🗐 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)

- * 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

- * 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	Yearly	Half-yearly	Quarterly	Monthly
compounding				

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)

- * 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)

** 3. Mr Chan plans to buy a vehicle which costs \$150,000, but does not have enough cash. He intends to borrow money from friends or the bank. He has two choices:

Arrangement 1 : Borrow \$150,000 from friends on 1 January 20X1, and fully repay \$160,000 in full by the end of 20X3.

Arrangement 2 : Obtain a personal loan of \$150,000 from the bank and repay it in 3 instalments: Repay \$70,000 by the end of 20X1.
Repay \$60,000 by the end of 20X2.
Repay \$40,000 by the end of 20X3.

- (a) Calculate the present values of Arrangement 1 and Arrangement 2 respectively assuming that the annualised percentage rate is 5%. (4 marks)
- (b) Which financial arrangement should Mr Chan choose? Why? (2 marks)

** 4. Mr Chau needs to obtain a bank loan. The repayment schemes offered by three banks are as follows:

	Bank A	Bank B	Bank C
1 st year repays	\$13,000	\$10,000	\$10,000
2 nd year repays	\$10,000	\$13,000	\$10,000
3 rd year repays	\$10,000	\$10,000	\$13,000

- (a) Suppose the interest rate was 10% p.a., which bank should Mr Chau choose to take out the loan by calculating the present value of the repayment? (7 marks)
- (b) If same amount has to be repaid to each bank, why is one of them a better choice? (2 marks)

** 5. Mr Chung is considering buying a machine which costs \$60,000. He plans to use it for 3 years and sell it for \$7,000 at the end of the 3rd year. He expects the machine to bring him the following revenue in the next 3 years:

	Revenue
1 st year	\$40,000
2 nd year	\$30,000
3 rd year	\$20,000

The cost of the capital is 8%.

- (a) What is the net present value? (1 mark)
- (b) Calculate the machine's net present value. (4 marks)
- (c) Should Mr Chung buy the machine? Why or why not? (1 mark)
- (d) A government licence costing \$30,000 has to be obtained for the machine, and the licence fee is \$30,000. In these circumstances, should Mr Chung buy the machine? (4 marks)

- ** 6. Mr Yip plans to buy a truck which costs \$110,000. Mr Yip expects to use the truck for 3 years bringing him cash inflow of \$40,000 annually. After 3 years, Mr Yip will be able to sell it for \$10,000.
 - (a) If the cost of capital is 10%, should Mr Yip buy the truck? (5 marks)
 - (b) If the price of the truck fell to \$100,000, should Mr Yip buy it? (2 marks)

* 7. Mr Cheung plans to deposit \$10,000 into the bank for 1 year. Two banks offer the following savings plans:

	Bank A	Bank B
Interest rate p.a.	12%	12.5%
Frequency of	Monthly	Yearly
compounding	wontiny	

- (a) What are the annualised percentage rates of Bank A and Bank B? (2 marks)
- (b) Calculate the amounts of interest Mr Cheung will receive from Bank A and Bank B respectively at the end of the 1-year period. (2 marks)
- (c) In order to attract more deposits, Bank B decides to change the frequency of compounding to once every 6 months.

Calculate the annualised percentage rate of Bank B. (2 marks)

(d) Why does the higher the frequency of compounding, the higher the eventual return will be? Explain. (2 marks)

** 8. A banker offers Mr Wong 4 different investment plans:

	Interest rate p.a.	Frequency of compounding
Plan I	26%	Yearly
Plan II	25%	Half-yearly
Plan III	24.5%	Quarterly
Plan IV	24%	Monthly

- (a) What are the differences between the nominal and effective rates of return? (2 marks)
- (b) Which rate of return should be referred to when making decisions on investments? Why? (2 marks)
- (c) Calculate the effective rates of return of the four investment plans. (4 marks)
- (d) Which Plan should Mr Wong invest in? Why? (2 marks)



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