

South Tuen Mun Government Secondary School

BAFS: Personal Basic Finance_Ch1_Time Value of Money_WS#2



Multiple-Choice Questions

Study the following questions carefully and put the **BEST** answers in the boxes.

Section 1.1

* 1. Miss Ng joins a 3-year investment scheme which guarantees an interest rate of 3.5% p.a. If Miss Ng's initial investment is \$80,000, calculate the total amount she will receive at the end of 3 years (round number).

- A. \$82,800
- B. \$88,400
- C. \$88,697
- D. \$196,830

* 2. Siu Ming deposits \$2,000 into his savings account at the start of each year. If the interest rate is 5% p.a., how much will Siu Ming's savings be worth at the end of the third year?

- A. \$2,315.25
- B. \$6,000
- C. \$6,300
- D. \$6,620.25

* 3. Mr Kwok would like to have \$40,000 in four years time. If the bank deposit rate is 3% p.a., how much money should Mr Kwok deposit into his savings account in order to reach his goal?

- A. \$35,539.48
- B. \$36,605.67
- C. \$38,834.95
- D. \$45,020.35



- ** 4. Siu Ming intends to deposit \$10,000 into the bank. If the bank offers an annual compound rate, which of the following investments will bring the highest return after 3 years?

	1 st year interest rate	2 nd year interest rate	3 rd year interest rate
A.	5%	5%	5%
B.	6%	5%	4%
C.	7%	5%	3%
D.	8%	4%	3%

- ** 5. Chi Keung has \$30,000 in cash and plans to invest in the bank's savings scheme. If the interest rate is 10% p.a., which of the following savings schemes will achieve the highest return?

	1 st year savings	2 nd year savings	3 rd year savings
A.	\$10,000	\$10,000	\$10,000
B.	\$15,000	\$10,000	\$5,000
C.	\$30,000	0	0
D.	0	0	\$30,000

- ** 6. Mr Au plans to buy a vehicle for \$50,000. He has \$45,000 now. If the bank offers an interest rate of 4% p.a., what is the minimum number of years that he has to save in order to pay for the vehicle?

- A. 0.5 year
 B. 1 year
 C. 2 years
 D. 3 years

- ** 7. Which of the following statements regarding principal and future value is correct?

- (1) Future value increases as principal increases.
 (2) Future value decreases as interest rate increases.
 (3) Future value increases as the period of time lengthens.
 (4) The process of calculating present value based on future value is known as discount.

- A. (3) and (4) only
 B. (1), (2) and (3) only
 C. (1), (3) and (4) only
 D. (1), (2), (3) and (4)

Section 1.2

* 8. When the net present value of a certain investment scheme is _____, the scheme will certainly be accepted.

- A. zero
- B. positive
- C. negative
- D. twice the amount of the initial investment

* 9. The initial investment of a certain investment scheme is \$5,000. The scheme brings cash inflow of \$3,000 in the 1st year and \$2,500 in the 2nd year. If the interest rate is 5% p.a., what is the net present value of the investment?

- A. -\$500
- B. \$124.72
- C. \$500
- D. \$5,124.72

* 10. Mr Cheung is considering buying a piece of equipment based on the net present value concept. What information does he need?

- (1) The costs of buying the equipment
- (2) Present value of the equipment's cash flow
- (3) Value of the equipment in the last year of its life cycle
- (4) Depreciation rate of the equipment

- A. (1) and (4) only
- B. (1), (2) and (3) only
- C. (2), (3) and (4) only
- D. (1), (2), (3) and (4)



** 11. The following is the cash flow of an investment scheme.

Year	Cash flow
0	-\$20,000
1	\$10,000
2	\$10,000

If the interest rate is 5% p.a., what is its net present value?

- A. -\$1,405.9
- B. -\$952.38
- C. \$0
- D. \$1,405.9

** 12. Which of the following push(es) up the net present value?

- (1) An increase in interest rate
 - (2) An increase in initial investment
 - (3) An increase in future cash flow
- A. (1) only
 - B. (3) only
 - C. (1) and (2) only
 - D. (1), (2) and (3)

**13. Which of the following statements regarding net present value are correct?

- (1) Net present value is the present value of cash flow less initial investment in different times of the investment period.
 - (2) Net present value increases as the interest rate rises.
 - (3) A company should invest in projects with positive net present value.
 - (4) Zero net present value is impossible.
- A. (1) and (3) only
 - B. (2) and (4) only
 - C. (1), (2) and (4) only
 - D. (1), (3) and (4) only

Section 1.3

* 14. Which of the following investment schemes brings the highest return?

- A. 18% p.a. with quarterly compounding
- B. 19% p.a. with half-yearly compounding
- C. 20% p.a. with monthly compounding
- D. 21% p.a. with yearly compounding

* 15. If all banks offer an interest rate of 10% p.a., which bank offers the best return?

- A. One with yearly compounding
- B. One with half-yearly compounding
- C. One with monthly compounding
- D. One with half-monthly compounding

** 16. The more frequent the compounding, the greater the eventual return will be. Which of the following are the reasons?

- (1) With compounding, new interests accrue from earned interests.
 - (2) The more frequent the compounding, the faster the interest grows.
 - (3) The more frequent the compounding, the higher the nominal and effective rates of return will be.
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)



** 17. Arrange the following investment schemes in the order from the highest to the lowest returns.

	Scheme A	Scheme B	Scheme C	Scheme D
Interest rate	12% p.a.	12% p.a.	11.5% p.a.	11.5% p.a.
Frequency of compounding	Yearly	Half-yearly	Quarterly	Monthly

- A. Scheme B, Scheme D, Scheme C, Scheme A
- B. Scheme B, Scheme A, Scheme D, Scheme C
- C. Scheme D, Scheme C, Scheme B, Scheme A
- D. Scheme C, Scheme B, Scheme D, Scheme A

** 18. Miss Wong invests \$8,000 in a 3-year scheme which offers an interest rate of 4% p.a. with half-yearly compounding. How much will Miss Wong receive at the end of the 3-year period?

- A. \$8,489.67
- B. \$8,960
- C. \$8,998.91
- D. \$9,009.3

** 19. Which of the following statements regarding nominal rate of return are correct?

- (1) Nominal rate of return is declared interest rate.
- (2) Because of the effect of compounding, the nominal rate of return cannot reflect the actual return on the investment.
- (3) Effective rate of return will be higher than the nominal rate of return if the frequency of compounding is more than once a year.

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

** 20. Which of the following statements regarding effective rate of return are correct?

- (1) Effective rate of return is the declared interest rate of the bank.
- (2) Effective rate of return is always higher than the nominal rate of return.
- (3) The more frequent the compounding, the higher the effective rate of return will be.
- (4) Effective rate of return provides a criterion for comparing return rates of different investment schemes.

- A. (1) and (2) only
- B. (3) and (4) only
- C. (2), (3) and (4) only
- D. (1), (2), (3) and (4)



 **Short Questions**

Section 1.1

* 1. Peter has \$50,000 in cash and plans to invest it for three years. He consulted a banker who made two suggestions:

Plan I	Deposit the cash into a bank which offers an interest rate of 5% for the 1 st year, 6% for the 2 nd year, 7% for the 3 rd year and yearly compounding.
Plan II	Buy a 3-year government bond which guarantees an interest rate of 6% p.a. and yearly compounding.

Which Plan should Peter invest in? (5 marks)

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* 2. The time deposit which Chi Ming opened in the bank 2 years ago matures today. He will receive \$60,000 on the capital and interest.

- (a) Chi Ming remembered that the interest rate was 5% p.a. but has forgotten how much money he deposited. Calculate the amount of Chi Ming's initial deposit. (2 marks)

- (b) Chi Ming wants to invest with such \$60,000 and achieve \$68,000 at the end of a 3-year investment period. In order to do this, what minimum rate of return should the scheme guarantee? (3 marks)
