019) Rs. 48,00,000/-. The borrower approached the bank and the bank directed its panel valuer to inspect the site and give a report. The valuer certified as Rs. 45,00,000/- as on February 2019.

Now,

- 1) What is the cost of the property for 2018 - 19?
- 2) What is the price?
- 3) What is the value?

Answers :

- 1) Cost = 24,00,000 + 18,00,000 = **Rs. 42,00,000/-**
- 2) Price is **Rs. 48,00,000/-**
- 3) Value is **Rs. 45,00,000/-**

Exercise 1.26 :

A machine was purchased in year 1993 at the cost of Rs. 1,20,000/-. Cost Index factor for year 1993 was 37.50 with base year 1960 as 1.00. Calculate replacement cost of machine in year 2003 if Cost Index factor for year 2003 is 87.50 with same base year.

$$\begin{aligned}\text{Replacement cost (2003)} &= \frac{\text{Book value as on 1993}}{\text{Cost index factor for 1993}} \times \text{Cost Index factor for 2003} \\ &= 1,20,000 \times \frac{87.50}{37.50} \\ &= \text{Rs. 2,80,000/-}\end{aligned}$$

Exercise 1.27 :

A factory building was constructed in the year 1985 at the total cost of Rs. 25,50,000/-. Work out replacement cost of said factory building in year 2011 if Building Cost index in year 1985 and 2011 were 14.16 and 142 respectively with base year 1960 at 1.00.



$$\begin{aligned}
 \text{Replacement cost of factory in year 2011} &= \frac{\text{Book value cost}}{\text{Cost index for 1985}} \times \text{Cost Index factor for 2011} \\
 &= \frac{25,50,000}{14.16} \times 142 \\
 &= \text{Rs. 2,55,72,033/-}
 \end{aligned}$$

Exercise 1.28 :

A boeing repair shop hanger (Area 10,648 sq.m.) was constructed at Mumbai in year 1999 at the total cost of Rs. 68.00 crores. Find out its replacement cost in year 2011, if cost of construction of normal residential building was Rs. 8,600/sq.m. in 1999 and Rs.18,300/sq.m. in year 2011.

$$\begin{aligned}
 \text{Historic cost} &= \text{Rs. 68,00,00,000} \\
 \text{Present day replacement cost} &= \frac{68,00,00,000}{8,600} \times 18,300 \\
 &= \text{Rs. 1,44,69,76,744}
 \end{aligned}$$

Exercise 1.29 :

Building area = 1,200 m²; Age = 25 years ; Life = 50 years ; Salvage value = Nil ; Plot area = 2,000 m²; Land rate = Rs. 8,000/m²; Replacement cost of building = Rs. 25,000/m². What is the value?

$$\begin{aligned}
 \text{Land value} &= 2,000 \times 8,000 = \text{Rs. 1,60,00,000} \\
 \text{Depreciation percentage} &= \frac{25}{50} \times 100 = 50\% \\
 \text{Depreciated value of the building} &= 1,200 \times 25,000 \times 0.5 = \text{Rs. 1,50,00,000} \\
 \text{Total value} &= \underline{\underline{\text{Rs. 3,10,00,000}}}
 \end{aligned}$$

Exercise 1.30 :

Building cost for the residential building in Delhi, as per 01.01.1992 cost index as 100, was Rs. 2,810/sq.m. Now if Cost Index of Mumbai in 2005 is 250 as compared to 1992 base index 100, work out replacement cost for a residential building at Mumbai for the year 2005.



Flat rate for building cost for residential house in Mumbai for the year 2005 as per CPWD memorandum of 1992 will be :

$$\begin{aligned} &= \frac{2,810}{100} \times 250 \\ &= \text{Rs. 7,025/sq.m.} \end{aligned}$$

Exercise 1.31 :

A residential building was built in the year 1978 at an actual cost of Rs. 5,00,000/-. If Building Cost Index for year 1978 and 1998 were 125 and 1442 respectively, with 01.10.1976 as base index 100, work out replacement cost of the building for the year 1998.

$$\begin{aligned} \text{Replacement cost in 1998} &= \frac{5,00,000}{125} \times 1,442 \\ &= \text{Rs. 57,68,000/-} \end{aligned}$$

Exercise 1.32 :

An R.C.C. framed building at Delhi, in 01.01.1992 would cost Rs. 2,810/sq.m. If Cost Index of V.V. Nagar is 139 in 1997, calculate rate of cost of construction for similar R.C.C. building at V.V. Nagar for the year 1997.

$$\begin{aligned} \text{Rate of cost of construction in} &= \frac{2,810}{100} \times 139 \\ \text{1997 at V.V. Nagar :} & \\ &= \text{say Rs. 3,906/- per sq.m.} \end{aligned}$$

Exercise 1.33 :

In an apartment building, the sum of the plinth area of all the flats is 5,000 sq.ft. Common area is 500 sq.ft. The super plinth area is 5,500 sq.ft. What is percentage of common area in the apartment building?

$$\begin{aligned} \text{Sum of plinth area of all flats} &= 5,000 \text{ sq.ft.} \\ \text{Common area} &= 500 \text{ sq.ft.} \\ \text{Percentage of common area} &= \frac{500}{5,000} \times 100 = \mathbf{10\%} \end{aligned}$$



Exercise 1.34 :

An apartment building consists of 12 flats of super built up area 1,050 sq.ft. The net monthly rent of a flat is Rs. 9,000. The prevailing rate of return is 2.5%. Find the approximate value of one flat by rent capitalisation method.

Net monthly rent	=	Rs. 9,000
Yearly rent	=	Rs. 1,08,000
Rate of return	=	2.5%
Value	=	$1,08,000 \times \frac{100}{2.5}$
	=	Rs. 43,20,000/-

Exercise 1.35 :

In a plot of 3,600 sq.ft., an apartment building of GF + 2 is existing. 3 flats of 600, 800, 1000 are existing in one floor. What is the UDS of land for i) flat 600 sq.ft & ii) flat 1,000 sq.ft.?

Built up area	=	$(600 + 800 + 1000) \times 3$	=	7,200 sq.ft.
Plot area			=	3,600 sq.ft.
FSI	=	$7,200 / 3,600$	=	2
UDS	=	$600 / 2$	=	300 sq.ft.
	=	$1,000 / 2$	=	500 sq.ft.

* * *