

考 試 科 目	財務管理	系 所 別	財務管理學系	考 試 時 間	2 月 12 日(三) 第三節
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Part I. Multiple Choice Questions (40 points, 5 points each)

- You are considering moving to a new house and can either rent or purchase it with a 30-year loan. The house you wish to buy costs \$600,000. If you purchase the house, you will make annual payments over 30 years at an APR of 2.5%. At the end of 30 years, you estimate the house will be worth \$120,000. What is the present value of the cost of purchasing the house?
 (A) \$652,209.12
 (B) \$600,000
 (C) \$542,790.88
 (D) \$464,640.24
- Following the previous question, a real estate agent offers a special rental arrangement where you pay \$15,600 upfront today and \$2,200 per month for the next 30 years. What is the present value of the rental cost? Should you buy or rent the house?
 (A) \$572,391.61; buy the house
 (B) \$572,391.61; rent the house
 (C) \$652,209.12; buy the house
 (D) \$652,209.12; rent the house
 (E) None of the above
- Tycoon Tours is expected to have an EBIT of \$184,000 next year. Depreciation, the increase in net working capital, and capital spending are expected to be \$11,000, \$1,500, and \$13,000, respectively. All are expected to grow at 6% per year for three years. After Year 4, the adjusted cash flow from assets is expected to grow at 2.5% indefinitely. The company's WACC is 9.2% and the tax rate is 21%. What is the terminal value of the company's cash flows?
 (A) \$1,711,052
 (B) \$2,008,051
 (C) \$2,123,008
 (D) \$2,584,798
 (E) \$2,740,563
- Which of the following are plausible reasons for firms paying dividends?
 I. there is a clientele that prefers dividends
 II. dividends provide a strong signal of future earnings
 III. Firms pay dividends to distribute excess cash
 IV. firms that pay dividends are more valued by investors
 (A) I only
 (B) I and II only
 (C) I, II, and III only

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<p>(D) II, III, and IV only (E) All of the above</p> <p>5. We have two assets with beta coefficients of 1.3 and 0.8 from the market model. The residual standard deviation from the market model is for two assets are 2 and 6, respectively. The market standard deviation is 4.5.</p> <p>I. The correlation between two assets is 0.56. II. The first asset has a higher systematic risk III. The second asset has a higher total risk IV. The correlation is too high to have any portfolio with these two assets that can have a lower total risk than both assets.</p> <p>(A) Only II and III are correct (B) Only I, II, and III are correct (C) Only I and IV are correct (D) All of them are correct</p> <p>6. Which one of the following statements related to the internal rate of return (IRR) is correct?</p> <p>(A) The IRR yields the same accept and reject decisions as the net present value method given mutually exclusive projects. (B) A project with an IRR equal to the required return would reduce the value of a firm if accepted. (C) The IRR is equal to the required return when the net present value is equal to zero. (D) Financing type projects should be accepted if the IRR exceeds the required return. (E) The average accounting return is a better method of analysis than the IRR from a financial point of view.</p> <p>7. The yield to maturity on a bond is the interest rate you earn on your investment if interest rates do not change. If you sell the bond before it matures, your realized return is known as the holding period yield. Suppose that today you buy a par value bond with 9% annual interest for \$1,000. The bond has 12 years to maturity. Three years from now, the yield to maturity has declined to 7% and you decide to sell. What is your holding period yield?</p> <p>(A) 8.84% (B) 10.96% (C) 12.83% (D) 13.01%</p> <p>8. Efficient financial markets fluctuate continuously because:</p> <p>(A) arbitrage trading is limited. (B) the markets are continually reacting to old information as that information is absorbed. (C) investments produce varying levels of net present values. (D) current trading systems require human intervention. (E) the markets are continually reacting to new information.</p>					

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Part II. Calculations and Essays (60 points)

1. Dah Hsian Inc is determined to report earnings per share of \$3.00. It therefore acquires The Queenstown Inc:

	Dah Hsian Inc	The Queenstown Inc	Merged Firm
Earnings per share	\$2.50	\$3.00	\$3.00
Price per share	\$50.00	\$30.00	?
Price-earnings ratio	20	10	?
Number of shares	150,000	300,000	?
Total earnings	\$375,000	\$900,000	?
Total market value	\$7,500,000	\$9,000,000	?

There are no gains from the merger. In exchange for The Queenstown Inc shares, Dah Hsian Inc issues just enough of its own shares to ensure its \$3.00 earnings per share objective.

- (5 points) Complete the above table for the merged firm.
- (5 points) How many shares of Dah Hsian Inc are exchanged for each share of The Queenstown Inc?
- (5 points) What is the cost of the merger to Dah Hsian Inc?
- (5 points) What is the change in the total market value of Dah Hsian Inc shares that were outstanding before the merger?

After the merger, the discounted future cash flows for the acquisition in the next year are uncertain and could be either \$13,500,000 (high scenario) or \$6,500,000 (low scenario). The appropriate discount rate is 7%. Assume Dah Hsian Inc has the option to abandon the acquisition at the end of the year by selling off the assets acquired from The Queenstown Inc for \$8,500,000.

- (5 points) Calculate the risk-neutral probability for the high cash flow scenario.
- (5 points) What is the value of the abandonment option for Dah Hsian Inc?

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<p>2. NCCUC Plc. has 2,400 20-year bonds outstanding with coupon rate of 5% paid semiannually. Comparable bonds are yielding a pretax return of 6%. The company also has 130,000 shares of common stock outstanding. The common stock has a beta of 0.92 and sells for NT\$368 per share. The risk-free rate is yielding 3.3% and the return on Taiwan Capitalization Weighted Stock Index is 9.8%. The corporate tax rate is 20%, and the exchange rate is 32.00 NTD/USD.</p> <p>Hint: Pay close attention to currency conversions, as some figures are provided in NTD, while others need to be calculated in USD.</p> <p>Calculate the following values in <u>US Dollars</u>:</p> <p>(a) (2.5 points) Determine the weighted average cost of capital (WACC).</p> <p>(b) (2.5 points) Calculate the current market value per share of NCCUC Plc., assuming the company generates consistent annual earnings of \$60,800 for 20 years.</p> <p>Dr. Harford has invented a new technology requiring an initial investment of NT\$48,000 for commercialization. The technology is expected to increase annual earnings by \$3,200 over the next 20 years.</p> <p>(c) (2.5 points) What is NPV of the new technology?</p> <p>(d) (2.5 points) How much would this investment impact NCCUC Plc.'s stock price?</p>					
<p>3. The growth of passive investment strategies, such as index funds and ETFs, has raised concerns about potential agency problems between fund managers and fund investors. Unlike active managers, who actively select securities to outperform the market, passive managers primarily aim to replicate the performance of an index. Critics argue that this shift may reduce the incentives for managers to act in the best interests of investors and could lead to broader governance implications for portfolio companies.</p> <p>(20 points) Discuss and raise an example for the concept of agency problems in the context of fund management.</p>					
備 註	<p>一、作答於試題上者，不予計分。</p> <p>二、試題請隨卷繳交。</p>				