

【財金所乙 A 組】

Part I. Multiple Choice (48 points, 4 points each, choose one correct answer among A, B, C or D):

1. Given the following data for Project M:

	C_0	C_1	C_2
Cash flow in nominal terms:	-100	75	60
Real discount rate = 5%			
Nominal discount rate = 10%			

Calculate the NPV of the project:

- (A) \$25.85. (B) \$17.77. (C) \$22.65. (D) \$35.00.

2. Assume the following data for a stock: Beta = 1.5; Risk-free rate = 4%; Market rate of return = 12%; and Expected rate of return on the stock = 15%. Then the stock is:

- (A) overpriced. (B) underpriced.
(C) correctly priced. (D) cannot be determined.

3. A firm's cost of equity can be estimated using the:

- (A) Fama-French three-factor model.
(B) capital asset pricing model (CAPM).
(C) arbitrage pricing theory (APT).
(D) all of the options.

4. If a firm uses the same company cost of capital for evaluating all projects, which situation(s) will likely occur?

- I. The firm will reject good low-risk projects;
II. The firm will accept poor high-risk projects;
III. The firm will correctly accept projects with average risk

- (A) I only. (B) I and II only. (C) I, II, and III. (D) II only.

5. One can determine the present value of risky cash flows by estimating:
- I. the expected cash flows and then discount these at a rate that is consistent with the risk of the cash flows;
 - II. the certainty-equivalent cash flows and then discount these at the risk-free rate;
 - III. the expected cash flows and then discount these at the risk-free rate.
- (A) I only. (B) II only. (C) I and II only. (D) III only.
6. When firms award stock options to managers as incentives, they typically set the exercise price of these options equal to the firm's:
- (A) stock price on the day the options are granted.
 - (B) expected stock price one year from the day the options are granted.
 - (C) expected stock price on the expiration date of the options.
 - (D) stock price on the day the manager was hired.
7. Bombay Company's book and market value balance sheets are:

(NWC = net working capital; LTA = long term assets; D = debt; E = equity; V = firm value):

<u>Books Values</u>				<u>Market Values</u>			
NWC	200	500	D	NWC	200	500	D
LTA	<u>2300</u>	<u>2000</u>	E	LTA	<u>2800</u>	<u>2500</u>	E
	2500	2500	V		3000	3000	V

According to MM's Proposition I corrected for taxes, what will be the change in company value if Bombay issues \$200 of equity and uses it to make a permanent reduction in the company's debt? Assume a 35% marginal corporate tax rate.

- (A) +\$140 (B) +\$70 (C) \$0 (D) -\$70
8. The value of a bond is given by:
- I. bond value = asset value – value of call option on assets
 - II. bond value = value of an equivalent default-free bond + value of put option on assets
 - III. bond value = value of an equivalent default-free bond + value of put option on stock

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IV. bond value = asset value + value of call option on the stock

(A) I only. (B) I and II only. (C) III and IV only. (D) IV only.

9. A firm may prefer to issue a convertible bond, as opposed to issuing equity, because:

I. a convertible issue sends a better signal to investors than an issue of common stock;

II. an announcement of a stock issue generates worries of overvaluation and usually depresses the stock price;

III. a convertible issue shows the management's willingness to take a chance that the stock price will rise enough to lead to conversion and also signals management's confidence in the future

(A) I only. (B) III only. (C) I and II only. (D) I, II, and III

10. The call policy that maximizes shareholder wealth is to call a bond issue when:

(A) the bond's price is above par.

(B) the bond's price is above par, but below the call price.

(C) the bond's price exceeds the call premium.

(D) the bond's price equals or exceeds the call price.

11. Large business combinations in Japan are normally carried out through

reciprocal ownership of common stock. These networks, or keiretsu, involve a large number of diversified companies centered around a large bank, industrial firm, or trading firm. One of the main benefits of this structure is argued to be:

(A) the monopolistic control of economic segments.

(B) the reduction in the costs of financial distress.

(C) large-scale diversification that cannot be done by individual shareholders.

(D) greater efficiency in management because the management skills are homogenous even for firms in different industries.

12. Consider a three-tier pyramid and a single operating company. Assume that 51% of the votes confer control at each tier. What is the minimum percentage ownership (approximately) at the highest level in the pyramid that will enable control of the operating company?

(A) 100% (B) 51% (C) 50% (D) 26%

Part II. Problems (52 points, detail procedures must be provided):

1. (4 points) Why do nonfinancial corporations need modern financial markets and institutions?
2. (4 points) Wilt's has earnings per share of \$2.98 and dividends per share of \$0.35. What is the firm's sustainable rate of growth if its return on assets is 14.6% and its return on equity is 18.2%?
3. (4 points) What are the limitations when using financial ratio analysis?
4. (12 points) Measuring corporate performance.
 - (A) (4 points) Last year Vaughn Corp. had sales of \$315,000 and a net income of \$17,832, and its year-end assets were \$210,000. The firm's total-debt-to-total-assets ratio was 42.5%. What was Vaughn's ROE?
 - (B) (4 points) Stewart Inc.'s latest EPS was \$3.50, its book value per share was \$22.75, it had 215,000 shares outstanding, and its debt ratio was 46%. How much debt was outstanding?
 - (C) (4 points) What is the current yield of a bond with a 6% coupon, 4 years until maturity, and a price quote of 84?
5. (4 points) Rosita purchased a bond for \$989 that had a 7% coupon and semiannual interest payments. She sold the bond after 6 months and earned a total return of 4.8% on this investment. At what price, did she sell the bond?
6. (4 points) What is the amount of the annual coupon payment for a bond with par of \$1,000 that has 6 years until maturity, sells for \$1,050, and has a yield to maturity of 9.37%? (without calculator, please write out the computation in detail to obtain the payment without actually produce the figure)
7. (4 points) What is the main use of yield curve? What do we learn from an inverted yield curve?
8. (6 points) O'Brien Ltd.'s outstanding bonds have a \$1,000 par value, and they mature in 25 years. Their nominal yield to maturity is 9.25%, they pay interest semiannually, and they sell at a price of \$850. What is the bond's nominal annual coupon interest rate? (without calculator, please write out the computation in detail to obtain the coupon rate without actually produce the figure)

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9. (6 points) DEF common stock is expected to have extraordinary growth of 15% per year for 3 years, at which time the growth rate will settle into a constant 8%. If the discount rate is 10% and the most recent dividend was \$3.00, what should be the approximate current share price?
10. (4 points) Comment with reasons whether the following statement is true, false, or uncertain: In a capital budgeting analysis where part of the funds used to finance the project would be raised as debt, failure to include interest expense as a cost when determining the project's cash flows will lead to an upward bias in the NPV.

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Part I. Multiple Choice

1. (B)

$$\begin{aligned} NPV &= -100 + \frac{7.5}{1.1} + \frac{60}{(1.1)^2} \\ &= 17.77 \end{aligned}$$

2. (A)

$$R_i = 0.04 + 0.08 \times 1.5 = 0.16 > 15\%$$

~ 落在 SML 下方，股價高估

3. (D)

4. (C)

5. (C)

6. (A)

7. (D)

$$200 \times 0.35 = -70$$

8. (A)

風險性債券 + 買賣權 = 無 Risk 債券

9. (D)

10. (D)

11. (B)

12. (B)

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Part II. Problems

1. 見講義書內容

$$2. g = \frac{ROE \times b}{1 - ROE \times b} = \frac{0.182 \times 0.88255}{1 - 0.182 \times 0.88255} = 19.14\%$$

$$d = \frac{0.35}{2.98} = 0.11745$$

$$b = 1 - d = 0.88255$$

3. 見講義書內容

$$4. (A) ROE = \frac{17832}{120,750} = 14.77\%$$

$$\frac{D}{TA} = 0.425$$

$$D = 210,000 \times 0.425 = 89,250$$

$$E = 120,750$$

$$(B) E = 215,000 \times 22.75 = 4891,250$$

$$\frac{D}{TA} = \frac{46}{100}$$

$$TA = 4891250 \div 0.54 = 9057,870$$

$$D = 4166,620$$

$$(C) \text{ current yield} = \frac{1000 \times 6\%}{840} = 7.1428\%$$

$$5. \frac{P_1 + 35}{989} - 1 = 0.048$$

$$P_1 = 1001,472$$

$$6. x \times \frac{1 - 1.0937^{-6}}{0.0937} + \frac{1000}{1.0937^6} = 1050$$

$$x = 104.969 \div 105$$

7. 見講義書內容

$$8. \frac{7.7\%}{2}$$

$$1000 \times r \times \frac{1}{2} \times \frac{1 - 1.04625^{-50}}{0.04625} + \frac{1000}{1.04625^{50}} = 850$$

$$r = 7.7\%$$

$$0.0925 \div 2 = 0.04625$$

