國立臺灣師範大學 108 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 4 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. Five points for each question.

1. Clarissa wants to fund a growing perpetuity that will pay \$5000 per year to a local museum, starting next year. She wants the annual amount paid to the museum to grow by 5% per year. Given that the interest rate is 8%, how much does she need to fund this perpetuity?
   A) \$62,500.00
   B) \$102,112.33
   C) \$143,445.65
   D) \$166,666.67

2. A perpetuity will pay \$1000 per year, starting five years after the perpetuity is purchased. What is the present value (PV) of this perpetuity on the date that it is purchased, given that the interest rate is 4%?
   A) \$1410
   B) \$20,582
   C) \$21,370
   D) \$34,604

3. A bank offers a loan that will requires you to pay 6% interest compounded monthly. Which of the following is closest to the effective annual rate (EAR) charged by the bank?
   A) 5.84%
   B) 6.00%
   C) 6.17%
   D) 72.00%

4. How are investors in zero-coupon bonds compensated for making such an investment?
   A) Such bonds are purchased at their face value and sold at a premium at a later date.
   B) The bond makes regular interest payments.
   C) Such bonds are purchased at a discount to their face value.
   D) The face value of these bonds is less than the value of the bond when the bond matures.

5. Which of the following bonds is trading at a premium?
   A) a five-year bond with a \$2000 face value whose yield to maturity is 7.0% and coupon rate is 7.2% APR paid semiannually
   B) a ten-year bond with a \$4000 face value whose yield to maturity is 6.0% and coupon rate is 5.9% APR paid semiannually
   C) a 15-year bond with a \$10,000 face value whose yield to maturity is 8.0% and coupon rate is 7.8% APR paid semiannually
   D) a two-year bond with a \$50,000 face value whose yield to maturity is 5.2% and coupon rate is 5.2% APR paid monthly

6. Google presently pays an annual dividend of $1.50 per share and it is expected that these dividend payments will continue indefinitely. If Google's equity cost of capital is 12%, then the value of a share of Google's stock is closest to:
A) $10.00
B) $15.00
C) $14.00
D) $12.50

7. Google has a dividend yield of 4.5% and a cost of equity capital of 12%. Google's dividends are expected to grow at a constant rate indefinitely. The growth rate of Google's dividends is closest to:
A) 7.5%
B) 5.5%
C) 16.5%
D) 12%

8. You expect Google will have earnings per share of $3 this year and expect that they will pay out $1.50 of these earnings to shareholders in the form of a dividend. Google's return on new investments is 15% and their equity cost of capital is 12%. The value of a share of Google's stock is closest to:
A) $39.25
B) $20.00
C) $33.35
D) $12.50

9. Suppose you bought a British consol for $800. The consol pays you an annual interest payment of $40. What is the yield to maturity on the consol?
A) 0.05
B) 0.06
C) 0.07
D) 0.08

10. Which of the following statements is FALSE?
A) Expected return should rise proportionately with volatility.
B) Investors would not choose to hold a portfolio that is more volatile unless they expected to earn a higher return.
C) Smaller stocks have lower volatility than larger stocks.
D) The largest stocks are typically more volatile than a portfolio of large stocks.

11. A portfolio of stocks can achieve diversification benefits if the stocks that comprise the portfolio are
A) not perfectly correlated.
B) perfectly correlated.
C) susceptible to common risks only.
D) both B and C

12. Which of the following is NOT a systematic risk?
A) the risk that oil prices rise, increasing production costs
B) the risk that the economy slows, reducing demand for your firm's products
C) the risk that the Federal Reserve raises interest rates
D) the risk that your new product will not receive regulatory approval

13. A portfolio comprises Coke (beta of 1.2) and Wal-Mart (beta of 0.9). The amount invested in Coke is $20,000 and in Wal-Mart is $30,000. What is the beta of the portfolio?
A) 1.02
B) 1.15
C) 1.26
D) 1.19

14. Which of the following statements is FALSE?
A) Because all investors should hold risky securities in the same proportions as the efficient portfolio, their combined portfolio will also reflect the same proportions as the efficient portfolio.
B) When the Capital Asset Pricing Model (CAPM) assumptions hold, choosing an optimal portfolio is relatively straightforward: it is the combination of the risk-free investment and the market portfolio.
C) Graphically, when the tangent line goes through the market portfolio, it is called the security market line (SML).
D) A portfolio's risk premium and volatility are determined by the fraction that is invested in the market.

15. A stock has a beta of 1.2 and an expected return of 16%. The risk-free rate is 5%. If a portfolio of the two assets has an expected return of 8%, what is its beta?
A) 0.227
B) 0.327
C) 0.527
D) 1

16. For an unlevered firm, the cost of capital of the firm can be determined by using the
A) yield on the traded debt.
B) Capital Asset Pricing Model.
C) dividend yield.
D) preferred stock yield.

17. IBM expects to pay a dividend of $4 next year and expects these dividends to grow at 7% a year. The price of IBM is $90 per share. What is IBM's cost of equity capital?
A) 9.65%
B) 10.23%
C) 10.89%
D) 11.44%

18. Google has $10 million of outstanding equity and $5 million of bank debt. The bank debt costs 5% per year. The estimated equity beta is 2. If the market risk premium is 7% and the risk-free rate is 4%, compute the weighted average cost of capital if the firm’s tax rate is 30%.
A) 13.16%
B) 13.52%
C) 13.76%
D) 14.21%

19.

Price ($)	Number of Shares Bid
5.00	600,000
5.25	700,000
5.50	850,000
5.75	800,000
6.00	650,000
6.25	400,000
6.50	150,000

Google is selling 2 million shares of stock in an auction IPO. At the end of the bidding period they have received the bids shown above. Which of the following is closest to the price at which the shares will be offered?

A) $5.50
B) $5.75
C) $6.00
D) $6.25

20. Consider two firms, With and Without, that have identical assets that generate identical cash flows. Without is an all-equity firm, with 1 million shares outstanding that trade for a price of $24 per share. With has 2 million shares outstanding and $12 million in debt at an interest rate of 5%. According to Modigliani–Miller's (M&M) Proposition I, the stock price for With is closest to:

A) $8.00
B) $6.00
C) $24.00
D) $12.00