

國立中央大學 115 學年度碩士班考試入學試題

系所： 財務金融學系 碩士班 甲組(一般生)

第 1 頁 / 共 13 頁

科目： 財務管理

*本科考試可使用計算器，廠牌、功能不拘

單選題 (每題 2.5 分)

1. Which one of the following IPO methods that issuing company does not receive new cash?
 - A. Direct listing
 - B. Bookbuilding
 - C. Best efforts underwriting
 - D. Firm commitment underwriting
2. Which one of the following statements is not the purpose of bookbuilding?
 - A. Price discovery
 - B. Reputation building for underwriters
 - C. Efficient share allocation to retail investors
 - D. Information extraction from informed investors
3. You want to buy a new car and have been surveying for a long time. Then, you make your final decision based on the information collected from several professional car magazines. Before purchasing your target car, you chat with your neighbor. However, your neighbor tells you that he heard your target car has some problems. Finally, you change your mind and do not buy your target car. What is behavior theory that can explain this behavior?
 - A. Loss aversion
 - B. Regret aversion
 - C. Confirmation bias
 - D. Representativeness Bias
4. Which one of the following statements of bond transaction is correct?
 - A. Quoted price = clean price + accrual interest
 - B. The settlement price must be greater than the quoted price
 - C. The quoted price is not always the same as the settlement price.
 - D. None of the above is correct
5. Check the following statements and select the correct statement(s).
 - I. According to Gordon model, the dividend growth rate equal to the capital gain of investing stock.
 - II. The only case where the Gordon model cannot be applied is when the dividend growth rate is equal to or greater than the required rate of return.

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- III. Since higher risk implies a higher expected return, if a company's risk increases, holding other things constant, its stock price should increase.
- A. I.
B. II.
C. I. and II.
D. II. and III.
6. You are considering buying a car. You monthly salary is \$60,000 and you can save \$32,000 each month. If car loan term is five year and the annual interest rate is 2.88%, What is the maximum car price you can afford? Assume the loan is paid monthly (end of each month). Please select the closet answer.
- A. \$1,764,649
B. \$1,786,171
C. \$1,790,458
D. \$1,920,000
7. Which one of the following statements is not correct?
- A. The cash flow type of coupon payments from a corporate bond is annuity due
B. Holding other things constant, the future value of an annuity due is higher than the future value of an ordinary annuity
C. Holding other things constant, for an annual payment cashflow, the present value of an annuity due equals the present value of an ordinary annuity multiplied by $(1 + \text{the interest rate})$
D. None of the above is wrong
8. Which one of the following statements about bond interest rate risk is correct?
- A. A bond with higher yield-to-maturity has a lower price risk.
B. Reinvestment risk occurs because bond prices fluctuate with interest rates.
C. Long-maturity bonds always have higher reinvestment risk than short-maturity bonds.
D. When the interest rate declines, price risk and reinvestment risk usually move in opposite directions.
9. Which one of the following statements about the capital budgeting problem is correct?
- A. Internal rate of return uses the required rate of return as the reinvestment rate
B. If the project's cash flow type is conventional, net present value and internal rate of return

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methods lead to the same acceptance decision

- C. Because the profitability index is based on the net present value, the profitability index always ranks projects in the same way as net present value
- D. Compared to the net present value and the internal rate of return methods, the data required for the accounting average return method are easy to collect
10. Which one of the following statements about the net working capital is correct?
- A. An increase in net working capital implies a cash inflow for the company
- B. Holding other things constant, a reduction in accounts payable would increase net working capital
- C. If the net working capital is the same between two periods, it implies no cash flow changes for the company during these two periods
- D. None of the above is correct
11. Which one of the following statements is correct?
- A. The sustainable growth rate would ever equal the internal growth rate
- B. Holding other things constant, firms with a higher payout ratio would have a higher sustainable growth rate and internal growth rate
- C. Holding other things constant, firms with a higher profit margin would have a higher sustainable growth rate and internal growth rate
- D. Holding other things constant, firms with a higher sales growth rate would have a higher sustainable growth rate and internal growth rate
12. Holding other things constant, such as the coupon rate, face value, time to maturity, and risk level, which of the following bonds would have the lowest price?
- A. With a callable provision
- B. With a puttable provision
- C. With protective covenants
- D. With a convertible property
13. In 2024, NCU had beginning common stock of \$243,000, beginning retained earnings of \$222,500, ending common stock of \$245,500, ending retained earnings of \$221,050, income before tax of \$88,500, interest expense of \$8,100, and a tax rate of 25%. What is the total of dividends paid during the year? Please select the closet answer.

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- A. \$49,781
- B. \$64,925
- C. \$67,825
- D. \$89,950

14. A company has a return on assets of 8% and a debt ratio is 55%. What is the return on equity?
Please select the closet answer.

- A. 12.40%
- B. 14.55%
- C. 17.78%
- D. 20.40%

15. NCU company is now operating at full capacity. Assets, costs, and current liabilities are proportional to sales. Long-term debt and equity are not. NCU company has sales of \$21,000, net income of \$4,500. The current assets of \$3,300, fixed assets of \$18,700, current liabilities of \$3,200, long-term debt of \$8,700, and equity of \$10,100. The company maintains a constant dividend payout ratio as 60%. What is the external financing needed if sales increase by 15% next year? Please select the closet answer.

- A. 120
- B. 750
- C. 1230
- D. 2415

16. NCU's stock just paid an annual dividend of \$2 and will pay \$2.5 next year. The current dividend yield on NCU stock is 1.42%. The dividend growth rate is expected to remain constant at the current level. What is the expected required rate of return on this stock?

- A. 1.42%
- B. 21.42%
- C. 25.00%
- D. 26.42%

17. A company purchases an asset for \$176,000, and the asset is depreciated on a straight-line basis to zero over an 11-year tax life. The firm plans to use this asset in a 7-year project. At the end of the project, the asset is expected to be sold for \$22,000. The applicable corporate tax rate is 30%.

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What is the after-tax cash flow generated from selling the asset at the end of Year 7?

- A. \$31,800
- B. \$34,600
- C. \$33,300
- D. \$34,100

18. Phone Home, Inc. is evaluating a 6-year expansion project that requires an initial investment of \$5.876 million in fixed assets. The fixed asset will be depreciated straight-line to zero over its 6-year tax life, and it will have no salvage value at the end of the project. The project is expected to generate annual sales of \$5,328,000 and annual operating costs of \$2,131,200. The applicable corporate tax rate is 32%. What is the project's annual operating cash flow (OCF)?

- A. \$1,894,318
- B. \$2,211,407
- C. \$2,487,211
- D. \$2,663,021

19. Phone Home, Inc. is evaluating a 5-year expansion project that requires an initial investment of \$2.484 million in fixed assets. The asset will be depreciated straight-line to zero over its 5-year tax life, and it will have no salvage value at the end of the project. The project is expected to generate annual sales of \$2,208,000 and annual operating costs of \$883,200. The applicable corporate tax rate is 32%, and the firm's required rate of return on this type of project is 11%. What is the net present value (NPV) of this project?

- A. \$1,432,155
- B. \$1,433,059
- C. \$1,434,098
- D. \$1,434,217

20. Your firm is evaluating an investment in a new computer-based order entry system costing \$1,628,000. The system will be depreciated straight-line to zero over its 5-year useful life, and it is expected to have a salvage value of \$156,300 at the end of Year 5. The new system will generate annual pre-tax cost savings of \$642,500, and it will allow the firm to reduce net working capital by \$115,764 at the start of the project (this reduction is a one-time cash inflow). The net working capital will return to its original level at the end of Year 5. The corporate tax rate is 35%. What is the internal rate of return (IRR) of this project?

- A. 11.78 percent
- B. 13.49 percent
- C. 18.21 percent
- D. 22.15 percent

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21. Chapman Machine Shop is considering a 4-year project to improve its production efficiency. Buying a new machine press for \$576,000 is estimated to result in \$192,000 in annual pretax cost savings. The press falls in the MACRS 5-year class, and it will have a salvage value at the end of the project of \$84,000. The press also requires an initial investment in spare parts inventory of \$24,000, along with an additional \$3,600 in inventory for each succeeding year of the project. The inventory will return to its original level when the project ends. The shop's tax rate is 35 percent and its discount rate is 11 percent. Should the firm buy and install the machine press? Why or why not?

MACRS Table – 5 years

Year	MACRS Percentage
1	20.00%
2	32.00%
3	19.20%
4	11.52%
5	11.52%
6	5.76%

- A. no; The net present value is -\$7,489.
 B. no; The net present value is -\$667.
 C. yes; The net present value is \$211.
 D. yes; The net present value is \$4,319.
22. Troyer Markets and Deb's Grocery are all-equity firms. Troyer Markets has 2,400 shares outstanding at a market price of \$14.80 a share. Deb's Grocery has 3,200 shares outstanding at a price of \$28 a share. Deb's Grocery is acquiring Troyer Markets for \$37,500 in cash. What is the merger premium per share?
- A. \$0
 B. \$0.825
 C. \$1.108
 D. \$1.216
23. Rosie's has 1,800 shares outstanding at a market price per share of \$23.50. Sandy's has 2,500 shares outstanding at a market price of \$21 a share. Neither firm has any debt. Sandy's is acquiring Rosie's. The incremental value of the acquisition is \$1,200. What is the value of Rosie's to Sandy's?
- A. \$41,100
 B. \$43,500
 C. \$42,300
 D. \$42,700
24. Taylor's Hardware is acquiring The Corner Store for \$25,000 in cash. Taylor's has 1,500 shares of stock outstanding at a market value of \$46 a share. The Corner Store has 2,200 shares of stock

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- outstanding at a market price of \$8 a share. Neither firm has any debt. The incremental value of the acquisition is \$3,500. What is the value of Taylor's Hardware after the acquisition?
- A. \$49,000
B. \$50,300
C. \$57,300
D. \$65,100
25. Sewer's Paradise is an all equity firm that has 5,000 shares of stock outstanding at a market price of \$15 a share. The firm's management has decided to issue \$30,000 worth of debt and use the funds to repurchase shares of the outstanding stock. The interest rate on the debt will be 10 percent. What are the earnings per share at the break-even level of earnings before interest and taxes? Ignore taxes.
- A. \$1.46
B. \$1.50
C. \$1.67
D. \$1.88
26. Winter's Toyland has a debt-equity ratio of 0.65. The pre-tax cost of debt is 8.7 percent, and the required return on assets is 16.1 percent. What is the cost of equity if you ignore taxes?
- A. 19.31 percent
B. 20.91 percent
C. 20.29 percent
D. 20.46 percent
27. L.A. Clothing has expected earnings before interest and taxes of \$48,900, an unlevered cost of capital of 14.5 percent, and a tax rate of 34 percent. The company also has \$8,000 of debt that carries a 7 percent coupon. The debt is selling at par value. What is the value of this firm?
- A. \$222,579.31
B. \$223,333.33
C. \$224,108.16
D. \$225,299.31
28. Johnson Tire Distributors has debt with both a face and a market value of \$12,000. This debt has a coupon rate of 6 percent and pays interest annually. The expected earnings before interest and taxes are \$2,100, the tax rate is 30 percent, and the unlevered cost of capital is 11.7 percent. What is the firm's cost of equity?
- A. 22.46 percent
B. 22.87 percent
C. 23.20 percent
D. 23.59 percent

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29. Robert Chen is the newly appointed CEO of "HUNTER^HUNTER," an electric vehicle company known for its volatile stock price. The board of directors has designed a special incentive package for him. Robert will receive a massive "Super Performance Bonus" only if the company's annual stock return exceeds 70 percent in the coming year. Based on historical data, the annual returns of the company's stock are normally distributed with a mean of 10 percent and a standard deviation of 30 percent. What is the probability that Robert will receive his bonus?

- A. Close to 0.5 percent
- B. Close to 1 percent
- C. Less than 3 percent but greater than 2 percent
- D. Less than 5 percent but greater than 3 percent

30. Suppose Wang observes the following situation:

State of Economy	Probability of State of Economy	Rate of Return if State Occurs	
		Stock A	Stock B
Boom	0.21	0.189	0.097
Normal	0.74	0.158	0.076
Recession	0.05	— 0.246	0.042

Assume the capital asset pricing model holds and Stock A's beta is greater than Stock B's beta by 0.41. What is the expected market risk premium?

- A. 13 percent
- B. 14 percent
- C. 15 percent
- D. 16 percent

31. Which one of the following statements is not correct?

- A. Since the early 2000s, asset prices have risen significantly while interest rates have fallen. These developments suggest that financial investors are less willing to supply capital to companies in exchange for lower returns, resulting in a decrease in firms' cost of capital in financial markets.
- B. Firms' discount rates should have significantly decreased since the early 2000s, reflecting the decline in the cost of capital, which should contribute to a surge in corporate investment.
- C. Firms must determine a required return on capital, which is their discount rate. However, it is possible that they do not adjust this discount rate in response to changes in their cost of capital.
- D. Therefore, it is possible that discount rates do not closely align with the financial cost of capital, resulting in financial prices having only a limited impact on investment.

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32. Here is a simple theoretical framework involving a utility-maximizing Chief Executive Officer (CEO) with social preferences:

$$U_g(X, U_o, U_c) = u_g(X) + \lambda_g U_o + \gamma_g U_c \text{ for } g \in \{m, f\}, c \in \{s, d\} \text{ (Equation-1)}$$

$$\text{where } U_c = u_c(x) + \lambda_c U_o \text{ (Equation-2)}$$

and where g indicates the CEO's own gender, male (m) or female (f), and c indicates the CEO's own child, son (s) or daughter (d). X denotes a CEO's consumption vector and x denotes a CEO's child's consumption vector. The CEO internalizes both the utility of others in society (U_o) and the utility of their own child (U_c). In this context, "others in society" refers to anyone except the CEO's children. Additionally, the CEO's child also has social preferences. Which one of the following statements is correct?

A. The first-order derivative of the utility of others in society for the social preferences of two

CEOs, A and B, who respectively have a daughter and a son, should be $\frac{\partial U_A}{\partial U_o} = \lambda_d + \gamma_g$ and

$$\frac{\partial U_B}{\partial U_o} = \lambda_s + \gamma_g.$$

B. Based on the first-order derivatives of the utility of others in society for the social preferences of two CEOs, we would expect that a CEO with a daughter has stronger other-regarding preferences than a CEO with a son if $\lambda_d > \lambda_s$.

C. Once $\frac{\partial U}{\partial U_o} < 0$ and $\lambda_g > 0$, an individual internalizes the utility of others in society. Such preferences may differ by gender.

D. The CEO-daughter effect primarily influences corporate decision-making concerning shareholders, suggesting that it has little to no impact on other stakeholders, according to this simple framework.

33. Which one of the following statements is not correct?

A. Accepting credit from a supplier represents a source of short-term financing.

B. Selling inventory for cash represents a use of cash.

C. Selling inventory at a profit on credit will increase net working capital.

D. Decreasing the receivables turnover rate will increase the operating cycle.

34. Which one of the following statements is correct for the motives for firms to hold cash?

A. A firm incurs tax consequences when converting noncash financial assets into cash and uses

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cash for payments. Due to the economies of scale, larger firms thus tend to hold less cash.

- B. The agency motive suggests that entrenched managers would rather retain cash than increase payouts to shareholders when the firm has poor investment opportunities.
- C. The pecuniary motive suggests that firms with better investment opportunities hold more cash because adverse shocks and financial distress are more costly for them.
- D. U.S. multinational firms that would incur more transaction costs associated with repatriating foreign earnings are more likely to accumulate cash.

35. Which one of the following statements is not correct for Environment, Social, and Governance (ESG)?

- A. Based on the cash-flow model: $Value = \sum_{t=1}^{\infty} \frac{E(Cash\ Flow_t)}{(1+r)^t}$, maximizing shareholder value may crowd out many green projects, such as clean energy and carbon capture, due to their negative near-term cash flows, even though future cash flows are sufficiently positive.
- B. Adjusting the discount rate is a common way for executives to integrate ESG factors into valuation. However, according to the Arbitrage Pricing Theory, the discount rate is primarily influenced by non-diversifiable risk. Sustainability risks primarily affect expected cash flows rather than the discount rate itself.
- C. ESG is a broader term than Corporate Social Responsibility (CSR) because ESG explicitly includes governance, while CSR implicitly addresses governance issues based on their impact on environmental and social factors.
- D. Demand for sustainable stocks can lead to lower returns. A company only creates value for its shareholders if it generates shareholder value in ways that the market does not anticipate. If better ESG performance is already known, the market will have priced it in, resulting in a higher stock price.

36. HUNTER^HUNTER, a private company, is evaluating a potential expansion into the electric vehicle (EV) market. The CEO has instructed the CFO to assess the feasibility of this investment. To conduct a comprehensive project financial evaluation, the CFO needs to determine the firm's capital structure and establish the company-wide hurdle rate or cost of capital. Given that HUNTER^HUNTER is not publicly traded, the CFO must estimate the cost of equity by analyzing the beta values of comparable publicly traded firms in the automotive industry. Below is a table that presents relevant information for these comparable firms:

Company	Levered Beta	Debt	Equity	Tax Rate
Peer-1	0.37	30.29%	69.71%	31%

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Peer-2	0.58	42.74%	57.26%	31%
Peer-3	0.27	39.08%	60.92%	31%
Peer-4	0.11	50.74%	49.26%	31%
Peer-5	0.49	56.88%	43.12%	31%
Peer-6	0.06	22.40%	77.60%	31%

The CFO needs to analyze the levered betas of these firms to estimate an appropriate cost of equity for HUNTER^HUNTER. This assessment will guide the company in determining whether to proceed with the EV expansion and how to position itself in a competitive market. What is the levered beta for HUNTER^HUNTER given that the debt is 44.51% and equity is 55.49%?

- A. 0.115
- B. 0.267
- C. 0.317
- D. 0.468

37. Building on the previous question, please calculate the weighted average cost of capital (WACC) for HUNTER^HUNTER. The market return for the stock market in 2024 was 23.8 percent. The corporate tax rate is 31%. We assume that the T-Bill rate in 2024 is:

T-Bill	Rate
3 months	2.12%
6 months	4.00%
12 months	6.05%

**HUNTER^HUNTER—INCOME STATEMENT
FOR THE YEAR ENDED DECEMBER 31, 2024**

<i>Sales</i>	2,900,731
Less: Sales Return	313,065
<i>Net Sales</i>	2,587,666
Cost of Sales	1,009,658
<i>Gross Profit</i>	1,578,008
Less Operating Expenses	
Administrative Expenses	665,853
Selling and Distribution Expense	346,448
Total of Operating Expenses	1,012,301
<i>Earnings before Interest and Taxes (EBIT)</i>	565,707
Less: Interest	161,002
<i>Earnings before Tax (EBT)</i>	404,705
Less: Tax	44,864
<i>Earning after Tax (EAT)</i>	359,841

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**HUNTER^HUNTER—BALANCE SHEET
FOR THE YEAR ENDED DECEMBER 31, 2024**

Assets		Liabilities	
<i>Current Assets</i>		<i>Current Liabilities</i>	
Inventories	319,388	Short-Term Debt	394,056
Cash and Bank Balance	9,385	Trade Payable	188,387
Trade Receivables	621	Short-Term Provisions	52,126
Short-Term Loans and Advances	19,188	Other Current Liabilities	165,084
Other Current Assets	101,305	Total Current Liabilities	799,653
Total Current Assets	449,887	<i>Long-Term Liabilities</i>	
<i>Fixed Assets</i>		Long-Term Debt	756,844
Building	231,154	Equity	
Capital Work in Progress	55,251	Total Liability and Equity	1,434,996
Machinery	1,935,419		
Other Fixed Assets	319,782		
Total of Fixed Assets	2,541,606		
Total Assets	2,991,493		2,991,493

- A. 9.22%
- B. 9.65%
- C. 10.70%
- D. 13.01%

38. Which one of the following statements is not correct?

- A. The variance of an investment's annual returns over a number of years is the average squared difference between the actual returns and the arithmetic average return.
- B. The market portfolio represents all assets in the market and therefore has an average systematic risk with a beta of one
- C. Efficient financial markets fluctuate continuously because arbitrage trading is limited.
- D. Individual investors who continually monitor the financial markets seeking mispriced securities make the markets increasingly more efficient.

39. You bought one of Shark Repellant's 6 percent coupon bonds one year ago for \$867. These bonds pay annual payments, have a face value of \$1,000, and mature 5 years from now. Suppose you decide to sell your bonds today when the required return on the bonds is 7.4 percent. The inflation rate over the past year was 2.9 percent. What was your total real return on this investment?

- A. 5.48%
- B. 6.61%

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C. 11.18%

D. 12.45%

40. HUNTER^HUNTER is considering a project that will cost \$500,000. The project will generate after-tax cash flows of \$93,150 per year forever. The WACC is 13.95%, and the firm's target D/E ratio is 1.0. The flotation cost for equity is 10%, and the flotation cost for debt is 2%. What is the NPV for the project after adjusting for flotation costs?

A. 135,827

B. 256,685

C. -143,808

D. -76,542