



# **Victoria University of Bangladesh**

Mid Assignment, Fall Semester 2022

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**Batch: 46<sup>th</sup>**

**Course Title: MANAGEMENT ACCOUNTING**

**Course code : ACT 217|**

**Program : BBA**

ACT-217

①

Ans. to the Q. No. ①

The time value of money (TVM) is the concept that a sum of money is worth more now than the same sum will be at a future date due to its earnings potential in the interim. The time value of money is a core principle of finance. A sum of money in the hand has greater value than the same sum to be paid in the future. The time value of money is also referred to as the present discounted value. Investors prefer to receive money today rather than the same amount of money in the future because a sum of money once invested, grows over time. For example, money deposited into a savings account earns interest. Over time the interest is added to



the principal, earning more interest.  
That the power of compounding interest.  
The most fundamental formula for the time value of money takes into account the following: the future value of money of money the present value of money the interest rate the number of compounding periods per year and the number of years.

There are four main types of cash flows related to time value of money Future value of a lump sum, future value of an annuity, Present value of a lump sum, and present value of an ~~ann~~ annuity. Tables, financial calculators and spreadsheets are good tools for calculating time value of money.

Ans: to: the: Q. no: (2)

(3)

① EAR: An example of an effective annual interest rate

$$1. \text{EAR} = \left(1 + \left(\frac{\text{nominal rate}}{\text{number of compounding periods}}\right)^n\right)^{\text{number of compounding periods}} - 1.$$

2. For Bank A, this would be:

$$10.47\% = \left(1 + \left(\frac{10\%}{12}\right)\right)^{12} - 1.$$

3. For Bank B, this would be:

$$10.36\% = \left(1 + \left(\frac{10.1\%}{12}\right)\right)^{12} - 1.$$

② Discounting: Discounting is the process of converting a value received in a future time period to an equivalent value received immediately. For example, a dollar received 50 years from now may be valued less than a dollar received today. Discounting measures this relative value.



④

③ Compounding: In grammar, compounding also called composition, is when two or more words are combined together to form a new word. For example, the word underground is a combination of the words under and ground.

④ Annuity: An ordinary annuity is a series of regular payments made at the end of each period, such as monthly or quarterly. In an annuity due, by contrast, payments are made at the beginning of each period. Consistent quarterly stock dividends are one example of an ordinary annuity monthly rent is an example of an annuity due.

## ⑤ Amortization Schedule:

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How to Calculate Amortization of Loans. You'll need to divide your annual interest rate by 12. For example, if your annual interest rate is 3%. then your monthly interest rate will be 0.25% (0.03 annual interest rate  $\div$  12 months). You'll also multiply the number of years in your loan term by 12.



Ans: to: Que: Q.No: (3)

(6)

Solution,

$$\text{Future value} = P_v. (1+i)^n$$

where,

$$\text{Present value (P}_v\text{)} = \$ 5,00,000$$

$$\text{interest rate (i)} = 8\% = .08$$

$$\text{The number of year (n)} = 10 \text{ years}$$

$$\begin{aligned} \text{Future value (F}_v\text{)} &= \$ 5,00,000 (1+0.08)^{10} \\ &= \$ 500,000 (1.08)^{10} \\ &= \$ 500,000 \times 1.967 \\ &= \$ 983841.67 \end{aligned}$$

So, after 10 years of investment at 8% interest, Mr. JinPis investment would be worth \$ 9,83,841.67

Ans: to: the: Q: No: (4)

(78)

Solution -

$$\text{Payback period (PBP)} = \frac{\text{CF. C initial investmt}}{\text{CF + (cash flows)}}$$

given,

For company A:

$$\text{initial investment (CF}_0\text{)} = \$ 300,000$$

$$\text{cash flows (CF}_+\text{)} = \$ 100,000$$

$$\text{Payback period (PBP)} = \frac{\$ 300,000}{\$ 100,000}$$

$$= 3 \text{ years}$$

For company B:

$$\text{intitial investment (CF}_0\text{)} = \$ 400,000$$

$$\text{cash flows (CF}_+\text{)} = \$ 1,05,000$$

$$\text{Pay-back period (PBP)} = \frac{\$ 400,000}{\$ 1,05,000}$$