

# 國立中正大學

## 112 學年度碩士班招生考試

### 試題

#### [第 1 節]

|      |        |
|------|--------|
| 科目名稱 | 財務管理   |
| 系所組別 | 財務金融學系 |

#### —作答注意事項—

※作答前請先核對「試題」、「試卷」與「准考證」之系所組別、科目名稱是否相符。

1. 預備鈴響時即可入場，但至考試開始鈴響前，不得翻閱試題，並不得書寫、畫記、作答。
2. 考試開始鈴響時，即可開始作答；考試結束鈴響畢，應即停止作答。
3. 入場後於考試開始 40 分鐘內不得離場。
4. 全部答題均須在試卷（答案卷）作答區內完成。
5. 試卷作答限用藍色或黑色筆（含鉛筆）書寫。
6. 試題須隨試卷繳還。

**Part A. Multiple Choice Questions (75 points, 3 points for each question. Please select the best answer.)**

1. You are expecting to receive \$200 a month for four years from an insurance contract. At a discount rate of 6 percent, compounded monthly, what present value of this contract?  
A. \$8,797.40    B. \$8,409.56    C. \$8,198.79    D. \$8,516.06
2. Which one of the following statements is correct?  
A. The pretax profit is equal to the aftertax profit at the accounting break-even point.  
B. The contribution margin is equal to sales minus fixed costs.  
C. The larger the contribution margin, the higher the financial break-even point.  
D. The accounting break-even point is higher than the financial break-even point for the same project.
3. What is the Net Present Value of a project with an initial cost of \$36,900 and cash inflows of \$13,400, \$21,600, and \$10,000 for Years 1 to 3, respectively? The discount rate is 13 percent.  
A. -\$287.22    B. -\$1,195.12    C. -\$1,350.49    D. \$204.36
4. CCU Inc. is considering a project which will require additional inventory of \$120,000, will decrease accounts payable by \$24,000, and will increase accounts receivable by \$45,000. What is the initial project cash flow needed for net working capital?  
A. \$-51,000    B. \$51,000    C. \$189,000    D. \$99,000
5. The accounting break-even level of sales will decrease when the:  
A. fixed costs increase.    B. depreciation expense decreases.  
C. contribution margin decreases.    D. variable costs per unit increase.
6. Based on the discounted payback rule, you should accept an investment project if its discounted payback period:  
A. exceeds some pre-specified period of time.  
B. is positive and rejected if it is negative.  
C. is less than the payback period.  
D. is less than some pre-specified period of time.
7. The capital market line (CML):  
A. and the characteristic line both describe the same function.  
B. lies tangent to the opportunity set at its minimum point.  
C. has a vertical intercept at the risk-free rate of return.  
D. has a horizontal intercept at the market beta.

8. CCU bio-tech invested in a project that returned 16.67 percent during a period when inflation averaged 3.26 percent. What real rate of return did CCU bio-tech earn on its project?  
A. 13.41%    B. 13.03%    C. 12.87%    D. 12.99%
9. If the required rate of return of a project is zero, then:  
A. the timing of the project's cash flows has no bearing on the value of the project.  
B. the project will always be accepted.  
C. the project will always be rejected.  
D. whether the project is accepted or rejected will depend on the timing of the cash flows.
10. The present value break-even point is superior to the accounting break-even point because the present value break-even method:  
A. is more complicated to calculate.  
B. covers the economic opportunity costs of the investment.  
C. covers the fixed costs of production, which the accounting break-even does not.  
D. provides an economic profit over and above the required rate of return.
11. According to the pecking-order theory, a firm's leverage ratio is determined by:  
A. the value of the tax benefit of debt.  
B. equating the tax benefit of debt to the financial distress costs of debt.  
C. the firm's financing needs.  
D. the market rate of interest.
12. CCU is expected to pay annual dividends of \$1.40, \$1.75, and \$2.00 a share over the next three years, respectively. After that, the dividend is expected to remain constant. What is the current value per share at a discount rate of 14 percent?  
A. \$12.22    B. \$13.57    C. \$13.08    D. \$12.82
13. All else constant, a coupon bond that is selling at a premium, must have:  
A. a coupon rate that is equal to the yield to maturity.  
B. a market price that is less than par value.  
C. a coupon rate that is less than the yield to maturity.  
D. a yield to maturity that is less than the coupon rate.
14. The term structure of interest rates reflects the:  
A. real rate, inflation premium, interest rate risk premium, and the liquidity premium.  
B. real rate of interest plus the inflation premium.  
C. pure time value of money.  
D. nominal interest rate plus the interest rate risk premium.

15. A limit order to buy:
- A. will be executed either at the limit price or at the end-of-day price.
  - B. guarantees both the purchase price and the order fulfillment.
  - C. is executed only if the purchase price is less than the limit amount.
  - D. guarantees the purchase price but not the order execution.
16. A growth-stock portfolio is best described as having a:
- A. high PE ratio as compared to the overall market.
  - B. lower risk premium than the overall market.
  - C. low level of systematic risk and a high level of non-systematic risk.
  - D. relatively high value for  $\epsilon$ .
17. The beta of a firm is more likely to be high under which two conditions?
- A. high cyclical business activity and low operating leverage
  - B. high cyclical business activity and high operating leverage
  - C. low cyclical business activity and low financial leverage
  - D. low cyclical business activity and low operating leverage
18. The separation theory states that an investor will:
- A. choose between any efficient portfolio and a riskless asset to generate the desired expected return.
  - B. choose a portfolio from the efficient set based on individual risk tolerance.
  - C. combine a riskless asset with the tangency portfolio based on their risk tolerance level.
  - D. combine a riskless asset with the minimum variance portfolio based on their risk tolerance level.
19. According to MM Proposition II with no taxes, the:
- A. return on assets is determined by financial risk.
  - B. required return on equity is a linear function of the firm's debt-equity ratio.
  - C. cost of equity is inversely related to the firm's debt-equity ratio.
  - D. required return on assets exceeds the weighted average cost of capital.
20. An efficient set of portfolios is comprised of:
- A. a complete opportunity set.
  - B. the portion of the opportunity set located below the minimum variance portfolio.
  - C. only the minimum variance portfolio.
  - D. the dominant portion of the opportunity set.

21. Which of the following factors would most likely be included in a three-factor APT model?
- A. GNP, interest rates, and PE ratio.
  - B. PE ratio, price-to-book ratio, and firm size.
  - C. inflation, GNP, and interest rates.
  - D. firm size, inflation, and GNP.
22. If the securities market is efficient, an investor need only throw darts at the stock pages to pick securities. There is no point for portfolio management.
- A. This is true because there would be no significant difference in risk and return.
  - B. This is true because in an efficient stock market all portfolios earn the market rate of return.
  - C. This is false because the markets are controlled by the institutional investors.
  - D. This is false because investors may not hold a desirable risk-return combination.
23. Which one of the following statements is true?
- A. Both APT and CAPM argue that expected excess return must be proportional to the beta(s).
  - B. APT and CAPM are the only quantitative approaches to measure expected returns in risky assets.
  - C. Both CAPM and APT are empirical models.
  - D. CAPM assigns a beta of 1 to the market while APT assigns the market a beta of zero.
24. The CAPM has an advantage over dividend discount model (DDM) because the CAPM:
- A. explicitly adjusts for risk.
  - B. applies to firms that pay dividends.
  - C. specifically considers a firm's degree of operating leverage.
  - D. is not influenced by the change in the overall market over time.
25. Preferred stock dividends:
- A. become a debt of the firm if unpaid.
  - B. can be deferred indefinitely.
  - C. are only paid if common stock dividends are also paid.
  - D. have priority over debt interest payments but not common stock dividends.

**Part B. Problem Sets (25 Points)**

1. The stock price of CCU Inc. will be either \$60 or \$80 at the end of the year. Call options are available with one year to expiration. The current yield of T-bills is 6 %.
- a. Suppose the current price of the stock is \$70. What is the value of the call option if the exercise price is \$50 per share? (5 points)
  - b. Suppose the exercise price is \$55 in part(a.). What is the value of the call option now? (5 points)

2. Assume that the returns on securities are generated by the following model:

$$R_{i,t} = E(R_{i,t}) + \beta_{i1}F_{1,t} + \beta_{i2}F_{2,t}$$

$R_{i,t}$  is the return on security  $i$  at time  $t$ .  $F_{1,t}$  and  $F_{2,t}$  are two macro-economic factors with zero mean and zero covariance. There are four securities with characteristics as follows:

| Asset | $\beta_1$ | $\beta_2$ | E(R) |
|-------|-----------|-----------|------|
| A     | 1         | 1.5       | 0.2  |
| B     | 0.5       | 2         | 0.2  |
| C     | 1         | 0.5       | 0.1  |
| D     | 1.5       | 0.75      | 0.1  |

- Form a portfolio with asset A and B, with a portfolio that has no exposure on factor F1. What is the expected return and the  $\beta$  coefficients of your portfolio? (5 points)
- Construct a portfolio with asset C and D, with a portfolio that has no exposure on factor F1. What is the expected return and the  $\beta$  coefficients of your portfolio? (5 points)
- Following (a) and (b). If there is a risk-free asset with an expected return of 5%, please describe how to arbitrage if there is any arbitrage opportunity. (5 points)