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① Question # 1

Part (A).

Answer:-

Solution:-

We know that.

$$P = F(1/i + i)^n \rightarrow \textcircled{1}$$

So putting values in eq. (1)
we get.

$$P = 100m (1/1 + 0.08)^6$$

$$P = 100m (1 + 0.08)^6$$

$$P = 100m (1.08)^6$$

$$P = 100m (34.0122)$$

$$P = 3401.22 \text{ million.}$$

$$\boxed{P = 3401.22 \text{ Million}} \text{ Answers.}$$

Question # 1.

Part (B)

Answer:-

$$P = A[(1+i)^n - 1]i(1+i)^n$$

$$10 = (1.06)^n - 11.006(1.06)^n$$

$$10 \times 0.06(1.06)^n = (1.06)^n - 1$$

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

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

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

$$110.4 = (1.06)^n$$

$$2.5 = (1.06)^n$$

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

$$0.916 = n \times 0.0583$$

$$N = 0.916 \div 0.0583$$

$$N = 15.7 \text{ years.}$$

⇒

① Question # 2 .

Part (a).

Sol:-

Given:-

$$\begin{cases} A = 30 \text{ million} & , N = 5 \text{ years.} \\ i = 15\% \end{cases}$$

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

$$P = 30000000 \left(\frac{1.0113}{0.3017} \right)$$

$$P = 30000000 (3.5200)$$

$$\boxed{P = 105,600,000} \quad \text{Ans}$$

===== X ===== X ===== X =====

⇒

① Question # 2 .

Part (b).

Answer:-

$$\text{Solution:- } A = 10,000 \quad , \quad i = 5\% \quad , \quad N = 15$$

$$\begin{cases} \end{cases}$$

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

$$F = 10,000 \left[\frac{(1+0.05)^{15} - 1}{0.05} \right]$$

$$= 10,000 [21.57]$$

$$= \boxed{215785.63} \quad \text{Ans}$$

Question # 3.

Part (a).

Answer:-

Depreciation is the decrease in value of physical properties with the passage of time & use.

A non cash expense that reduce the value of an assets as a result of wear & tear, age, or absolute. Most assets lose their value over time (in other words, they depreciate), and must be replaced once the end of their useful life is reached. There are several accounting method that are used in order to write off an assets depreciation cost over the periods of its useful life. Because it is a non-cash expense, depreciation lowers the company reported earnings while increasing free cash flow.

Property is depreciable if it meets the following basic requirements.

- It must be used in business or held to produce income.
- It must have a useful life and the life must be longer than one year.
- It must be something that wears out, decay, gets used up, become obsolete or loss value from natural causes.

Depreciable property is tangible or intangible. It includes two main types called personal property or real property.

personal property:- Machinery, vehicles equipment furniture & similar items.

Real Property - land and anything erected on it, or attached to it - land itself is not depreciable because it does not have a determinable life. Intangible property - copyright, patent, or franchise.

Book value :-

The worth of a depreciable property as shown on the accounting records of a company. It is original cost basis of the property, including any adjustments, less all allowable depreciation or amount of capital remains invested in property & must be recovered in the future through accounting process.

(Book value) $K =$ adjusted cost basis

$$= \sum_{j=1}^n (\text{Depreciation deduction})$$

K is for no. of years.

$$x \longleftarrow \text{—————} x \longleftarrow \text{—————}$$

Question #3.
Part (B)

Solution:- We know that from.

$$dU = (B - sV_N) \left[\frac{2(N - k + 1)}{N(N + 1)} \right]$$

$$BU_k = B - \left[\frac{2(B - sV_N)}{N} \right] k + \left[\frac{(B - sV_N)}{N(N + 1)} \right] k(k + 1)$$

Putting values from Sample 1

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

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

$$d_1 = 400000 (0.1818)$$

$$d_1 = 72720$$

$$BU_1 = 400000 - \left[\frac{2(400000) \times 1}{10} \right] + \left[\frac{400000}{10(11)} \right] 1(1 + 1)$$

$$400000 - [800000] + \left[\frac{400000}{110} \right] \times 2$$

$$400000 - 800000 + 7272.7$$

$$\Rightarrow 327272.7$$

For d_2

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

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

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

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

$$d_2 = 65454.5$$

 $BV_2 =$

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

$$400000 - 800000 \times 2 + \left[\frac{400000}{110} \right] \times 6$$

$$400000 - 160000 + 3636.36 \times 6$$

$$400000 - 160000 + 21818.16$$

$$\Rightarrow 261818.16$$

Ans.

Question # 4.

Part (A)

Answer.

Solutions:-

Given = Gross income & expenses as stated;

Income tax rate = 40%.

find:- Net income

Consider the purchase of the machine to have been made at the end of year zero, which is also the beginning of year one.

Item	Amount
Gross income expenses.	\$ 50,000
Cost of good sold	\$ 20,000
Depreciation	\$ 20,000
operating expenses	\$ 6000
Taxable income	\$ 20,000
Taxes (40%)	\$ 8000
Net income	\$ 12000

Question # 4.

Part (b).

Answer:-

Solution:-

Benefits:- Improvement of the image of the area of Abbotabad city.

Potential to attract conferences & conventions to abbotabad city.

Potential to attract professional sports franchises to the city.

Revenues from rental of the facility.

Use of facility for civic events.

Costs:- Architectural design of the facility, construction of the facility Design & construction of parking facility, facility operating & maintenance cost, Insurance cost.

Disbenefits:- Loss of use of portion of the park, bike path natural trails, & the pond.

Loss of wildlife habitat in urban area.

Question # 5.

Answer:-

Sol:-

First to determine the equivalent AW of all cost at the MARR of 12%/year. To earn exactly 12% annual rental income, adjustment 90% occupancy, must equal the AW of costs

initial investment cost.

$$= 50000 + 225,000 = 275000$$

tax and insurance per year.

$$= 0.1 (\$ 275000) = 27500$$

$$\text{up keep/year} = 30 (12 \times 30) 0.9 = 9720$$

$$\text{CR cost/year} : 275000 (A/P, 12\%, 20) - 50,000 (A/F, 12\%, 20) \\ = 36,123$$

(Assume that the investment in land is covered at year of 20)

$$\text{Equivalent AN (of costs)} = -27500 - 9720 - 36,123 \\ = -73343$$

Therefore minimum annual rental required equals 73,343 and with annual compounding the monthly rental amount R is

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

$$= 226.36$$