

Chapter 4

Basics of Personal Financial Management



Section I

Time Value of Money

1. Under the concept of time value of money, _____ .
 - A. the later the money is received, the larger the present value of money
 - B. the earlier the money is received, the larger the present value of money
 - C. the earlier the money is received, the smaller the present value of money
 - D. the value of money is the same regardless of time

2. Which of the following is the meaning of compounding?
 - A. the present value of money
 - B. the future value of money
 - C. the calculation process of turning present values into future values
 - D. the calculation process of turning future values into present values

3. Which of the following is the meaning of discounting?
 - A. the present value of money
 - B. the future value of money
 - C. the calculation process of turning present value into future value
 - D. the calculation process of turning future value into present value

4. If Mr. Chan deposits \$100 into a bank for one year at an annual interest rate of 5% compounded yearly, what is the present value of the deposit?
 - A. \$95
 - B. \$100
 - C. \$105
 - D. \$110

5. Refer to Question 4, what is the future value of the money deposited after one year?
 - A. \$95
 - B. \$100
 - C. \$105
 - D. \$110

6. Suppose Mr. Chan bought \$5,000 bonds and one year later he got a return of \$6,000. Which of the following statements is correct?
- A. Interests are not provided by this \$5,000 bonds investment.
 - B. Time value of money is applied in the above case.
 - C. Compounding is not applied in the above case.
 - D. Discounting is applied in the above case.
7. Suppose Mr. Lee deposits \$2,000 into the bank for one year with an annual interest rate of 10% compounded yearly, what is the amount he can get after one year?
- A. \$1,800
 - B. \$2,000
 - C. \$2,200
 - D. \$2,400
8. Suppose Mr. Chan deposits \$300 into the bank for three years with an annual interest rate of 8% compounded yearly, what is the total amount he can get when the deposit matures? (Correct to the nearest dollar)
- A. \$238
 - B. \$257
 - C. \$350
 - D. \$378
9. Suppose Mr. Chan deposits \$5,000 into the bank for three years with an annual interest rate of 5% compounded yearly, what is the total amount he can get after three years? (Correct to the nearest dollar)
- A. \$5,250
 - B. \$5,513
 - C. \$5,788
 - D. \$6,078
10. Suppose Terrence saves \$ x in his bank account at the beginning of the first year and then saves a double amount at the beginning of second year. Given the annual interest rate is 10% compounded yearly, what is the value of x if he wants to obtain \$300,000 at the end of the second year? (Correct to the nearest dollar)
- A. 43,988
 - B. 87,977
 - C. 131,965
 - D. 154,759

11. There is no difference between nominal and effective rates of return when interest is compounded _____ .
- A. weekly
 - B. monthly
 - C. quarterly
 - D. yearly
12. Which of the following is/are correct for effective rate of return?
- (1) Effective rate of return means the actual rate of return from a given interest rate and a given compounding period.
 - (2) Effective rate of return is less useful than the nominal rate of return in decision making.
 - (3) Effective rate of return is equal to the nominal rate of return.
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only
13. "Effective rate of return must be greater than nominal rate of return." This statement is _____ .
- A. correct as effective rate of return is given by yearly compounding
 - B. correct by mathematical calculations
 - C. incorrect as effective rate of return can be the same as nominal rate of return if the interest is compounded yearly
 - D. incorrect as effective rate of return may be smaller than nominal rate of return
14. If the nominal rate of return is 2% per annum compounded quarterly, what is the effective rate of return? (Correct to 2 decimal places)
- A. 0.50%
 - B. 2.02%
 - C. 2.55%
 - D. 8.24%
15. If the nominal rate of return is 4% per annum compounded monthly, what is the effective rate of return? (Correct to 2 decimal places)
- A. 0.33%
 - B. 4.07%
 - C. 12.68%
 - D. 60.10%

16. If the effective rate of return is 10%, what is the nominal rate of return if it is compounded yearly?
- A. 0.8%
 - B. 10%
 - C. 20%
 - D. cannot be determined
17. Which of the following is the difference between effective and nominal rates of return?
- A. The former considers the effect of inflation while the latter does not.
 - B. The former is affected by the interest rate while the latter is not.
 - C. The former includes the interest reinvested during a year while the latter does not.
 - D. The former is less widely used in daily life than the latter.
18. Which of the following is the correct definition of net present value (NPV)?
- A. sum of the present values of future cash inflow less the initial cost
 - B. sum of all cash inflows less all cash outflows
 - C. sum of all cash outflows less all cash inflows
 - D. all cash inflows discounted to present values
19. When considering an investment decision, the option with _____ should be chosen.
- A. the highest net present value
 - B. the highest cost of capital
 - C. the highest nominal rate of return
 - D. the highest future value
20. June is using the net present value to decide whether to purchase a piece of office furniture. Which of the following pieces of information does she need to use when making the decision?
- (1) residual value of the office furniture at the end of their useful life
 - (2) all cash flows originated from the purchase and use of the office furniture
 - (3) cost of capital
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

21. Amy deposited \$5,000 into a fixed-interest bank account. If the interest rate on the deposit is 5% per annum compounded quarterly, find (to the nearest dollar) the total amount she could withdraw after 3 years.
- A. \$5,255
 B. \$5,256
 C. \$5,804
 D. \$8,978
22. The effective rate of return of a bank deposit will increase when there is _____.
- A. a decrease in the cost of capital
 B. a decrease in the period of deposit
 C. an increase in the principal
 D. an increase in the frequency compounding
23. The budgeted price of a flat is \$2,000,000. The down payment will be 20% of the flat's price. Jinny decides to deposit an amount of money in the bank so that she can afford to make the down payment in 3 years. If the bank provides an annual interest rate of 3% compounded monthly for the deposit, how much money does she need to deposit today? (Correct to the nearest dollar)
- A. \$36,561
 B. \$365,614
 C. \$396,417
 D. \$437,621
24. A bank provides four saving plans for the public. Tracy decides to invest an amount of \$5,000 into one of them for two years.

	Plan A	Plan B	Plan C	Plan D
Interest rate	10% per annum	9.8% per annum	9.6% per annum	9.4% per annum
Frequency of compounding	Yearly	Half-yearly	Quarterly	Monthly

Which plan offers the highest return after two years? (Correct to the nearest dollar)

- A. Plan A
 B. Plan B
 C. Plan C
 D. Plan D

Based on the following information, answer Questions 25 to 27.

Betty is going to purchase a flat with a cash price of \$1,500,000. The following are two financing proposals:

Proposal A: Borrow a loan of \$1,500,000 from a bank on 1 January 20X4. The loan is repayable by a lump sum of \$2,500,000 at the end of 20X6.

Proposal B: Purchase the flat from the developer by instalments as follows:

	\$	
Deposit (payable on 1 January 20X4)	700,000	
Instalment (payable at the end of 20X4)	600,000	
(payable at the end of 20X5)	500,000	
(payable at the end of 20X6)	400,000	
	2,200,000	
	2,200,000	

The cost of capital is 12% per annum.

25. What is the present value of the amount to be paid for Proposal A? (Correct to the nearest dollar)
 - A. \$1,446,759
 - B. \$1,500,000
 - C. \$1,779,451
 - D. \$1,992,985

26. What is the present value of the amount to be paid for Proposal B? (Correct to the nearest dollar)
 - A. \$1,565,917
 - B. \$1,919,023
 - C. \$2,065,306
 - D. \$2,103,571

27. Betty should adopt _____ because _____.
 - A. Proposal A the present value of the amount to be paid is lower
 - B. Proposal A no instalments need to be paid
 - C. Proposal B the present value of the amount to be paid is higher
 - D. Proposal B the cost of loans under proposal B is \$300,000 lower

28. A credit company is offering Fiona a three-year instalment plan for a \$12,000 loan under a flat rate agreement. At the end of each year, she needs to repay \$5,000. What is the annual flat rate of this instalment loan plan?
- A. 8.33%
 - B. 8.67%
 - C. 10.33%
 - D. 10.67%
29. Iverson lent \$25,000 to Gloria on 1 January 20X6. In each of the following three years, Gloria will pay back Iverson \$12,000, \$11,000 and \$10,000 on 31 December respectively. The costs of capital of the three years are estimated to be 5%, 7% and 3% respectively. Find the net present value of the lending decision, correct to the nearest dollar.
- A. \$3,517
 - B. \$4,861
 - C. \$6,418
 - D. \$8,000
30. Johnathan wants to make a \$800,000 deposit in a bank for half a year. The deposit plan offered is “interest being compounded half-yearly, at a rate of 4% p.a.”. Which of the following alternatives should Johnathan suggest to earn a higher interest income?
- A. an interest payment of \$15,000 at the period end
 - B. interest being compounded monthly, at the same rate
 - C. interest being compounded yearly, at 8%
 - D. none of the above as the plan offered by the bank has given the highest return
31. Mr. Leung plans to purchase three machines costing \$86,000 each. He needs to pay a down payment of 30% of the total cost. He decides to pay the down payment in cash and apply for a bank loan with an annual interest rate of 5% for the remaining balance, which will be repaid in full after four years. Interest is compounded half-yearly. What is the total amount paid by Mr. Leung for the machines (Correct to the nearest dollar)?
- A. \$73,348
 - B. \$219,520
 - C. \$220,044
 - D. \$297,444

32. Chris wants to apply for a bank loan that will be repaid in two years. He is interested in the loan offered by Banks A, B and C. Based on the following information, suggest the most appropriate one for him.

	Bank A	Bank B	Bank C
Nominal interest rate (per annum)	5%	5.1%	5.2%
Frequency of compounding	Monthly	Half-yearly	Yearly

- A. Bank A
B. Bank B
C. Bank C
D. cannot be determined
33. Michael lent \$450,000 to his friend Tony. Tony repaid the amount in a lump sum two years later. Interest rate is 5% per annum and interest is compounded monthly. Cost of capital is 2.5% per annum. Calculate the net present value of the loan for Michael (Correct to the nearest dollar).
- A. \$23,265
B. \$47,224
C. \$473,265
D. \$497,224
34. Mr. Chan wants to buy a house for \$4,000,000 in three years. He is going to put his savings in a time deposit of interest rate 4% per annum. Interest is compounded yearly. What is the minimum amount that Mr. Chan should put in the time deposit so that he can buy the house in three years (Correct to nearest dollar)?
- A. \$3,555,985
B. \$3,555,986
C. \$3,571,429
D. \$3,846,154