

RVO ESTATE MANAGERS & APPRAISERS FOUNDATION



E-Notes

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Few words about CASE – STUDY EXERCISES

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The case study exercises have been included in qualifying examination for registered valuers of IBBI for two reasons:

1. These are acid tests for prospective valuers under IBC valuations in the practical field.
2. If the prospective valuers are practised in solving the various types of case study assignments, then after qualifying in the examination, they won't require much time to get into the profession successfully.

[In the Solution code option A corresponds to option 1 in the question; option B corresponds to option 2; option C corresponds to option 3 and option D corresponds to option 4. This is designed following question paper in the IBBI examination]

❖ CASE STUDY -1

A Shoe making plant was purchased in April 2015 and installation was completed in 2016. The production was achieved in year 2016. The plant is well maintained and is capable to run in three shifts. The management has decided to conduct valuation for the plant in the year 2019. The capitalized cost of acquisition by the company in 2016 was Rs. 150 crores. The schedule 2 of the Company Act 2013 defines the Useful Life for such plants as 15 years (NESD – no extra shift depreciation). The salvage value could be assumed as 10%. The total cost of setting up a similar capacity plant in 2019 is Rs. 220 crores and is 20% more efficient.

1. What is the net book value of the plant as on the date of valuation, considering SLM (straight line method) of depreciation NESD?

1. 124 cr 2. 123 cr 3. 126 cr 4. 130 cr

Hint. $150 - 150 \times 0.9 \times 3/15 = 123$

2. If the condition was not specified as NESD and the plant was running in two shifts, what would be the net book value of the plant as on the date of valuation?

1. 109.5 cr 2. 120 cr 3. 125 cr 4. 130 cr

Hint. $150 - (150 \times 0.9 \times 3/15) \times 150\% = 109.5$

3. What would be the depreciated replacement cost of the plant as on the date of valuation (NESD)

1. 170 cr 2. 175 cr 3. 180.40 cr 4. 170.40 cr

Hint. $220 - 220 \times 0.9 \times 3 / 15 = 180.40$ cr

4. What should be fair market value of the plant (NESD)

1. 164.32 cr 2. 154.32 cr 3. 180 cr 4. 144.32 cr

Hint. $180.40 \times 80\% = 144.32$ cr

5. what will be the depreciation for two shifts operation for valuation purpose

1. 59.4 cr 2. 69.4 cr 3. 79.4 cr 4. 56.4 cr

Hint. $220 \times 0.9 \times 3 \times 1.5 / 15 = 59.4$ cr

6. If the condition was not specified as NESD and the plant was running in two shifts, what would be the depreciated replacement cost of the plant as on the date of valuation?

1. 160.6 cr 2. 150.6 cr 3. 170.6 cr 4. 165.6 cr

Hint. $220 - 59.4 = 160.6$ cr

7. What will be the fair market value for two shift operation?

1. 138.48 cr 2. 148.48 cr 3. 128.48 cr 4. 154.48 cr

Hint. $160.6 \times 0.8 = 128.48$ cr

8. If the condition was not specified as NESD and the plant was running in three shifts, what would be the depreciation of the plant as on the date of valuation,

1. 58.2 cr 2. 59.2 cr 3. 69.2 cr 4. 79.2 cr

Hint. $(220 \times 0.9 \times 3) \times 200\% / 15 = 79.2$

9. What will be the depreciated replacement cost for three shifts operation for valuation purpose

1. 140.8 cr 2. 150.8 cr 3. 160.8 cr 4. 170.8 cr

Hint. $220 - 79.2 = 140.8$

10. What will be the fair market value for three shift operation?

1. 122.64 2. 312.64 3. 112.64 cr 4. 212.64 cr

Hint. $140.8 \times 0.8 = 112.64$

Solution code

- | | |
|------|-------|
| 1. B | 6. A |
| 2. A | 7. C |
| 3. C | 8. D |
| 4. D | 9. A |
| 5. A | 10. C |

❖ **CASE STUDY -2**

You have been requested to do valuation of a Plant which was purchased in April 2011 and installed in April 2012. Further details are as given below for April 2020, the date of valuation

Gross Book Value – Rs. 200 cr

Replacement Cost New – Rs. 215 cr

Cost Index in 2011 – 100

Cost Index in 2012 – 110

Cost index in 2020 – 120

Salvage value -10%

Plant Life – 20 years

1. What is the Reproduction cost new as on the date of valuation?

1. 215 cr 2. 218.18 cr 3. 240 cr 4. 200 cr

Hint. $120 \times 200 / 100 = 240$

2. What value would you ascribe based on Depreciated replacement cost?

1. 137.6 cr 2. 215 cr 3. 128 cr 4. 120 cr

Hint. $215 - 0.9 \times 215 \times 8 / 20 = 137.6$

3. What is the depreciation as on valuation date for valuation purpose on replacement cost basis?

1. 80.2 cr 2. 77.4 cr 3. 85.8 cr 4. 90 cr

Hint. $0.9 \times 215 \times 8 / 20 = 77.4$

4. What is the fair value if economy has fallen down by 15% as on date of valuation on replacement cost basis?

1. 117.89 cr 2. 116.96 cr 3. 120.65 cr 4. 121.98 cr

Hint . $137.6 \times 0.85 = 116.96$

5. What is the value of plant based on depreciated reproduction cost?

1. 150.5 cr 2. 151.9 cr 3. 153.6 cr 4. 152.8 cr

Hint. $240 - 0.9 \times 240 \times 8 / 20 = 153.6$

6. What is the depreciation based on depreciated reproduction cost basis?

1. 81.9 cr 2. 83.9 cr 3. 82.6 cr 4. 86.4 cr

Hint. $0.9 \times 240 \times 8/20 = 86.4$

7. What is the fair value if economy has fallen down by 15% as on date of valuation on reproduction cost basis?

1. 150.95 2. 130.56 3. 140.68 4. 141.52

Hint. $153.6 \times 0.85 = 130.56$

8. Final fair value considering lower of replacement and reproduction cost methods and no obsolescence?

1. 127.9 cr 2. 137.6 cr 3. 162.9 cr 4. 153.6 cr

Hint. Lower of 153.6 and 137.6 is 137.6

9. Final fair value considering average of replacement and reproduction cost methods and no obsolescence?

1. 172.9 cr 2. 154.5 cr 3. 165.8 cr 4. 145.6 cr

Hint. $(153.6 + 137.6) / 2 = 145.6$

10. What is the net book value as on the date of valuation?

1. 119 cr 2. 108 cr 3. 120 cr 4. 92 cr

Hint . $200 - 0.9 \times 200 \times 9/20 = 119$

Solution code

- | | |
|------|-------|
| 1. C | 6. D |
| 2. A | 7. B |
| 3. B | 8. B |
| 4. B | 9. D |
| 5. C | 10. A |

❖ CASE STUDY -3

You are given a valuation assignment to value a DG Set which is used by a cooperative society for emergency lighting requirement and the DG Set will be financed by bank during purchase by the society from Mr. Ram who had purchased the DG Set for Rs.30 lakh in January 2014.

Current cost of brand new DG Set after considering negotiation discount in new condition is Rs.33 lakh as per dealers of DG Sets.

Your survey indicated that: (i) recently similar DG Set with exactly similar fuel average and model was sold for Rs.17 lakh and (ii) asking prices for similar vehicles is Rs.18 lakh.(iii)Installation cost of such DG Set is 3 Lakhs Rs.

Based on your discussions with suppliers of DG Set and your own analysis, total economic life of DG set is considered as 10 years, if the DGset is used for commercial use similar to the subject DG Set under valuation.

Mr Ram informed Society that he would be required to spend about Rs.2 lakh for repairs to the injection pumps and replacement of worn out valves. Your discussions with the mechanic indicated that the quote for repairs given by MrRam is reasonable and DG Set sold recently did not require repairs as compared to the subject DG Set . Book value of the DG Set as at valuation date is Rs.15.75 lakh.

Your research has indicated that index in January 2014 are 111.6 and as at Valuation Date is 113.2.

1. Historical cost of DG Set (lakhs)

1. 30 2. 33 3. 18 4. 19

2. Replacement cost new of DG Set (lakhs)

1. 18 2. 30.43 3. 33 4. 19

3. What is the depreciation amount for replacement of DG Set by straight line method considering age of DG Set is 5 years and salvage value is 5%?

1. 12.54 2. 15.67 3. 6.27 4. 7.22

Hint. $0.95 \times 33 \times 2 / 10 = 6.27$ L

4. What is the depreciation of old DG Set considering cost of repairs (lakhs) for valuation?

1. 14.54 2. 8.27 3. 17.67 4. 9.22

Hint. $6.27 + 2 = 8.27$ L

5. What is the depreciated replacement cost of DG Set without considering repair costs(lakhs) ?

1. 26.73 L 2. 19.33 3. 16.5 4. 18.25

Hint. $33 - 6.27 = 26.73$ L

6. What is the depreciated replacement cost of DG Set after considering repair costs?

1. 18.46 2. 16.87 3. 9.16 4. 24.73 L

Hint. $33 - 8.27 = 24.73$ L

7. What is the fair Market Value of DG Set for Bank Finance without considering additional repairs

but considering that currently available DG Set is 10% more energy efficient than the DG Set which is under valuation ?

1. 24 2. 15.6 3. 22.26 4. 16

Hint. $26.73 \times 0.9 = 24$ L

8. What is the fair Market Value of DG Set for Bank Finance considering additional repairs but considering that currently available DG Set is 10% more energy efficient than the DG Set which is under valuation ?

1. 15.45 2. 16.5 3. 13.8 4. 22.26

Hint. $24.73 \times 0.9 = 22.26$ L

9. What is the replacement value of the DG Set?

1. 20 2. 24 3. 27 4. 28

Hint. $17 + 3 = 20$

10. What is the reproduction cost new of the DG set as on date valuation?

1. 31.75 2. 30.43 3. 40.52 4. 61.71

Hint. $30 \times 113.2 / 111.6 = 30.43$

Solution code

- | | |
|------|-------|
| 1. A | 6. D |
| 2. C | 7. A |
| 3. C | 8. D |
| 4. B | 9. A |
| 5. A | 10. B |

❖ CASE STUDY -4

A company ABC is in the manufacturing of steel sections, used for construction of industrial sheds and general fabrications. ABC was set up with a state of the art, German Steel Plant, in mineral rich area with availability of minerals for next 25 to 30 years for this plant. In April 2010, company ABC invested (i) Rs 95.0 crore in PLant and Machinery (ii) Rs 10.0 crore in erection and commissioning of plant (iii) Spent Rs 1.0 crore on foreign trips for finalizing and inspection of machinery and Rs 1.5 crore for transportation of all plant, machinery and equipment to site (iv) Incurred an expenditure of 25.0 lakhs on inauguration of the plant and 50.0 lakhs on administrative and other expenses. The company started commercial operation on 10TH April ,2012 . After successful operation for few years the promoters approached bank for finance in March 2017 for doubling the capacity. You are assigned by the banker to value the ABC plant to find out Fair market value of the plant and machinery installed in the premises. After the initial discussion with the promoter and receipt of FAR, you visit the plant and hold discussion

with plant production and maintenance personnel. After physical inspection, the following information is gathered by you: -

1. Plant and machinery is in good and operating condition.
 2. raw material quality is very good and hence more people are planning to set up plants.
 3. Economic life of plant and machinery is 25 years.
 4. Similar plant made in china can be installed with all inclusive cost of Rs 98 crores.
 5. The cost index in April 2010 was 120 , in October 2012 was 135 and in March 2017 is 175 ,
- You are requested by banker to do the valuation of plant and machinery as on 31st March 2017. S.V = 10%

1. What is the acquisition cost of plant and machinery in April 2010?

1. 106.5 cr 2. 107.5 cr 3. 108 cr 4. 108.25 cr

Hint. $95 + 10 + 1 + 1.5 + 0.25 + 0.50 = 108.25$

2. What is the age of plant and machinery as on 31st March 2017?

1. 7 yrs 2. 5 yrs 3. 4.5 yrs 4. 5.5 yrs

3. What is the net book value of plant and machinery as on date of valuation using SLM with 10% salvage value on valuation?

1. 80.97 cr 2. 90.09 cr 3. 90.27 cr 4. 79.69 cr

Hint. $108.25 - 0.9 \times 108.25 \times 7/25 = 80.97$

4. What is the total book depreciation of plant and machinery on the date of valuation in % of the acquisition cost?

1. 19.80% 2. 16.20% 3. 18% 4. 25.20%

Hint. $(0.9 \times 108.25 \times 7/25) / 108.25 = 25.2 \%$

5. What is the Reproduction cost new as on the date of valuation?

1. 154.42 cr 2. 137.38 cr 3. 155.87 cr 4. 138.54 cr

Hint. $175 \times 95/120 = 138.54$

6. What is the depreciated cost of replacement of plant and machinery as on date of valuation?

1. 80.36 cr 2. 90.3 cr 3. 82.1 cr 4. 78.5 cr

Hint. $98 - 0.9 \times 98 \times 5/25 = 80.36$

7. What is the depreciated cost of reproduction of plant and machinery as on date of valuation?

1. 102.95 cr 2. 105.82 cr 3. 113.60 cr 4. 110.82 cr

Hint. $138.54 - 0.9 \times 138.54 \times 5/25 = 113.60$

8. What is the fair value of the plant if the equivalent new China make plant is 5% more efficient. ?

1. 68.86 cr 2. 76.34 cr 3. 70.02 cr 4. 75.71 cr

Hint. $80.36 \times 0.95 = 76.34$

9. What is the fair value of the plant based on reproduction cost new if margin for economic recession and restriction is 20% in Mar 2017?

1. 84.87 cr 2. 81.56 cr 3. 83.76 cr 4. 90.88 cr

Hint. $113.60 \times 0.8 = 90.88$

10. Age of plant as on start date of commercial operation?

1. 2 yrs 2. 2.5 yrs 3. 3 yrs 4. 3.5 yrs

Solution code

- | | |
|------|-------|
| 1. D | 6. A |
| 2. A | 7. C |
| 3. A | 8. B |
| 4. D | 9. D |
| 5. D | 10. A |

❖ CASE STUDY -5

Two lathe machines were in a small factory and those were asked to be valued by market approach by market quotation. The details of the lathe machines were given as follows:-

1. LATHE M/C NO 1 –

Admit between centre (ABC) = 1425 mm

Centre height = 254 mm

Age = 5 years ,

2. LATHE M/C NO 2 --

Admit between centre (ABC) = 1950 MM

Centre height= 254 mm

Age = 10 years

After exploring 2nd hand LATHE M/C market , it was revealed that sales quotations for similar above Lathe M/C were available exactly to the specification , but age of the available lathe machines were different as follows :-

LATHE M/C NO 1 –

ABC= 1425 MM

Centre height=254 mm

Age = 8 years

Asking price = Rs 50000/

2. LATHE M/C NO 2 –
 ABC= 1950 MM
 Centre height=254 mm
 Age = 6 years
 Asking price = Rs 80000/

The valuer visits the Two lathe machines. Which are to be valued. The operator was present at the shop and showed the valuer by running the two machines one by one. The valuer noted the condition of the two machines as follows:-

EFL(expected future life) of M/C 1 = 12 years

EFL of M/C 2 = 8 years

The following adjustment figures were available to the valuer for 2nd Hand machines:-

1. The positive factor of machine for age more than 2 years = 20%
2. The negative factor of machine for age more than 3 years = 15%

The economic useful life of the machines as per manufacture's catalogue available at site was 12 years.

1. What is the adjusted sales price of the machine - 1 (replacement value)?
 54000 60000 68000 72000
 Hint. $50000 \times 120\% = 60000$

2. What is the adjusted sales price of the machine -2 (replacement value)?
 68000 64000 60000 50000
 Hint. $80000 \times 85\% = 68000$

3. What is the market value of machine 1?
 42000 44000 45000 52000
 Hint. $60000 \times 12 / (12+5) = 42000$

4. What is the market value of machine 2?
 39920 50000 52000 30222
 Hint. $68000 \times 8 / (8+10) = 30222$

5. What is the depreciation of machine 1?
 15000 20000 18000 28000
 Hint . $60000-42000 = 18000$

6. What is the depreciation of machine 2?
 1. 39090 2. 37778 3. 40040 4. 37070
 Hint. $68000-30222=37778$

7. What is the EFL/(EFL+AGE) factor for m/c 1
1. 0.8 2. 0.7 3. 0.6 4. 0.65
Hint. $12/(12+5) = 0.7$

8. What is the EFL/(EFL+AGE) factor for m/c 2
1. 0.54 2. 0.64 3. 0.44 4. 0.74
Hint. $8/(8+10) = 0.44$

9. What will be the fair value of M/c 1 if we consider 10% downfall of economy due to Pandemic?
1. 36000 2. 37800 3. 38800 4. 40000
Hint. $42000 \times 0.9 = 37800$

10. What will be the fair value of M/c 2 if we consider 10% downfall of economy due to Pandemic?
1. 29968, 2. 23356, 3. 25568, 4. 27200
Hint. $30222 \times 0.9 = 27200$

Solution code

1. B 6. B
2. A 7. B
3. A 8. C
4. D 9. B
5. C 10. D



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