**Final**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Multiple Choices (40\*2.5=100)***

*Use the following information to answer the questions 1-3*

The cost of project = $100,000. You expect the project to make $500,000 in seven years (CF of year 7 = $500,000). Your cost of capital = 20%.

1) The NPV for this project =:

A) $29,201

B) $39,500

C) $129,201

D) $139,500

2) The IRR for this project =:

A) 15.65%

B) 18.94%

C) 20.01%

D) 25.85%

3) The decision that you should make for this project is

A) reject it since the NPV < 0.

B) reject it since the NPV > 0.

C) accept it since the IRR < 20%.

D) accept it since the IRR > 20%.

You start to plan a big project. The initial purchase of the land and materials will cost $100 million today. The project will generate $16 million of income per year for the next 12 years. At the end of the 12th year, you will need to spend $20 million to restore the land (Hint: CF in year 12 = -4 million).

4) the IRR =?

A) 0%

B) 10.6%

C) 12.3%

D) 72.0%

*Use the table for the questions 5-9*

Consider the following two projects:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Project** | **Year 0**  **CF** | **Year 1**  **CF** | **Year 2**  **CF** | **Year 3**  **CF** | **Year 4**  **CF** | **Cost of capital** |
| A | -100 | 40 | 50 | 60 | 10 | 15% |
| B | -73 | 30 | 30 | 30 | 30 | 15% |

5) The IRR of project A =?

A) 7.7%

B) 21.6%

C) 23.3%

D) 42.9%

6) The IRR of project B =?

A) 21.6%

B) 23.3%

C) 42.9%

D) 7.7%

7) Which of the following statements is correct?

A) Accept project A since its IRR > 15%.

B) Reject project B since its NPV > 0.

C) Accept project A since its NPV < 0.

D) Accept project B since its IRR < 15%.

8) The maximum number of IRRs that can be found for project B is:

A) 3

B) 1

C) 2

D) 0

9) The crossover rate is:

A) 27.65%

B) 15.31%

C) 20.58%

D) 33.26%

The two projects are as follows. Discount rate = 10%.

Project X Project Y

Year Cash-Flow Cash-Flow

0 -$100,000 -$100,000

1 50,000 10,000

2 40,000 30,000

1. 30,000 40,000

4. 10,000 60,000

1. Calculate the payback period of project X
2. 1.33 years
3. 2.33 years
4. 3.33 years
5. 4.33 years
6. Calculate the crossover rate.
7. 6.93%
8. 6.58%
9. 10.00%
10. 7.17%
11. Imagine that discount is 5%, and the two projects are mutually exclusive, which project shall you choose?
12. Project X
13. Project Y
14. Both
15. None
16. Imagine that discount is 11%, and the two projects are mutually exclusive, which project shall you choose?
17. Project X
18. Project Y
19. Both
20. None

14. Over the past 50 years, which of the following offered the lowest return?

A) Small stocks

B) Treasury Bills (T-bills)

C) S&P 500 index

D) Corporate bonds

15. Over the past 50 years, which of the following offered the highest return?

A) Small stocks

B) Treasury Bills (T-bills)

C) S&P 500 index

D) Corporate bonds

16. Over the past 50 years, which of the following had the largest fluctuations?

A) Small stocks

B) Treasury Bills (T-bills)

C) S&P 500 index

D) Corporate bonds

*Use the table for the questions 17-19.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Current Stock Price ($)** | **Probability**  ***PR*** | **Stock Price in One Year ($)** | **Return**  ***R*** |
|  | 25% | $35 | 40% |
| $25 | 50% | $25 | 0% |
|  | 25% | $20 | -20% |

17. The expected return =?:

A) 6.67%

B) 5.00%

C) 10%

D) 0.00%

18. The variance of the return =?:

A) 5.00%

B) 4.75%

C) 3.625%

D) 3.75%

19. The standard deviation of the return on Alpha Corporation is closest to:

A) 22.4%

B) 19.0%

C) 21.8%

D) 19.4%

*Use the table for the questions 20-22.*

|  |  |  |
| --- | --- | --- |
| **Date** | **Price ($)** | **Dividend ($)** |
| December 31, 2014 | $14.64 |  |
| January 26, 2015 | $13.35 | $0.10 |
| April 28, 2015 | $9.14 | $0.10 |
| July 29, 2015 | $10.74 | $0.10 |
| October 28, 2015 | $8.02 | $0.10 |
| December 30, 2015 | $7.72 |  |

20. Assume that you bought the stock on 12/31/2014. You sold it after the dividend had been paid on 1/26/2015. Your dividend yield for this period = ?

A) -8.15%

B) 0.75%

C) 0.70%

D) -8.80%

21. Assume that you bought the stock on 12/31/2014. You sold it after the dividend had been paid on 1/26/2015. Your capital gains rate (yield) for this period = ?

A) 0.75%

B) 0.70%

C) -8.80%

D) -8.15%

22. Assume that you bought the stock on 12/31/2014. You sold it after the dividend had been paid on 1/26/2015. Your total return rate (yield) for this period =?:

A) 0.75%

B) -8.80%

C) 0.70%

D) -8.15%

23. Which of the following is NOT a firm specific risk (unsystematic risk)?

A) The risk that oil prices go up

B) The risk of a firm’s liability lawsuit

C) The risk that the CEO of a firm is killed in a car accident

D) The risk of the firm lost a key employee to a competitor

24. Which of the following is NOT a systematic risk?

A) The risk that oil prices go up

B) The risk that the Fed raises interest rates

C) The risk that the economy slows down

D) The risk that the new drug does not receive regulatory approval

*use the following information to answer the questions 25-27.*

|  |  |  |
| --- | --- | --- |
| Company | Ticker | Beta |
| A | A | 2.77 |
| B | B | 0.73 |
| C | C | 0.90 |

25. If the market risk premium = 6% and the risk free rate = 4%, then the expected return of A company = ?

A) 10.0%

B) 16.2%

C) 17.1%

D) 20.6%

26. If the market risk premium = 6% and the risk free rate = 4%, then the expected return of C company = ?

A) 5.4%

B) 9.4%

C) 10.0%

D) 10.4%

27. If the market’s expected return = 11% and the risk free rate = 4%, then the expected return of B = ?

A) 9.1%

B) 10.3%

C) 11.0%

D) 12.0%

*Use the information for the questions 28-29.*

Suppose that in the coming year, you expect E stock to have a volatility = 42% and a beta = 0.9, and M’s stock to have a volatility = 24% and a beta = 1.1. The risk free rate = 4% and the market's expected return = 12%.

28. Which stock has the highest total risk?

A) M because it has a lower volatility

B) M because it has a higher Beta

C) E because it has a higher volatility

D) E because it has a lower beta

29. Which stock has the highest systematic risk?

A) M because it has a lower volatility

B) M because it has a higher Beta

C) E because it has a higher volatility

D) E because it has a lower beta

*Use the information for the questions 30-33*

Suppose you invest $20,000 or 200 shares of firm A at $50/ share, 200 shares of L at $30/ share, and 100 shares of B at $40/ share.

30. The weight on A your portfolio = ?

A) 50%

B) 40%

C) 30%

D) 20%

31. The weight on L in your portfolio = ?

A) 40%

B) 20%

C) 50%

D) 30%

32. The weight on L in your portfolio = ?

A) 50%

B) 40%

C) 20%

D) 30%

33. Suppose next year B has a return = 12.5%, L has a return = 20%, and A has a return = -10%. The return on your portfolio over the year = ?

A) 0%

B) 7.5%

C) 3.5%

D) 5.0%

An investor currently holds the following portfolio: He invested 30% of the fund in Apple with Beta equal 1.1. He also invested 40% in GE with Beta equal 1.6. The rest of his fund goes to Ford, with Beta equal 2.2. Use the above information to answer the following questions 34-35.

34. The beta for the portfolio is

A) 1.63.

B) 1.97.

C) 1.75.

D) 1.50.

35. The three month Treasury bill rate (this is risk free rate) is 2%. S&P500 index return is 10% (this is market return). Now calculate the portfolio’s return.

A) 15.04%

B) 12.80%

C) 13.41%

D) 14.66%

Use the following information to answer the questions 36 - 40.

Assets

CA $ 38,000,000

Net plant, property, & equipment 101,000,000

TA $139,000,000

Liabilities and Equity

AP $ 10,000,000

Accruals 9,000,000

Current liabilities $ 19,000,000

*Long-term debt (40,000 bond) 40,000,000*

TL $ 59,000,000

*Equity (10 million shares) 30,000,000*

Retained earnings 50,000,000

Total shareholders' equity 80,000,000

Total liabilities and shareholders' equity $139,000,000

The stock price is $15.25 per share. Price of bond with a par value of $1,000 is $875, 20-year maturity, 7.25% coupon rate, semiannual. Beta = 1.25, risk free rate of six months Treasury bill = 3.50%. Yield of 20 year Treasury bond = 5.50%. Stock require = 11.50% and market return = 14.50%. Tax rate = 40%.

1. **after tax cost of debt=?**
2. 6.19%
3. 5.24%
4. 6.38%
5. 5.14%
6. **cost of equity =?**
7. 17.37%
8. 17.65%
9. 17.88%
10. 17.25%

1. What is weight of debt?
2. 57.14%
3. 42.86%
4. 33.33%
5. 66.67%

1. What is weight of equity?
2. 57.14%
3. 42.86%
4. 33.33%
5. 66.67%
6. What is WACC?
7. 12.53%
8. 10.60%
9. 9.42%
10. 11.27%

Extra Points (10 points total)

|  |  |  |
| --- | --- | --- |
|  | 2015 | 2016 |
| Sales |  | $ 785 |
| COGS |  | 460 |
| Interest |  | 35 |
| Dividends |  | 17 |
| Depreciation |  | 210 |
| Cash | 70 | 75 |
| Accounts receivables | 563 | 502 |
| Current liabilities | 390 | 405 |
| Inventory | 662 | 640 |
| Long-term debt | 340 | 410 |
| Net fixed assets | 1,680 | 1,413 |
| Common stock | 700 | 235 |
| Tax rate | 35% | 35% |

Prepare the cash flow statement of the company.