

國立清華大學 100 學年度碩士班入學考試試題

系所班組別：計量財務金融學系甲組(財務金融組)

考試科目(代碼)：財務管理(4704)

共__7__頁，第__1__頁 *請在【答案卷、卡】作答

一、是非題(20%)，每題 2 分-若答案為是，請選擇 A；若答案為否，請選擇 B

1. When a warrant and a traded call option are both issued by the company, and when they are exercised, the number of shares increases.
2. You can think of the debt holders as owning the firm and having sold a call option with a strike price equal to the required debt payment.
3. In perfect capital markets, the stock price falls by the amount of the dividend when a dividend is paid. On the other hand, an open market share repurchase has no effect on the stock price, and the stock price is the same as the cum-dividend price if a dividend were paid instead.
4. According to Modigliani and Miller Proposition I, firm can try to push up its stock price through a leverage recapitalization in which the firm borrows money and repurchases shares.
5. It is a way to gain control over firms even then shareholders do not own more than half the shares is to issue dual class shares in which companies have more than one class of shares and one class has superior voting rights over the other class.
6. According to empirical researches on mergers and acquisitions, on average, the shareholders of acquired firms give benefits from M&A, and on the other hand, the effect of M&A on acquiring stockholders is less clear.
7. Price changes are not really random, but are caused by the arrival of unpredictable information.
8. The problem of asymmetric information occurs when investors know more about the firm than the managers do.
9. When a company founder decides to sell equity to outside investors for the first time, it is common practice for private companies to issue common stock rather than preferred stock to raise capital.
10. Short-term debt is often less costly than long-term debt, and the major reason for this is that short-term debt exposes the borrowing firm to less risk than long-term debt.

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二、單選題(80%)，每題 4 分

1. Talyer Inc. recently hired you as a consultant to estimate the company's WACC. You have obtained the following information.
- Talyer's bonds mature in 25 years, have a 7.5% annual coupon, a par value of \$1,000, and a market price of \$936.49.
 - The company's tax rate is 40%.
 - The risk-free rate is 6.0%, the market risk premium is 5.0%, and the stock's beta is 1.5.
 - The target capital structure consists of 30% debt and 70% equity.
- Talyer uses the CAPM to estimate the cost of equity, and it does not expect to have to issue any new common stock. What is its WACC?
- A. 9.89% B. 10.01% C. 10.35% D. 10.64% E. 10.91%
2. The flow-to-equity (FTE) approach in capital budgeting is defined to be the:
- discounting all cash flows from a project at the overall cost of capital.
 - scale enhancing discount process.
 - discounting of the levered cash flows to the equity holders for a project at the required return on equity.
 - the dividends and capital gains that may flow to shareholders of any firm.
 - discounting of the unlevered cash flows of a project from a levered firm at the WACC.
3. Zara Co. is considering a new project whose data are shown below. The equipment that would be used has a 3-year tax life, would be depreciated by the straight line method over the project's 3 year life, and would have zero salvage value. No new working capital would be required. Revenues and other operating costs are expected to be constant over the project's 3-year life. What is the project's NPV?
- | | |
|---|----------|
| WACC | 10% |
| Net investment cost (depreciable basis) | \$65,000 |
| Straight line depreciation rate | 33.33% |
| Sales revenues | \$70,000 |
| Operating costs excluding depreciation | \$25,000 |
| Tax rate | 35% |
- A. \$22,156.24 B. \$23,791.14 C. \$24,354.87
D. \$25,189.71 E. \$26,599.05

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Kinston Industries has come up with a new mountain bike prototype and is ready to go ahead with pilot production and test marketing. The pilot production and test marketing phase will last for one year and cost \$500,000. Your management team believes that there is a 50% chance that the test marketing will be successful and that there will be sufficient demand for the new mountain bike. If the test-marketing phase is successful, then Kinston Industries will invest \$3 million in year one to build a plant that will generate expected annual after tax cash flows of \$400,000 in perpetuity beginning in year two. If the test marketing is not successful, Kinston can still go ahead and build the new plant, but the expected annual after tax cash flows would be only \$200,000 in perpetuity beginning in year two. Kinston has the option to stop the project at any time and sell the prototype mountain bike to an overseas competitor for \$300,000. Kinston's cost of capital is 10%.

Please use the information above to answer question 4 to 6.

4. Assuming that Kinston has the ability to sell the prototype in year one for \$300,000, the NPV of the Kinston Industries Mountain Bike Project is closest to:
A. \$90,000 B. \$590,000 C. \$455,000 D. -\$45,000 E. \$0
5. Assuming that Kinston does not have the ability to sell the prototype in year one for \$300,000, the NPV of the Kinston Industries Mountain Bike Project is closest to:
A. \$90,000 B. \$590,000 C. \$455,000 D. -\$45,000 E. \$0
6. Assume that Kinston has the ability to ignore the pilot production and test marketing and to go ahead and build their manufacturing plant immediately. Assuming that the probability of high or low demand is still 50%, the NPV of the Kinston Industries Mountain Bike Project is closest to:
A. \$90,000 B. \$590,000 C. \$455,000 D. -\$45,000 E. \$0

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7. Suppose a five-year bond with a 7% coupon rate and semiannual compounding is trading for a price of \$951.58. Expressed as an annual percentage rate (APR) with semiannual compounding, this bond's yield to maturity (YTM) is closest to:
A. 7.0% B. 7.5% C. 7.8% D. 8.2% E. 8.6%
8. You expect that TAMC Co. will have earnings per share of \$2 for the coming year. TAMC plans to retain all of its earnings for the next three years. For the subsequent two years, the firm plans on retaining 50% of its earnings. It will then retain only 25% of its earnings from that point forward. Retained earnings will be invested in projects with an expected return of 20% per year. If TAMC's equity cost of capital is 12%, then the price of a share of TAMC's stock is closest to:
A. \$17.00 B. \$10.75 C. \$27.75 D. \$43.50 E. \$51.30
9. The common stock of Watson, Inc. is currently priced at \$52.50 a share. One year from now, the stock price is expected to be either \$54 or \$60 a share. The risk-free rate of return is 4%. What is the value of one call option on Watson stock with an exercise price of \$55?
A. \$0.39 B. \$0.41 C. \$0.45 D. \$0.48 E. \$0.51
10. Which of the following statements is false?
 - A. The option delta, Δ , has a natural interpretation: It is the change in the price of the stock given a \$1 change in the price of the option.
 - B. Because a leveraged position in a stock is riskier than the stock itself, this implies that call options on a positive beta stock are more risky than the underlying stock and therefore have higher returns and higher betas.
 - C. Only one parameter input for the Black-Scholes formula, the volatility of the stock price, is not observable directly.
 - D. Because a stock's volatility is much easier to measure (and forecast) than its expected return, the Black-Scholes formula can be very precise.
 - E. None of above.

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The current price of H stock is \$20. In the next year the stock price will either go up by 20% or go down by 20%. H pays no dividends. The one year risk-free rate is 5% and will remain constant.

Please use the information above to answer question 11 to 14.

11. The risk neutral probability of an up state for H is closest to:
A. 20.6% B. 37.5% C. 52.0% D. 62.5% E. 65.3%
12. The risk neutral probability of a down state for H is closest to:
A. 20.6% B. 37.5% C. 52.0% D. 62.5% E. 65.3%
13. Using risk neutral probabilities, the calculated price of a one-year call option on H stock with a strike price of \$20 is closest to:
A. \$1.45 B. \$2.00 C. \$2.40 D. \$3.00 E. \$3.40
14. Using risk neutral probabilities, the calculated price of a one-year put option on H stock with a strike price of \$20 is closest to:
A. \$1.45 B. \$2.00 C. \$2.40 D. \$3.00 E. \$3.40

15. A firm has the following balance sheet:

Cash	\$ 20	Accounts payable	\$ 20
Accounts receivable	20	Notes payable	40
Inventories	20	Long-term debt	80
Fixed assets	180	Common stock	80
		Retained earnings	<u>20</u>
		Total liabilities	
Total assets	<u>\$240</u>	and equity	<u>\$240</u>

Sales for the year just ended were \$400, and fixed assets were used at 80% of capacity, but its current assets were at optimal levels. Sales are expected to grow by 5% next year, the profit margin is 5%, and the dividend payout ratio is 60%. How much additional funds (AFN) will be needed?

- A. -\$4.6 B. -\$6.4 C. \$2.4 D. \$4.6 E. \$5.8

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Rearden Metal has earnings per share of \$2. It has 10 million shares outstanding and is trading at \$20 per share. Rearden Metal is thinking of buying Associated Steel, which has earnings per share of \$1.25, 4 million shares outstanding, and a price per share of \$15. Rearden Metal will pay for Associated Steel by issuing new shares. There are no expected synergies from the transaction.

Please use the information above to answer question 16 to 18.

16. If Rearden offers an exchange ratio such that, at current pre-announcement share prices for both firms, the offer represents a 20% premium to buy Associated Steel, then the price per share of the combined corporation after the merger will be closest to:
A. \$15.00 B. \$17.20 C. \$18.60 D. \$19.10 E. \$20.30
17. If Rearden offers an exchange ratio such that, at current pre-announcement share prices for both firms, the offer represents a 20% premium to buy Associated Steel, then the price per share of the Associated Steel immediately after the announcement will be closest to:
A. \$15.00 B. \$17.20 C. \$18.60 D. \$19.10 E. \$20.30
18. If Rearden offers an exchange ratio such that, at current pre-announcement share prices for both firms, the offer represents a 20% premium to buy Associated Steel, then actual premium Rearden will pay will be closest to:
A. 14.7% B. 18.0% C. 20.0% D. 22.4% E. 24.8%

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19. Market efficiency says:

- A. prices may not reflect underlying value.
- B. a good financial manager can time stock sales.
- C. managers may profitably speculate in foreign currency.
- D. managers cannot boost stock prices through creative accounting.
- E. None of the above.

20. If investors possess homogeneous expectations over all assets in the market portfolio, when riskless lending and borrowing is allowed, the market portfolio is defined to:

- A. be the same portfolio of risky assets chosen by all investors.
- B. have the securities weighted by their market value proportions.
- C. be a diversified portfolio.
- D. All of the above.
- E. None of the above.