

## 科目：財務管理

適用：財金系

編號：241

考生注意：

1. 依次序作答，只要標明題號，不必抄題。
2. 答案必須寫在答案卷上，否則不予計分。
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## I. 問答或計算題 (共 30 分):

1. **Cash dividends, share repurchases, and capital reductions** are all methods by which a firm can return cash to its shareholders. Compare the **advantages, disadvantages, and appropriate circumstances** for using each of these three payout methods. **(15 points)**
2. Assume the current risk-free rate is 3%, and the expected return on the stock market is 11%. The beta of AAATech Corporation is 1.1. The firm has a gross margin of 20%, a net profit margin of 12%, an inventory turnover ratio of 3.0, a total asset turnover ratio of 1.6, total debt of \$300 billion, and shareholders' equity of \$900 billion. AAATech has just paid a cash dividend of \$4.50 per share. The market expects dividends to grow at 15% annually for the next two years and at a constant rate of 8% thereafter.

Using the above information, answer the following:

- (1) Calculate AAATech's return on equity (ROE). **(2 points)**
  - (2) Calculate the required rate of return on AAATech's stock. **(2 points)**
  - (3) Estimate the intrinsic value of AAATech's stock today. **(5 points)**
3. J Co. is a fast-growing AI company planning to expand capacity. The firm currently has total assets of \$30,000,000, no debt outstanding, and expects its return on assets (ROA) to remain constant at 12% after expansion. The corporate tax rate is 20%. J Co. needs to raise \$10,000,000 and is considering one of the following financing plans:  
Plan 1: Issue \$5,000,000 of common stock and \$5,000,000 of debt at an annual interest rate of 7%.  
Plan 2: Issue \$10,000,000 of debt at an annual interest rate of 8% (no new equity).  
Required:  
Which plan should the company choose? Show your calculations and briefly explain. **(6 points)**



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## II. 選擇題（每題 2 分，共 70 分）：

1. A firm uses straight-line depreciation. If it switches to accelerated depreciation while all else remains equal, which is most likely for a positive-NPV project?  
(A) Both NPV and IRR decrease because depreciation is a non-cash expense.  
(B) NPV increases because higher early tax shields raise the present value of cash flows.  
(C) IRR increases but NPV remains unchanged because total depreciation is the same over the project's life.  
(D) NPV remains unchanged while IRR increases due to the timing of tax savings.  
(E) Both NPV and IRR remain unchanged because depreciation does not affect cash flow.
2. A firm's degree of operating leverage (DOL) increases while its degree of financial leverage (DFL) remains unchanged. Holding sales constant, which outcome is most likely?  
(A) EBIT becomes more sensitive to changes in sales, and EPS becomes more sensitive to changes in sales.  
(B) EBIT becomes less sensitive to changes in sales, while EPS becomes more sensitive to changes in EBIT.  
(C) EBIT becomes more sensitive to changes in sales, but EPS becomes less sensitive to changes in EBIT.  
(D) The firm's break-even sales level decreases because fixed costs decline.  
(E) Total risk to equity holders decreases because financial leverage is unchanged.
3. A firm's sustainable growth rate (SGR) is most likely to increase when which of the following occurs, assuming the firm maintains a constant dividend payout ratio?  
(A) The firm increases its dividend payout ratio while profitability remains unchanged.  
(B) The firm experiences a decline in profit margin but an increase in equity multiplier.  
(C) The firm improves asset turnover while maintaining its operating margins.  
(D) The firm reduces financial leverage, lowering the equity multiplier.  
(E) The firm increases dividend payments faster than earnings growth.
4. Under the dividend signaling hypothesis, an unexpected increase in dividends is most likely interpreted by investors as which of the following?  
(A) Dividend policy has no effect on firm value in efficient markets.  
(B) The increase reflects a reduction in financial risk due to lower leverage.  
(C) The firm is attempting to attract a new dividend clientele with different tax preferences.  
(D) The firm has exhausted profitable investment opportunities and therefore returns excess cash to shareholders.  
(E) Management anticipates permanently higher future earnings and cash flows.
5. Under the Modigliani–Miller framework with corporate taxes but no bankruptcy or agency costs, the firm's optimal capital structure is most accurately described as:  
(A) A structure determined primarily by managerial risk preferences.  
(B) Any mix of debt and equity because capital structure does not affect firm value.  
(C) A moderate level of debt where WACC is minimized.  
(D) A capital structure with 100% debt financing to fully maximize the interest tax shield.  
(E) A capital structure with no debt because equity is less risky.



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6. Which of the following statements comparing fundamental analysis and technical analysis is **NOT** correct?
  - (A) Fundamental analysis focuses on a company's financial condition and economic fundamentals and emphasizes security selection.
  - (B) Fundamental analysis is generally associated with short-term trading, whereas technical analysis is more commonly used for long-term investing.
  - (C) Fundamental analysis relies primarily on economic and financial theory, while technical analysis is more related to investor psychology and trading behavior.
  - (D) Technical analysis studies price patterns and trends and emphasizes market timing.
  - (E) Technical analysis studies price patterns and trends and emphasizes market timing.
7. Under the pecking order theory of capital structure, how is the market most likely to react to a firm's announcement of a new equity issuance?
  - (A) The firm's stock price increases because equity improves financial flexibility.
  - (B) The firm's stock price remains unchanged because financing choices are irrelevant to valuation.
  - (C) The firm's stock price decreases due to adverse selection and negative signaling about firm value.
  - (D) The firm's bond prices decline while the stock price remains stable.
  - (E) Both stock and bond prices increase because leverage risk is reduced.
8. A firm is evaluating whether to lease or purchase a piece of equipment. Which of the following is most likely a primary economic advantage of leasing compared with purchasing?
  - (A) Leasing always results in a lower weighted average cost of capital for the firm.
  - (B) Leasing eliminates all financial risk associated with asset ownership.
  - (C) Lease obligations are treated as off-balance sheet financing under all accounting standards.
  - (D) Leasing increases operating leverage by converting fixed costs into variable costs.
  - (E) Leasing can provide tax advantages and transfer residual value risk to the lessor.
9. A firm with high growth options is most likely to prefer:
  - (A) A policy of aggressive share repurchases funded by new debt.
  - (B) A strict residual dividend policy with consistently high dividend payouts.
  - (C) Higher financial leverage to maximize the value of interest tax shields.
  - (D) Lower financial leverage to preserve borrowing capacity and reduce financial distress risk.
  - (E) Higher dividend payouts to signal strong current profitability.
10. Which of the following managerial behaviors is most consistent with the agency costs of free cash flow hypothesis?
  - (A) Managers invest excess cash in negative NPV projects to expand the firm's size and personal influence.
  - (B) Managers distribute excess cash to shareholders through dividends or share repurchases to maximize firm value.
  - (C) Managers reduce overall investment levels to minimize business risk and earnings volatility.
  - (D) Managers increase cash holdings indefinitely to improve liquidity and operational flexibility.
  - (E) Managers issue additional equity to finance value-enhancing projects despite having excess internal funds.



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11. A firm has an all-equity beta of 0.9. If it moves to  $D/E = 1.0$  with tax rate 25%, levered beta is closest to:
- (A) 0.45
  - (B) 1.35
  - (C) 1.50
  - (D) 1.58
  - (E) 1.80
12. A firm issues three types of bonds with identical credit risk, maturity, and coupon structure: a straight (plain vanilla) corporate bond, a convertible bond, and a callable bond. The yields required by investors on these bonds are denoted as  $R_A$ ,  $R_B$ , and  $R_C$ , respectively. Assuming all other factors are held constant and markets are efficient, which of the following most accurately represents the reasonable ordering of the required yields?
- (A)  $R_A < R_B < R_C$
  - (B)  $R_B < R_C < R_A$
  - (C)  $R_B < R_A < R_C$
  - (D)  $R_C < R_B < R_A$
  - (E)  $R_B < R_A = R_C$
13. An investor purchases one share of a stock for \$70 and simultaneously buys a put option on the same stock with a strike price of \$65. The premium paid for the put option is \$6. What is the maximum possible loss of this protective put portfolio at expiration?
- (A) \$5
  - (B) \$6
  - (C) \$11
  - (D) \$12
  - (E) Unlimited
14. The correlation coefficient between a stock and the market portfolio is 0.6. The standard deviation of the market portfolio is 15%. Under which of the following conditions will the stock's beta ( $\beta$ ) be greater than 1?
- (A) The covariance between the stock and the market is positive
  - (B) The stock's expected return exceeds 18%
  - (C) The standard deviation of the stock is less than 20%
  - (D) The standard deviation of the stock is greater than 25%
  - (E) The risk-free rate increases significantly
15. According to the trade-off theory of capital structure, firms with relatively tangible assets and stable operating cash flows are most likely to:
- (A) Maintain lower leverage because tangible assets increase operating risk.
  - (B) Target higher leverage because bankruptcy costs are lower and debt capacity is higher.
  - (C) Avoid debt financing entirely to minimize financial distress.
  - (D) Rely primarily on internal financing consistent with pecking order theory.
  - (E) Hold unpredictable leverage ratios due to market timing effects.

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16. A five-year bond with a face value of \$100 is issued at par and pays annual coupons. The yield to maturity is 5%, and the bond's Macaulay duration at issuance is 4.30 years. Assume the yield remains constant over time. Which of the following statements regarding the bond's duration is **NOT** correct?
- (A) After six months have passed, the bond's duration will decrease to approximately 3.80 years.
  - (B) After one year has passed but before the coupon payment is made, the bond's duration will decrease to approximately 3.30 years.
  - (C) After one year has passed and the coupon payment has just been made, the bond's duration will decrease to approximately 3.30 years.
  - (D) After one year has passed and the coupon payment has just been made, the bond's duration will be approximately 3.55 years.
  - (E) As time passes and yield remains unchanged, the bond's duration generally declines.
17. Company A plans to retain earnings to expand its production capacity and will not pay any dividends at the end of the next two years. At the end of Year 3, the company expects to pay a cash dividend of \$4 per share. Thereafter, dividends are expected to grow at a constant rate of 5% per year indefinitely. If investors require a rate of return of 8%, what is the current intrinsic value of Company A's stock per share?
- (A) \$106
  - (B) \$111
  - (C) \$120
  - (D) \$133
  - (E) \$140
18. Using the single index model, Stock B has a beta of 1.1. The market return is 13%, and the risk-free rate is 5%. The actual return on Stock B over the period is 11%. What is Stock B's alpha?
- (A) -2.8%
  - (B) -1.6%
  - (C) 0.0%
  - (D) 1.6%
  - (E) 2.8%
19. As the level of diversification in a portfolio increases by adding a large number of securities, the portfolio's total variance will most likely approach which of the following?
- (A) Zero, because all risks can be eliminated through diversification.
  - (B) The variance of the market portfolio.
  - (C) One, assuming perfect correlation among securities.
  - (D) An infinitely large value due to increasing portfolio size.
  - (E) The average variance of the individual securities in the portfolio.
20. An 8.5% coupon bond with a par value of \$1,000 is currently trading in the market at a price of \$1,060. What is the bond's current yield?
- (A) 7.75%
  - (B) 8.02%
  - (C) 8.50%
  - (D) 8.62%
  - (E) 9.00%



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21. The risk-free rate is 3%, and the expected return on the market portfolio is 12%. A stock issued by Hsin-Yi Corporation has an expected beta of 1.1. If the stock's expected return is 13%, what is the most appropriate investment decision according to the Capital Asset Pricing Model (CAPM)?
- (A) Buy the stock because it is undervalued.
  - (B) Buy the stock because it is overvalued.
  - (C) Short-sell the stock because it is undervalued.
  - (D) Short-sell the stock because it is overvalued.
  - (E) Hold the stock because it is fairly priced.
22. Consider a one-factor economy. Portfolio X has a beta of 0.8 with respect to the factor, while Portfolio Y has a beta of 1.6. The expected returns on Portfolios X and Y are 10% and 16%, respectively. The risk-free rate is 5%. Assume that an arbitrage opportunity exists. An investor allocates \$120,000 to the risk-free asset, invests \$120,000 in Portfolio Y, and sells short \$120,000 of Portfolio X. What is the expected profit from this arbitrage strategy?
- (A) -\$1,200
  - (B) \$0
  - (C) \$1,200
  - (D) \$2,400
  - (E) \$3,600
23. The hedge ratio (delta) of a European call option on a stock is 0.65. The call and put options have the same expiration date and exercise price. What is the hedge ratio (delta) of the corresponding put option?
- (A) 0.65
  - (B) 0.35
  - (C) -0.35
  - (D) -0.65
  - (E) 1.65
24. According to the product life cycle concept, which of the following financial characteristics is most typical of a company in the start-up (introduction) stage?
- (A) High cash outflows from investing activities and high cash inflows from financing activities.
  - (B) High profitability accompanied by delayed operating cash flows.
  - (C) Stable and predictable cash flows from operating activities.
  - (D) Low levels of financial leverage and minimal reliance on external financing.
  - (E) Strong positive operating cash flows sufficient to fund capital expenditures internally.
25. Which of the following statements regarding factors affecting a bond's default (credit) risk is TRUE?
- (A) Bonds with higher coupon rates always have lower default risk.
  - (B) Greater interest rate risk directly implies higher default risk.
  - (C) Bonds with shorter maturities typically have higher default risk than those with longer maturities.
  - (D) Default risk tends to decrease during economic downturns.
  - (E) Bonds with higher credit ratings generally have lower default risk.



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26. In bond portfolio management, immunization strategies are primarily designed to protect against which type of risk?
- (A) Credit (default) risk
  - (B) Inflation risk
  - (C) Liquidity risk
  - (D) Firm-specific risk
  - (E) Interest rate risk
27. Which of the following characteristics is most commonly associated with value stocks?
- (A) High expected earnings growth rates
  - (B) High stock turnover rates
  - (C) Low dividend yields
  - (D) High price-to-book (P/B) ratios
  - (E) Low price-to-earnings (P/E) ratios
28. If a bond trades in an underdeveloped secondary market with very low trading volume, an investor who urgently needs cash may not be able to sell the bond quickly at a fair price. This situation primarily exposes the investor to which type of risk?
- (A) Reinvestment risk
  - (B) Liquidity risk
  - (C) Credit (default) risk
  - (D) Interest rate risk
  - (E) Inflation risk
29. Which of the following statements regarding a bond's interest rate risk is **CORRECT**?
- (A) Bonds trading at a premium always have higher interest rate risk than bonds trading at a discount.
  - (B) Low-coupon bonds are less sensitive to interest rate changes than high-coupon bonds.
  - (C) Bonds with lower coupon rates tend to have lower interest rate risk.
  - (D) Bonds with longer durations are more sensitive to changes in interest rates.
  - (E) Bonds with shorter maturities generally have greater interest rate risk than those with longer maturities.
30. Which of the following changes would **NOT** increase the value of a call option, all else being equal?
- (A) An increase in dividend payments on the underlying stock
  - (B) An increase in the risk-free interest rate
  - (C) An increase in the volatility of the underlying asset's price
  - (D) An increase in the price of the underlying asset
  - (E) An increase in the time remaining until expiration
31. Which of the following is **NOT** an advantage of raising funds through the issuance of corporate bonds (debt financing)?
- (A) Interest payments provide tax shield benefits.
  - (B) The cost of debt is generally lower than the cost of common equity and preferred stock.
  - (C) The firm's current ratio increases as a result of issuing bonds.
  - (D) Financial leverage decreases following the issuance of bonds.
  - (E) Existing shareholders' ownership is not diluted.

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32. Kumamoto Corporation has a price-to-earnings (P/E) ratio of 28. During the current year, the firm reports average common shareholders' equity of \$300,000, net income of \$75,000, and preferred dividends of \$15,000. What is the company's price-to-book (P/B) ratio?
- (A) 12.6  
(B) 10.4  
(C) 9.3  
(D) 8.4  
(E) 5.6
33. A company's expected return on equity (ROE) is 5%. The company's dividend payout policy is 40%. Assuming the firm does not use external financing, what is the company's expected earnings growth rate?
- (A) 2%  
(B) 3%  
(C) 5%  
(D) 8.33%  
(E) 10%
34. Which of the following actions would **NOT** increase a firm's return on assets (ROA)?
- (A) Reducing operating expenses while maintaining the same level of revenue.  
(B) Reducing the proportion of property, plant, and equipment financed with long-term capital.  
(C) Increasing the firm's total asset turnover ratio.  
(D) Increasing sales while total assets remain constant.  
(E) Improving the firm's net profit margin.
35. Which of the following events is considered an example of unsystematic risk?
- (A) The central bank lowers its discount rate.  
(B) The government announces a downward revision of its economic growth forecast.  
(C) The U.S. government imposes anti-dumping tariffs on a specific product exported from Taiwan.  
(D) The inflation rate rises sharply.  
(E) A broad decline in the overall stock market.