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Program BE (Electrical)

Semester 8th

Date 22/06/2020

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Q.1
a)

①

As we know

$$P = F \left(\frac{1}{1+i} \right)^n$$

Putting the values

$$P = 100 \text{ million} \left(\frac{1}{1+0.08} \right)^6$$

$$P = 100000000 \left(\frac{1}{(1.08)} \right)^6$$

$$P = 100000000 (0.9259)^6$$

$$P = 100000000 (0.6302)$$

$$P = 63020000$$

Q(1)
b)

As we know

$$P = A \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right]$$

$$100000000 = 10000000 \left[\frac{(1+0.06)^n - 1}{0.06(1+0.06)^n} \right]$$

$$\frac{100000000}{10000000} = \left[\frac{(1+0.06)^n - 1}{0.06(1+0.06)^n} \right]$$

$$10 = \left[\frac{(1+0.06)^n - 1}{0.06(1+0.06)^n} \right]$$

$$10 \times 0.06 \times (1+0.06)^n = (1+0.06)^n - 1$$

$$0.6(1+0.06)^n = (1+0.06)^n - 1$$

$$(1+0.06)^n - 0.6(1+0.06)^n - 1 = 0$$

OR

$$(1+0.06)^n - 0.6(1+0.06)^n = 1$$

$$(1.06)^n - 0.6(1.06)^n = 1 \quad (3)$$

$$(1.06)^n [1 - 0.6] = 1$$

$$(1.06)^n (0.4) = 1$$

$$(1.06)^n = \frac{1}{0.4}$$

$$(1.06)^n = 2.5$$

Taking \ln

$$\ln 2.5 = n * \ln(1.06)$$

$$0.916 = n * 0.0583$$

$$n = \frac{0.916}{0.0583}$$

$$n = 15.7 \text{ year}$$

$$N = 15.7 \text{ year}$$

(4)

Q.2

a)

$A = 30 \text{ million}$

$i = 15\% \Rightarrow 0.15$

$N = 5 \text{ year}$

we know that

$$P = A \left[\frac{(1+i)^n - 1}{i (1+i)^n} \right]$$

putting the value

$$P = 30000000 \left[\frac{(1+0.15)^5 - 1}{0.15 (1+0.15)^5} \right]$$

$$P = 30000000 \left[\frac{(1.15)^5 - 1}{0.15 (1.15)^5} \right]$$

$$P = 30000000 \left[\frac{1.0114}{0.15 (1.15)^5} \right]$$

$$P = 30000000 \left[\frac{1.0114}{0.3017} \right]$$

$$P = 30000000 [3.3522]$$

$$P = 100566000$$

(5)

Q.2

Part b)

$$A = 10000$$

$$i = 5\%$$

$$N = 15 \text{ year}$$

Sol:-

$$F = A \left[\frac{(1+i)^N - 1}{i} \right]$$

Putting value

$$F = 10000 \left[\frac{(1+0.05)^{15} - 1}{0.05} \right]$$

$$F = 10000 [21.5786]$$

$$F = 215786$$

Q.3

a)

property is depreciable if it meet the following basic requirement

→ It must be used in business or held to produce income

→ It must have useful life and the life must be longer than one year

→ It must be something that wear out, decay gets used up, become obsolete or loss value from natural causes.

Q.3

b)

As we know

From

$$d_k = (B - SVN) \left[\frac{2(N - K + 1)}{N(N+1)} \right]$$

$$B_{VK} = B - \left[\frac{2(B - SVN)}{N} \right] K + \left[\frac{B - SVN}{N(N+1)} \right] K(K+1)$$

putting value for sample ①

$$d_1 = 400000 \left[\frac{2(10+1-1)}{10(10+1)} \right]$$

$$d_1 = 400000 \left[\frac{2(10)}{10(11)} \right]$$

$$d_1 = 400000 \left[\frac{20}{110} \right]$$

$$d_1 = 400000 (0.1818)$$

$$d_1 = 72720$$

(8)

$$BV_1 = 400000 - \left[2 \left(\frac{400000}{10} \right) \times 1 \right] + \left[\frac{400000}{10(11)} \right] 1(1+1)$$

$$400000 - [80000] + \left[\frac{400000}{110} \right] \times 2$$

$$400000 - 80000 + 7272.7$$

$$327272.7$$

For d_2

$$d_2 = 400000 \left[\frac{2(10-2+1)}{10(10+1)} \right]$$

$$d_2 = 400000 \left[\frac{2(8+1)}{10(11)} \right]$$

$$d_2 = 400000 \left[\frac{2(9)}{110} \right]$$

$$d_2 = 400000 \left[\frac{18}{110} \right]$$

$$d_2 = 65454.5$$

$$BV_2 = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 2 + \left[\frac{400000}{10(11)} \right] 2 \times 3$$

$$= 400000 - 80000 \times 2 + \left[\frac{400000}{110} \right] \times 6$$

$$\begin{aligned}
 &= 400000 - 160000 + 3636.36 \times 6 \\
 &= 400000 - 160000 + 21818.16 \\
 &= 261818.16
 \end{aligned}$$

$$d_3 = 400000 \left[\frac{2(10-3+1)}{10(10+1)} \right]$$

$$= 400000 \left[\frac{2(8)}{10(11)} \right]$$

$$= 400000 \left[\frac{16}{110} \right]$$

$$= 58181.8$$

$$BV_3 = 400000 - \left[2 \left(\frac{400000}{10} \right) \times 3 + \left[\frac{400000}{10(11)} \right] 3 \times 4 \right]$$

$$BV_3 = 400000 - 240000 + 43636.3$$

$$BV_3 = 203636.3$$

$$d_4 = 400000 \left[\frac{2(10-4+1)}{10(10+1)} \right]$$

$$= 400000 \left[\frac{14}{110} \right]$$

$$= 400000 [0.127272]$$

$$= 50909.0909$$

$$BV_4 = 400000 + \left[2 \left(\frac{400000}{10} \right) \times 4 + \left(\frac{400000}{110} \right) \right]$$

4x5

$$= 400000 + 320000 + 72727.2727$$

$$= 792727.2727$$

$$d_5 = 400000 \left[\frac{2(10-5+1)}{10(10+1)} \right]$$

$$= 400000 \left[\frac{12}{110} \right]$$

$$= 43636.36$$

$$BV_5 = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 5 + \left[\frac{400000}{110} \right] 5 \times 4$$

$$= 400000 - 400000 + 72727.27$$

$$= 72727.27$$

(11)

$$d_6 = 400000 \left[\frac{2(10-6+1)}{10(11)} \right]$$

$$d_6 = 400000 \left[\frac{10}{110} \right]$$

$$= 400000 [0.09090]$$

$$= 36363.63$$

$$BV_6 = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 6 + \left[\frac{400000}{110} \right] \times 6 \times 7$$

$$= 400000 - 480000 + 152727.27$$

$$= 72727.27$$

$$d_7 = 400000 \left[\frac{2(10-7+1)}{10(11)} \right]$$

$$= 400000 \left[\frac{8}{110} \right]$$

$$= 400000 (0.0727272)$$

$$= 29090.90$$

$$BV_7 = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 7 + \left[\frac{400000}{110} \right] \times 7 \times 8$$

$$= 400000 - 560000 + 203636.36$$

$$= 43636.36$$

$$d_8 = 400000 \left[2 \frac{(10-8+1)}{10(11)} \right]$$

$$= 400000 (0.05454)$$

$$= 21818.18$$

$$BV_8 = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 8 + \left[\frac{400000}{110} \right] \times 8 \times 9$$

$$= 400000 - 640000 + 261818.18$$

$$= 21818.18$$

$$d_9 = 400000 \left[2 \frac{(10-9+1)}{(11)(10)} \right]$$

$$= 400000 \left[\frac{4}{110} \right]$$

$$= (400000)(0.0363636)$$

$$= 14545.45$$

$$BV_9 = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 9 + \left[\frac{400000}{110} \right] \times 9 \times 10$$

$$= 400000 - 720000 + 327272.7272$$

$$= 7272.72$$

(13)

$$d_{10} = 400000 \left[2 \frac{(10-10+1)}{10(11)} \right]$$

$$= 400000 \left[\frac{2(1)}{110} \right]$$

$$= 400000 \left[\frac{2}{110} \right]$$

$$= 7272.72$$

$$BV_{10} = 400000 - \left[2 \left(\frac{400000}{10} \right) \right] \times 10 + \left[\frac{400000}{110} \right] \times 11$$

$$= 400000 - 800000 + 400000$$

$$BV_{10} = 0$$

→ Depreciation and book value amount
For each year.

EOY's	dk	BVik
0	0	400000
1	72720	327272.7
2	65454.5	261818.16
3	58481.8	203636.3
4	50909.09	792727.27
5	43636.3	72727.2
6	36363.6	72727
7	29090.90	43636.36
8	44545.4	7272.9
10	72727.27	0

Q.4

a)

Given that gross income & expense as stated
income tax rate = 40%

Find net income

consider the purchase of machine to have
made at the end of year zero, which also
the beginning of year one

Items	Amount
Gross income (revenues)	= \$ 50000
cost of good sold	= \$ 20000
Depreciation	= \$ 4000
operating expense	= \$ 6000
Taxable income	= \$ 20000
Taxes (40%)	= \$ 8000
Net income	= \$ 12000

Q.4

(16)

(b)

Benefit:

- * with this proposed park public primary health will improve
- * that a recreational activity will be added in the city of abbotabad.
- * local people and also people from outside will pay visit to this park thus increasing the in term of financial activities

Cost:

A land already available so the part building cost will be low and also govt is planning to issue bond so the cost won't big issue. they can manage it in low cost

Disbenefit

If not properly managed they can damage the nature & issuance of bond might be an issue which is considerable factor.

Q.5

(15) (17)

We know that we have determine the equivalent AW of all cost at the MRR of 12% year to earn exactly 12% the annual related ~~year~~ income adjusted for 90% occupancy, must be the AW of cost

$$\text{initial investment cost} = \$50000 + \$225,000$$

$$\Rightarrow \$275,000$$

$$\text{Taxes \& insurance per year} \Rightarrow 0.1 \times 275000$$

$$\Rightarrow 27500$$

up keep/year

$$\Rightarrow \$30(12 \times 30)(0.9)$$

$$= \$9720$$

CR cost/year

$$\$275000 (A/P \ 12\%, 20) - \$50,000 (A/F, 12\%$$

20)

(18)

$$(A/P, 12\% \ 20) = \left[\frac{i(1+i)^n}{(1+i)^n - 1} \right] 275000$$

$$\text{putting value} = \left[\frac{12(1+0.12)^{20}}{(1+0.12)^{20} - 1} \right] \times 275000$$

$$= \left[\frac{1.1576}{8.6463} \right] \times 275000$$

$$= \$ 36818.06$$

$$50000 (A/F, 12\%, 20)$$

$$= 50000 \left(\frac{i}{(1+i)^n - 1} \right)$$

$$= 50000 \left[\frac{0.12}{(1.12)^{20} - 1} \right]$$

$$= 50000 \left[\frac{0.12}{8.6462} \right]$$

$$= \$ 693.9$$

(29)

$$\Rightarrow \$ 36123$$

Equivalently AW of cost =

$$\Rightarrow -27500 - 9720 - 36123$$

$$\Rightarrow -73342$$

the monthly rental amount

R is

$$= \$ 73343 / ((12 \times 30)(0.9$$

$$= \$ 226.3$$