

國立清華大學 104 學年度碩士班考試入學試題

系所班組別：計量財務金融學系碩士班 甲組(財務金融組)

考試科目 (代碼)：財務管理(4504)

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單選題，共 25 題，每題 4 分，答錯每題倒扣 1 分。

1. McKean Inc. is an all-equity firm with 200,000 shares outstanding. The company's EBIT is \$2,000,000, and EBIT is expected to remain constant over time. The company pays out all of its earnings each year. The company's tax rate is 40%. The company is considering issuing \$2 million worth of bonds (at par) and using the proceeds for a stock repurchase. If issued, the bonds would have an estimated YTM of 10%. The risk-free rate is 6.5%, and the market risk premium is 5.0%. The company's beta is currently 0.90, but investment bankers say the beta will rise to 1.10 if the recapitalization occurs.

Assume that the shares are repurchased at a price equal to the stock market price prior to the recapitalization. What would be the company's stock price following the recapitalization?

A. \$54.00 B. \$55.10 C. \$56.20 D. \$57.30 E. \$58.40

2. Which of the following statements is CORRECT?
- A. If corporate tax rates were decreased while other things were held constant, and if the Modigliani-Miller tax-adjusted tradeoff theory of capital structure were correct, this would tend to cause corporations to decrease their use of debt.
- B. An increase in the personal tax rate would not affect firms' capital structure decisions.
- C. "Business risk" is differentiated from "financial risk" by the fact that financial risk reflects only the use of debt, while business risk reflects both the use of debt and such factors as sales variability, cost variability, and operating leverage.
- D. The optimal capital structure is the one that simultaneously (1) maximizes the price of the firm's stock, (2) minimizes its WACC, and (3) maximizes its EPS.
- E. If changes in the bankruptcy code make bankruptcy less costly to corporations, then this would likely reduce the debt ratio of the average corporation.
3. Simon Software Co. is trying to estimate its optimal capital structure. Right now, Simon has a capital structure that consists of 20% debt and 80% equity. The risk-free rate is 6% and the market risk premium is 5%. Currently the company's

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- cost of equity is 12% and its tax rate is 40%. What would be Simon's estimated cost of equity if it were to change its capital structure to 50% debt and 50% equity?
A. 14.35% B. 30.00% C. 14.72% D. 15.60% E. 13.64%
4. Walker Industries has a bond outstanding with 12 years to maturity, a 9% coupon paid semiannually, and a \$1,000 par value. The bond has a 7% nominal yield to maturity, but it can be called in 3 years at a price of \$1,045. What is the bond's nominal yield to call?
A. 4.43% B. 4.62% C. 4.82% D. 4.91% E. 4.99%
5. Stock A has an expected return of 10% and a standard deviation of 20%. Stock B has an expected return of 13% and a standard deviation of 30%. The risk-free rate is 5% and the market risk premium, is 6%. Assume that the market is in equilibrium. Portfolio AB has 50% invested in Stock A and 50% invested in Stock B. The returns of Stock A and Stock B are independent of one another. Which of the following statements is CORRECT?
A. Portfolio AB's required return is 11%.
B. Portfolio AB's standard deviation is 25%.
C. Stock A's beta is 0.8333.
D. Stock B's beta is 1.0000.
E. Since the two stocks have zero correlation, Portfolio AB is riskless.
6. Which of the following statements is CORRECT?
A. The CAPM has been thoroughly tested, and the theory has been confirmed beyond any reasonable doubt.
B. A graph of the SML as applied to individual stocks would show required rates of return on the vertical axis and standard deviations of returns on the horizontal axis.
C. If two "normal" or "typical" stocks were combined to form a 2-stock portfolio, the portfolio's expected return would be a weighted average of the stocks' expected returns, but the portfolio's standard deviation would probably be greater than the average of the stocks' standard deviations.
D. If investors became more risk averse, then (1) the slope of the SML would increase and (2) the required rate of return on low-beta stocks would increase by

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more than the required return on high-beta stocks.

E. An increase in expected inflation could be expected to increase the required return on a riskless asset and on an average stock by the same amount, other things held constant.

7. Which of the following statements is CORRECT?

A. If you formed a portfolio that included a large number of low-beta stocks, the portfolio would itself have a beta coefficient that is equal to the weighted average beta of the stocks in the portfolio, so the portfolio would have less market risk than a portfolio that consisted of all stocks in the market.

B. If you add enough randomly selected stocks to a portfolio, you can completely eliminate all the market risk from the portfolio.

C. Market risk can be eliminated by forming a large portfolio, and if some bonds are held in the portfolio, the portfolio can be made to be completely riskless.

D. If you were restricted to investing in publicly traded common stocks, yet you wanted to minimize the riskiness of your portfolio as measured by its beta, then according to the CAPM theory you should invest an equal amount of money in each stock in the market. That is, if there were 10,000 traded stocks in the world, the least risky portfolio would include some shares in each of them.

E. A portfolio that consists of all stocks in the market would have a required return that is equal to the riskless rate.

8. The Aggie Company has EBIT of \$70,000 and market value debt of \$100,000 outstanding with a 9% coupon rate. The cost of equity for an all equity firm would be 14%. Aggie has a 35% corporate tax rate. Investors face a 20% tax rate on debt receipts and a 15% rate on equity. Determine the value of Aggie.

A. \$120,000 B. \$162,948 C. \$258,537 D. \$263,080 E. \$355,938

9. Diamond Drill Inc. has 150,000 shares and 15,000 warrants outstanding. A warrant holder can purchase a new share of stock for five warrants and \$5.00 per warrant. The stock is currently selling for \$27 per share. If the warrants are all exercised immediately, what would be the market price of the stock?

A. \$22.78 B. \$25.13 C. \$26.96 D. \$28.00 E. \$29.00

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10. Martha B's has total assets of \$1,750. These assets are expected to increase in value to either \$1,800 or \$2,400 by next year. The company has a pure discount bond outstanding with a face value of \$2,000. This bond matures in one year. Currently, U.S. Treasury bills are yielding 6%. By the risk-neutral valuation approach, what is the value of the equity in this firm?
- A. \$16.98 B. \$34.59 C. \$36.67 D. \$37.08 E. \$51.89
11. Tele-Tech Com announces a major expansion into Internet services. This announcement causes the price of Tele-Tech Com stock to increase, but also causes an increase in price volatility of the stock. Which of the following correctly identifies the impact of these changes on a call option of Tele-Tech Com?
- A. Both changes cause the price of the call option to decrease.
B. Both changes cause the price of the call option to increase.
C. The greater uncertainty will cause the price of the call option to decrease. The higher price of the stock will cause the price of the call option to increase.
D. The greater uncertainty will cause the price of the call option to increase. The higher price of the stock will cause the price of the call option to decrease.
E. The greater uncertainty has no direct effect on the price of the call option. The higher price of the stock will cause the price of the call option to decrease.
12. The market price of ABC stock has been very volatile and you think this volatility will continue for a few weeks. Thus, you decide to purchase a one-month call option contract on ABC stock with a strike price of \$25 and an option price of \$1.50. You also purchase a one-month put option on ABC stock with a strike price of \$25 and an option price of \$.70. What will be your total profit or loss on these option positions if the stock price is \$24.60 on the day the options expire?
- A. -\$180 B. -\$140 C. -\$100 D. \$0 E. \$180
13. Anderson's Furniture Outlet has an unlevered cost of capital of 10%, a tax rate of 34%, and expected earnings before interest and taxes of \$1,600. The company has \$3,000 in bonds outstanding that have an 8% coupon and pay interest annually. The bonds are selling at par value. Following the MM theory, what is the cost of

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equity?

A. 8.67% B. 9.34% C. 9.72% D. 9.99% E. 10.46%

14. Studies of the performance of professionally managed mutual funds find that these funds:
- A. do not outperform a market index. Assuming mutual fund managers rely primarily on public information, this finding refutes the semistrong form of the efficient market hypothesis.
 - B. do not outperform a market index. Assuming mutual fund managers rely primarily on public information, this finding supports the semistrong form of the efficient market hypothesis.
 - C. outperform a market index. Assuming mutual fund managers rely primarily on public information, this finding refutes the semistrong form of the efficient market hypothesis.
 - D. outperform a market index. Assuming mutual fund managers rely primarily on public information, this finding supports the semistrong form of the efficient market hypothesis.
 - E. Both outperform a market index. Assuming mutual fund managers rely primarily on public information, this finding refutes the semistrong form of the efficient market hypothesis; and outperform a market index. Assuming mutual fund managers rely primarily on public information, this finding supports the semistrong form of the efficient market hypothesis.
15. If the securities market is efficient, an investor need only throw darts at the stock pages to pick securities and be just as well off.
- A. This is true because there are no differences in risk and return.
 - B. This is true because in an efficient stock market prices do not fluctuate.
 - C. This is false because professional portfolio managers prefer to generate commissions by active trading.
 - D. This is false because investors may not hold a desirable risk-return combination in their portfolio.
 - E. This is false because the markets are controlled by the institutional investors.

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16. A firm has a market value equal to its book value. Currently, the firm has excess cash of \$1,000 and other assets of \$6,000. Equity is worth \$18,000. The firm has 700 shares of stock outstanding and net income of \$1,200. What will the new earnings per share be if the firm uses its excess cash to complete a stock repurchase?
A. \$1.20 B. \$1.50 C. \$1.86 D. \$2.00 E. \$2.40
17. The Fama-French three factor model predicts the expected return on a portfolio increases:
A. linearly with its factor loading of the size factor.
B. linearly with its factor loading of the volume.
C. exponentially with its factor loading of the size factor.
D. exponentially with its factor loading of the volume factor.
E. None of these.
18. You would like to combine a risky stock with a beta of 1.8 with U.S. Treasury bills in such a way that the risk level of the portfolio is equivalent to the risk level of the overall market. What percentage of the portfolio should be invested in Treasury bills?
A. 25% B. 44% C. 50% D. 62% E. 78%
19. The flow-to-equity approach has been used by the firm to value their capital budgeting projects. The total investment cost at time 0 is \$640,000. The company uses the flow-to-equity approach because they maintain a target debt to value ratio over project lives. The company has a debt to equity ratio of 0.5. The present value of the project including debt financing is \$810,994. What is the relevant initial investment cost to use in determining the value of the project?
A. \$170,994 B. \$267,628 C. \$372,372 D. \$543,366 E. \$640,000
20. Although the three capital budgeting methods are equivalent, they all can have difficulties making computation impossible at times. The most useful methods or tools from a practical standpoint are:
A. APV (adjusted present value) because debt levels are unknown in future years.
B. WACC because projects have constant risk and target debt to value ratios.

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- C. Flow-to-equity, because of constant risk and the knowledge that managers think in terms of optimal debt to equity ratios.
- D. Both APV because debt levels are unknown in future years; and WACC because projects have constant risk and target debt to value ratios.
- E. Both WACC because projects have constant risk and target debt to value ratios; and Flow-to-equity, because of constant risk and the knowledge that managers think in terms of optimal debt to equity ratios.
21. Calculate the Macaulay duration for a 5-year \$1,000 par value bond, with a 6% coupon and a yield to maturity of 8%. Interest is paid annually.
- A. 6.44 years B. 5 years C. 4.44 years D. 2.50 years E. None of the above
22. Which of the following statements is false?
- A. Although indirect costs of bankruptcy are difficult to measure accurately, they are typically much smaller than the direct costs of bankruptcy.
- B. Bankruptcy protection can be used by management to delay the liquidation of a firm that should be shut down.
- C. Because many aspects of the bankruptcy process are independent of the size of the firm, the costs are typically higher, in percentage terms, for smaller firms.
- D. Aside from the direct legal and administrative costs of bankruptcy, many other indirect costs are associated with financial distress (whether or not the firm has formally filed for bankruptcy).
23. Assuming all of the following firms have a required return of 14%, which would you expect to have a positive present value of growth opportunities?
- A. A firm with a P/E ratio of 9 B. A firm with a P/E ratio of 6
- C. A firm with an E/P ratio of 20%
- D. None of the above firms are expected to have positive PVGO.
- E. All of the above firms are expected to have positive PVGO.

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Use the information to answer the question 24 and 25:

Firm	Portfolio Weight	Volatility	Correlation with Market Portfolio
Taggart Transcontinental	0.25	14%	0.7
Wyatt Oil	0.35	18%	0.6
Rearden Metal	0.40	15%	0.5

The volatility (standard deviation) of the market portfolio is 10%, the expected return on the market is 12%, and the risk-free rate of interest is 4%.

24. The expected return on the portfolio of the three stocks is closest to:
A. 10.0% B. 11.4% C. 11.8% D. 12.0% E. 12.2%
25. If CAPM holds and the Sharpe Ratio for Rearden Metal is closest to:
A. 0.40 B. 0.56 C. 0.80 D. 1.00 E. 1.2