

# 國立臺灣師範大學 109 學年度碩士班招生考試試題

科目：財務管理

適用系所：管理研究所

注意：1.本試題共 7 頁，請依序在答案卡上作答，否則不予計分。

**Choose the one alternative that best completes the statement or answers the question.  
Four points for each question.**

1. ABC stock has the following probability distribution of expected prices one year from now:

State	Probability	Price
1	0.25	50
2	0.40	60
3	0.35	70

If you buy ABC today for 55 and it will pay a dividend of 4 per share during the year, what is your expected holding-period return on ABC?

- A. 17.72%
  - B. 18.89%
  - C. 17.91%
  - D. 18.18%
  - E. 19.21%
2. You invest \$100 in a risky asset with an expected rate of return of 0.11 and a standard deviation of 0.21 and a T-bill with a rate of return of 0.045. What percentages of your money must be invested in the risk-free asset and the risky asset, respectively, to form a portfolio with a standard deviation of 0.08?
- A. 30.1% and 69.9%
  - B. 50.5% and 49.50%
  - C. 60.0% and 40.0%
  - D. 61.9% and 38.1%
  - E. Cannot be determined.
3. You invest \$100 in a risky asset with an expected rate of return of 0.11 and a standard deviation of 0.21 and a T-bill with a rate of return of 0.045. A portfolio that has an expected outcome of \$114 is formed by
- A. investing \$100 in the risky asset.
  - B. investing \$80 in the risky asset and \$20 in the risk-free asset.
  - C. borrowing \$46 at the risk-free rate and investing the total amount (i.e., \$146) in the risky

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asset.

D. investing \$43 in the risky asset and \$57 in the risk-free asset.

E. Such a portfolio cannot be formed.

4. You are considering investing \$1,000 in a T-bill that pays 0.05 and a risky portfolio,  $P$ , constructed with two risky securities,  $X$  and  $Y$ . The weights of  $X$  and  $Y$  in  $P$  are 0.60 and 0.40, respectively.  $X$  has an expected rate of return of 0.14 and variance of 0.01, and  $Y$  has an expected rate of return of 0.10 and a variance of 0.0081. If you want to form a portfolio with an expected rate of return of 0.10, what percentages of your money must you invest in the T-bill,  $X$ , and  $Y$ , respectively, if you keep  $X$  and  $Y$  in the same proportions to each other as in portfolio  $P$ ?

A. 0.25; 0.45; 0.30

B. 0.19; 0.49; 0.32

C. 0.32; 0.41; 0.27

D. 0.50; 0.30; 0.20

E. Cannot be determined.

5. When borrowing and lending at a risk-free rate are allowed, which capital allocation line (CAL) should the investor choose to combine with the efficient frontier?

I) The one with the highest reward-to-variability ratio.

II) The one that will maximize his utility.

III) The one with the steepest slope.

IV) The one with the lowest slope.

A. I and III

B. I and IV

C. II and IV

D. I only

E. I, II, and III

6. Both standard deviation and beta are a measure risk, but they are different in that beta measures

A. both systematic and unsystematic risk.

B. only systematic risk, while standard deviation is a measure of total risk.

C. only unsystematic risk, while standard deviation is a measure of total risk.

D. both systematic and unsystematic risk, while standard deviation measures only systematic risk.

E. total risk, while standard deviation measures only nonsystematic risk.

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7. As a financial analyst, you are tasked with evaluating a capital-budgeting project. You were instructed to use the internal rate of return (IRR) method, and you need to determine an appropriate hurdle rate. The risk-free rate is 4%, and the expected market rate of return is 11%. Your company has a beta of 1.4, and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be
- A. 13.8%.
  - B. 7%.
  - C. 15%.
  - D. 4%.
  - E. 1.4%.
8. ABC Company has a beta of 1.0. The annualized market return yesterday was 11%, and the risk-free rate is currently 5%. You observe that ABC had an annualized return yesterday of 14%. Assuming that markets are efficient, this suggests that
- A. bad news about ABC was announced yesterday.
  - B. good news about ABC was announced yesterday.
  - C. no news about ABC was announced yesterday.
  - D. interest rates rose yesterday.
  - E. interest rates fell yesterday.
9. The assumptions concerning the shape of utility functions of investors differ between conventional theory and prospect theory. Conventional theory assumes that utility functions are \_\_\_\_\_, whereas prospect theory assumes that utility functions are \_\_\_\_\_.
- A. concave and defined in terms of wealth; s-shaped (convex to losses and concave to gains) and defined in terms of losses relative to current wealth
  - B. convex and defined in terms of losses relative to current wealth; s-shaped (convex to losses and concave to gains) and defined in terms of losses relative to current wealth
  - C. s-shaped (convex to losses and concave to gains) and defined in terms of losses relative to current wealth; concave and defined in terms of wealth
  - D. s-shaped (convex to losses and concave to gains) and defined in terms of wealth; concave and defined in terms of losses relative to current wealth
  - E. convex and defined in terms of wealth; concave and defined in terms of gains relative to current wealth

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## 10. Benchmark error

- A. refers to the use of an incorrect market proxy in tests of the CAPM.
- B. can result in inconclusive tests of the CAPM.
- C. can result in incorrect evaluation measures for portfolio managers.
- D. refers to the use of an incorrect market proxy in tests of the CAPM and can result in inconclusive tests of the CAPM.
- E. All of the above answers are correct.

## 11. Consider two bonds, A and B. Both bonds presently are selling at their par value of \$1,000. Each pays interest of \$120 annually. Bond A will mature in five years, while bond B will mature in six years. If the yields to maturity on the two bonds change from 12% to 10%,

- A. both bonds will increase in value, but bond A will increase more than bond B.
- B. both bonds will increase in value, but bond B will increase more than bond A.
- C. both bonds will decrease in value, but bond A will decrease more than bond B.
- D. both bonds will decrease in value, but bond B will decrease more than bond A.
- E. None of the options are correct.

## 12. A bond has a par value of \$1,000, a time to maturity of 20 years, a coupon rate of 10% with interest paid annually, a current price of \$850, and a yield to maturity of 12%. Intuitively and without using calculations, if interest payments are reinvested at 10%, the realized compound yield on this bond must be

- A. 9.80%.
- B. 10.00%.
- C. 10.9%.
- D. 12.0%.
- E. 12.4%.

## 13. Which of the following combinations will result in a sharply-increasing yield curve?

- A. Increasing future expected short rates and increasing liquidity premiums
- B. Decreasing future expected short rates and increasing liquidity premiums
- C. Increasing future expected short rates and decreasing liquidity premiums
- D. Increasing future expected short rates and constant liquidity premiums
- E. Constant future expected short rates and increasing liquidity premiums

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14. Which of the following bonds has the longest duration?
- A. A 15-year maturity, 0% coupon bond.
  - B. A 15-year maturity, 9% coupon bond.
  - C. A 20-year maturity, 9% coupon bond.
  - D. A 20-year maturity, 0% coupon bond.
  - E. Cannot tell from the information given.
15. A 9%, 16-year bond has a yield to maturity of 11% and duration of 9.25 years. If the market yield decreases by 32 basis points, how much change will there be in the bond's price?
- A. -1.85%
  - B. +1.85%
  - C. -2.67%
  - D. +2.67%
  - E. +7.21%
16. Suppose that ABC Company has an ROA of 7% and pays a 6% coupon on its debt. ABC has a capital structure that is 70% equity and 30% debt. Relative to a firm that is 100% equity-financed, ABC's net profit will be \_\_\_\_\_, and its ROE will be \_\_\_\_\_.
- A. lower; lower
  - B. higher; higher
  - C. higher; lower
  - D. lower; higher
  - E. It is impossible to predict
17. According to the put-call parity theorem, the value of a European put option on a non-dividend paying stock is equal to
- A. the call value plus the present value of the exercise price plus the stock price.
  - B. the call value plus the present value of the exercise price minus the stock price.
  - C. the present value of the stock price minus the exercise price minus the call price.
  - D. the present value of the stock price plus the exercise price minus the call price.
  - E. None of the options are correct.
18. Portfolio A consists of 500 shares of stock and 500 calls on that stock. Portfolio B consists of 800 shares of stock. The call delta is 0.6. Which portfolio has a higher dollar exposure to a change in stock price?
- A. Portfolio A
  - B. Portfolio B

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- C. The two portfolios have the same delta exposure.
  - D. Portfolio A if the stock price increases and portfolio B if it decreases.
  - E. Portfolio B if the stock price increases and portfolio A if it decreases.
19. Suppose that the risk-free rates in the United States and in the United Kingdom are 5% and 4%, respectively. The spot exchange rate between the dollar (USD) and the pound (GBP) is USD 1.80 per GBP. What should the futures price of the pound for a one-year contract be to prevent arbitrage opportunities, ignoring transactions costs?
- A. GBPUSD 1.62
  - B. GBPUSD 1.72
  - C. GBPUSD 1.82
  - D. GBPUSD 1.92
  - E. GBPUSD 1.98
20. ABC Company just paid a dividend of \$ 0.46 a share. The dividends are expected to increase by 30 percent a year for the next 2 years and then increase by 2 percent annually thereafter. What is the current value of a share if the appropriate discount rate is 15 percent?
- A. \$5.72
  - B. \$6.91
  - C. \$5.38
  - D. \$6.26
  - E. \$6.42
21. The interest tax shield is a key reason why
- A. the value of an unlevered firm is equal to the value of a levered firm.
  - B. the net cost of debt to a firm is generally less than the cost of equity.
  - C. firms tend to minimize their borrowing.
  - D. the cost of debt is equal to the cost of equity for a firm with a debt-to-equity ratio of 1.
  - E. firms prefer equity financing over debt financing.
22. ABC Company has 14,500 shares of stock outstanding with a par value of \$1 per share and a market value of \$5.80 a share. What type of stock split would be best if the stock's proper trading range centers on \$16 a share? (Hint: For example, in a two-for-one stock split, an additional share is given for each share held by a shareholder.)
- A. Stock split of eight-for-three
  - B. Stock split of eleven-for-four
  - C. Reverse stock split of three-for-one

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- D. Reverse stock split of three-for-eight  
E. Reverse stock split of four-for-eleven
23. ABC Company has a target capital structure of 40 percent debt and 60 percent equity. The pretax cost of debt is 6.3 percent, the tax rate is 35 percent, and the cost of equity is 14.6 percent. The firm is considering a project that is equally as risky as the overall firm. The project has an initial cash outflow of \$1.92 million and annual cash inflows of \$562,000 at the end of each year for 4 years. What is the NPV of the project?
- A. -\$153,776  
B. -\$148,914  
C. +\$157,001  
D. +\$161,950  
E. +\$174,087
24. Consider both a call option and a put option written on the S&P 500 index. When the S&P 500 index becomes less volatile, which of the following statements is correct?
- A. The call option becomes cheaper whereas the put option becomes more expensive.  
B. The put option becomes cheaper whereas the call option becomes more expensive.  
C. Both the call and the put become cheaper.  
D. Both the call and the put become more expensive.  
E. None of the above answers are correct.
25. Higher dividend-payout policies have a \_\_\_\_\_ impact on the value of the call and a \_\_\_\_\_ impact on the value of the put compared to lower dividend-payout policies.
- A. negative; negative  
B. positive; positive  
C. positive; negative  
D. negative; positive  
E. zero; zero

