

國立中山大學 114 學年度 碩士班考試入學招生考試試題

科目名稱：財務管理【財管系碩士班丙組】

— 作答注意事項 —

考試時間：100 分鐘

- 考試開始鈴響前不得翻閱試題，並不得書寫、劃記、作答。請先檢查答案卷（卡）之應考證號碼、桌角號碼、應試科目是否正確，如有不同立即請監試人員處理。
- 答案卷限用藍、黑色筆(含鉛筆)書寫、繪圖或標示，可攜帶橡皮擦、無色透明無文字墊板、尺規、修正液（帶）、手錶(未附計算器者)。每人每節限使用一份答案卷，請衡酌作答。
- 答案卡請以 2B 鉛筆劃記，不可使用修正液（帶）塗改，未使用 2B 鉛筆、劃記太輕或污損致光學閱讀機無法辨識答案者，後果由考生自負。
- 答案卷（卡）應保持清潔完整，不得折疊、破壞或塗改應考證號碼及條碼，亦不得書寫考生姓名、應考證號碼或與答案無關之任何文字或符號。
- 可否使用計算機請依試題資訊內標註為準，如「可以」使用，廠牌、功能不拘，唯不得攜帶書籍、紙張（應考證不得做計算紙書寫）、具有通訊、記憶、傳輸或收發等功能之相關電子產品或其他有礙試場安寧、考試公平之各類器材入場。
- 試題及答案卷（卡）請務必繳回，未繳回者該科成績以零分計算。
- 試題採雙面列印，考生應注意試題頁數確實作答。
- 違規者依本校招生考試試場規則及違規處理辦法處理。

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※本科目依簡章規定「不可以」使用計算機(混合題)

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一、單選題（共六十分，第 1 題至第 10 題，每題三分，第 11 題至第 25 題，每題兩分）

1. A bond with a face value of \$1,000 carries a coupon rate of 10%, providing annual interest payments over a three-year period. Given that the current market interest rate is 5%, what would be the price of this bond? (3 points)

- (A) 1,136
- (B) 1,082
- (C) 1,038
- (D) 974

2. Last year, ABC Company distributed a cash dividend of \$5 per share. Investors expect the dividend growth rate to be 5% this year and 10% next year, with a constant growth rate of 8% starting from the third year. If the expected rate of return is 15%, what is the capital gains return from purchasing ABC Company's stock this year? (3 points)

- (A) 7.88%
- (B) 8.13%
- (C) 9.05%
- (D) 9.11%

3. Dotcom Company has a market value of \$20 million before the merger, while Web Company has a market value of \$6 million. Dotcom Company plans to acquire all of Web Company's shares through a stock swap. After the merger, annual earnings are expected to increase by \$600,000, and Dotcom Company's cost of capital is 15%. Currently, Dotcom Company's stock price is \$200 per share, with 100,000 shares outstanding. Web Company's stock price is \$25 per share, with 240,000 shares outstanding. The merger exchange ratio is 0.5:1. What will the stock price be after the merger? (3 points)

- (A) 136
- (B) 142
- (C) 138
- (D) 146

4. Peggy Company is currently assessing an investment Opportunities A. The cash flows for the two Opportunities are presented as follows:

Year	A
0	-30,000
1	12,000
2	12,000
3	12,000

If the required return is 12%, what is the Profitability Index (PI) for Opportunity A? (3 points)

- (A) 0.86
- (B) 0.94
- (C) 0.96
- (D) 0.98

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5. Paris Company has a weighted average cost of capital (WACC) of 8.4%. The company's cost of equity is 11%, while its pretax cost of debt is 5.8%. The tax rate applicable to the company is 25%. What is the target debt-equity ratio for the company? (3 points)

- (A) 0.512
- (B) 0.712
- (C) 0.642
- (D) 0.582

6. Apple Inc. currently maintains a zero-debt structure and has the capacity to borrow at an interest rate of 5.9 percent. The company's Weighted Average Cost of Capital (WACC) stands at 9.2 percent, with a tax rate of 21 percent. If the company decides to convert to 25 percent debt, what would be its cost of equity? (3 points)

- (A) 9.87%
- (B) 8.97%
- (C) 10.07%
- (D) 10.17%

7. Coco company has an equity value of \$15,000. Long-term debt is \$8,500. Net working capital, other than cash, is \$2,850. Fixed assets are \$23,810. If current liabilities are \$2,100, what are the current assets? (3 points)

- (A) 1,640
- (B) 1,690
- (C) 1,740
- (D) 1,790

8. You aim to develop a portfolio that aligns with the overall risk level of the market, with a total investment amount of \$1,000,000. In light of this objective, please complete the following table. What should the investment allocation be for Stock C? (3 points)

Asset	Investment	Beta
Stock A	165,000	0.70
Stock B	315,000	1.09
Stock C		1.11
Risk-free asset		

- (A) \$490,571
- (B) \$489,563
- (C) \$488,545
- (D) \$487,523

9. From the Question 8, what is the Investment in Risk-free asset? (3 points)

- (A) \$31,691
- (B) \$31,971
- (C) \$32,263
- (D) \$32,477

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10. Currently, the spot exchange rate for the Hungarian forint stands at HUF 310.18. According to projections, the inflation rate in the United States is anticipated to be 3.2 percent per annum, while Hungary's inflation rate is expected to reach 6.7 percent. Given these factors, what are your predictions for the exchange rate in one year? (3 points)
- (A) HUF 320.10
 - (B) HUF 320.57
 - (C) HUF 321.04
 - (D) HUF 321.51
11. Which of the following indicators are considered important indicators for evaluating corporate governance? (2 points)
- I. Audit Committee
 - II. Compensation Committee
 - III. Supervisory Committee
 - IV. Nomination Committee
 - V. Shareholders' Election Committee
- (A) I, II, and III
 - (B) I, II, and IV
 - (C) II, IV, and V
 - (D) I, III, and IV
12. Which of the following statements about agency problems is incorrect? (2 points)
- (A) Agents' decisions often align with the wishes of majority shareholders.
 - (B) Agents are defined as the directors of the company.
 - (C) There can be an overlap between agents and principals.
 - (D) Agency problems can arise between a company's shareholders and creditors.
13. Which of the following theories does not explain the reasons behind a company implementing a high dividend policy? (2 points)
- (A) Dividend Signaling Hypothesis
 - (B) Clientele Effect Theory
 - (C) Investors' Demand for Cash
 - (D) Agency Costs
14. Through which mechanisms can controlling shareholders increase their control rights beyond their actual equity ownership? (2 points)
- I. Dual Class Shares
 - II. Separation of voting rights from cash flow rights
 - III. Pyramid ownership structures
 - IV. Cross-shareholding
- (A) II and III
 - (B) I and IV
 - (C) I, III, and IV
 - (D) All of the above

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15. The current yield on T-bills is 2.4 percent. Shares of a ABC company are currently selling for \$77 each. There is no possibility that the stock will be worth less than \$70 per share in one year. What is the value of a call option with a \$55 exercise price? (2 points)
- (A) 8.6
 - (B) 22.0
 - (C) 23.3
 - (D) 23.8
16. Which of the following is not a type of Foreign exchange (FX) risk? (2 points)
- (A) Interest rate risk
 - (B) Transaction risk
 - (C) Translation risk
 - (D) Economic risk
17. Which of the following definitions accurately describes a green shoe option? (2 points)
- (A) The green shoe option allows a company to repurchase shares at the market price to stabilize the stock price.
 - (B) The green shoe option enables investors to sell their shares back to the underwriters at a predetermined price.
 - (C) The green shoe option permits underwriters to postpone the initial public offering if market conditions are unfavorable.
 - (D) The green shoe option grants underwriters the right to purchase additional shares at the offering price to address overallocments.
18. Risk aversion means that: (2 points)
- (A) Investors will only invest in certainties.
 - (B) Managers are only prepared to invest in certainties.
 - (C) Companies will insure themselves against all possible losses.
 - (D) Investors will require extra returns if they are to take risks.
19. Capital rationing comes about because: (2 points)
- (A) There are not enough positive NPV projects.
 - (B) Companies do not always have access to all of the funds they could utilize.
 - (C) Managers often struggle to determine how to fund projects
 - (D) Banks require very high returns on projects
20. Modigliani Miller Approach highlights the following aspect in dividend decisions. (2 points)
- (A) Rate of Dividend
 - (B) Company tendency to retain earnings
 - (C) Zero impact of market prices of shares
 - (D) Shareholders' expectations
21. Dodo Company has issued a bond with a maturity period of three years, a face value of \$1,000, and a coupon rate of 8%. Given that the current market interest rate is 5%, what is the current yield of this bond? (2 points)
- (A) 7.4%
 - (B) 7.2%
 - (C) 6.8%
 - (D) 6.6%

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22. Which of the following statements about forward contracts is incorrect? (2 points)

- (A) Forward contracts are not standardized.
- (B) Forward contracts have low liquidity.
- (C) Forward contracts do not have a daily settlement mechanism.
- (D) Forward contracts are traded on futures exchanges.

23. In a typical month, ABC company receive 60 checks totaling \$55,000. There are delayed nine days on average. What is the average daily float? Assume 30 days in a month. (2 points)

- (A) \$8,250
- (B) \$14,850
- (C) \$16,500
- (D) \$18,333

24. Which transactions will affect a company's working capital? (2 points)

- (A) Paying cash dividends
- (B) Using cash to settle accounts payable
- (C) Taking a short-term loan to purchase inventory
- (D) Selling marketable securities for cash

25. When a company has accumulated deficits on its books and offsets these deficits directly against shareholders' equity, which type of capital reduction does this represent? (2 points)

- (A) Stock repurchase
- (B) Capital reduction through private placement
- (C) Cash refunding capital reduction
- (D) Capital reduction to make up for accumulated losses

二、問答題 (共四十分，每題十分)

1. BBC Company is evaluating a four-year project designed to enhance its production efficiency. The initiative involves the acquisition of a new machine press at a cost of \$555,000, which is anticipated to generate annual pretax cost savings of \$150,000. This machine falls within the MACRS five-year classification and is expected to have a salvage value of \$30,000 at the conclusion of the project. Moreover, an initial investment of \$15,000 will be required for spare parts inventory, along with an additional \$2,800 needed for inventory in each subsequent year of the project. The applicable tax rate for the shop is 22 percent, and the discount rate is 10 percent. Given these considerations, an assessment is needed to determine whether the acquisition and installation of the machine press should proceed? (10 points)

Year	MACRS percentage
1	20.00%
2	32.00%
3	19.20%
4	11.52%

2. By employing the Black-Scholes model for the valuation of call options, you can utilize the principle of put-call parity to demonstrate that the Black-Scholes model for pricing put options can be expressed in the following equation. (10 points)

$$P = E \times e^{-Rt} \times N(-d_2) - S \times N(-d_1)$$

(Hints: the delta for a put option is $N(d_1) - 1 = -N(-d_1)$)

試題請隨卷繳回，請留意背面是否有題

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3. In a world with only corporate taxes, demonstrate that the cost of equity, R_E , aligns with M&M Proposition II which accounts for taxes. (10 points)

$$R_E = R_U + (R_U - R_D) (D/E) (1 - T_C)$$

4. Derive the formula for the Macaulay Duration of a perpetual bond:

$$D_{\text{Mac}} = (1 + r) / r$$

Start from the definition of duration and incorporate the cash flow characteristics of perpetual bonds. Please provide a complete and detailed derivation process. (10 points)

(Hints: Macaulay Duration = $\frac{\sum_{t=1}^n \frac{CF_t \times t}{(1+r)^t}}{P}$, P=Bond Price, CF =Cash flow, r = Market Interest Rate)