

1. Risk that affects a large number of assets, each to a greater or lesser degree, is called _____ risk.
 - A. idiosyncratic
 - B. diversifiable
 - C. total
 - D. asset-specific
 - E. systematic

2. Which one of the following statements is correct concerning market efficiency?
 - A. A firm will generally receive a fair price when it sells shares of stock.
 - B. In an efficient market, some market participants will have an advantage over others.
 - C. If a market is efficient, arbitrage opportunities should be common.
 - D. Real asset markets are more efficient than financial markets.
 - E. New information will gradually be reflected in a stock's price to avoid any sudden change in the price of the stock.

3. Suppose a firm uses a constant WACC to make capital investment decisions without any adjustments for risk. The firm will tend to:
 - A. accept profitable, low risk projects and reject unprofitable, high risk projects.
 - B. accept profitable, low risk projects and accept unprofitable, high risk projects.
 - C. reject profitable, low risk projects and accept unprofitable, high risk projects.
 - D. reject profitable, low risk projects and reject unprofitable, high risk projects.
 - E. become less risky over time.

4. Which of the following are included in the market prices if the market is semistrong efficient?
 - I. All historical information
 - II. All insider information
 - III. All public information
 - IV. All information of any kind
 - A. I only
 - B. III only
 - C. I and III only
 - D. I, II, and III only
 - E. I, II, III, and IV

5. You own two risky assets, both of which plot on the SML. Asset A has an expected return of 12% and a beta of 0.8. Asset B has an expected return of 18% and a beta of 1.4. If your portfolio of these two stocks has a beta the same as the market beta, what proportion of your funds is invested in Asset A?
 - A. 0.74
 - B. 0.50
 - C. 1.33
 - D. 0.67
 - E. 1.25

6. Which one of the following statements is correct concerning the standard deviation of a portfolio?
- A. The greater the diversification of a portfolio, the greater the standard deviation of that portfolio.
 - B. Standard deviation measures only the systematic risk of a portfolio.
 - C. The standard deviation of a portfolio can often be lowered by changing the weights of the securities in the portfolio.
 - D. Standard deviation is used to determine the amount of risk premium that should apply to a portfolio.
 - E. The standard deviation of a portfolio is equal to a weighted average of the standard deviations of the individual securities held within the portfolio.
7. Which of the following are examples of erosion?
- I. the loss of sales due to increased competition in the product market
 - II. the loss of sales because your chief competitor just opened a store across the street from your store
 - III. the loss of sales due to a new product which you recently introduced
 - IV. the loss of sales due to a new product recently introduced by your competitor
- A. III only
 - B. III and IV only
 - C. I, III and IV only
 - D. II and IV only
 - E. I, II, III, and IV
8. Suppose that two all-equity companies, A and B, are considering the same project which has the same risk and the same cash flows. The project has the same overall risk as B's operations. The project has conventional cash flows and an IRR of 14%. Firm A has a beta of 1.4, while firm B has a beta of 1.1. If the risk-free rate is 5.25% and the market risk premium is 7%, which firm(s) should take the project?
- A. A only
 - B. B only
 - C. Neither A and B
 - D. A or B
 - E. Cannot be determined with information given.
9. Stock A has a correlation of -0.20 and 0.30 with Stock B and Stock C, respectively. The correlation between Stock B and Stock C is 0.10 . To create the most diversified portfolio with these three stocks, all else the same, you would invest in:
- A. Stock A and Stock B
 - B. Stock A and Stock C
 - C. Stock B and Stock C
 - D. All in Stock A
 - E. Insufficient information.

10. Which of the following statements are correct concerning diversifiable risks?

- I. Diversifiable risks can be essentially eliminated by investing in thirty unrelated securities.
- II. There is no reward for accepting diversifiable risks.
- III. Diversifiable risks are generally associated with an individual firm or industry.
- IV. Beta measures diversifiable risk.

- A. I and III only
- B. II and IV only
- C. I and IV only
- D. I, II, and III only
- E. I, II, III, and IV

Partial Credit Problems --- SHOW ALL WORK

Problem 1 (9 points) Calculate the WACC for the following firm:

Debt: 60,000 bonds with a par value of \$1,000 and a quoted price of 108.25. The bonds have coupon rate of 5.15 percent and 18 years to maturity. 45,000 bonds with a par value of \$2,000 and a quoted price of 97.65. The bonds have coupon rate of 6.20 percent and 25 years to maturity. Both bonds make semiannual coupon payments.

Preferred Stock: 100,000 shares of 4.8 percent preferred selling at a price of \$92.

Common Stock: 3,200,000 shares of stock selling at a market price of \$94.25. The stock has a beta of 1.1. The company just paid a dividend of \$0.85 and has a dividend growth rate 4.1 percent.

Market: The market risk premium is 7.2 percent and the risk-free rate is 2.5 percent. The company is in the 40 percent tax bracket.

Problem 2 (13 points) Bennington Golf has developed a new laser range finder. The company has projected sales of 14,900, 17,600, 19,200, 21,400, and 15,300 units per year over the next five years, respectively. Equipment necessary for production will cost \$3.4 million today and will be depreciated on a three-year MACRS schedule over the life of the project. The equipment can be sold for \$275,000 at the end of the project's life. The price and variable costs per unit in today's dollars are \$118 and \$47, respectively. Fixed costs are \$625,000 per year when expressed in today's dollars. The nominal required return is 9.3 percent. The price per unit, variable cost per unit, and fixed costs are all expected to increase at the inflation rate of 3.2 percent. The company has a tax rate of 38 percent. What is the project's NPV?

Problem 3 (12 points) RDH, Inc., manufactures high quality ladies boots. The company is considering the launch of a new boot style. Given the company's history, it believes that it can sell 34,000, 27,000, 24,000, and 18,000 pair of boots per year for the next 4 years, respectively. The new boots would have variable costs of \$134 per pair. Fixed production costs are \$4.25 million per year and the equipment necessary for the new line costs \$7.8 million. The equipment will be depreciated on a 5-year MACRS schedule. The line would require an investment in NWC of 15 percent of sales to be stockpiled one year ahead of sales, the tax rate is 40 percent, and the required return is 9 percent. The company expects that because of changes in styles, the new design can only be sold for the next four years. In four years, the equipment can be sold for \$1.8 million, although the company believes it will keep the machinery for another product line. Additionally, the CEO has stated that she requires an NPV of \$250,000 to undertake the new line of boots. What is the price per pair of boots that the company must set in order to undertake the new boot?

Problem 4 (11 points) Eclipse, Inc., has a new project under consideration that will require an investment of \$6.9 million today. If the project is successful, the cash flows will be \$2.6 million for 12 years. If the project is unsuccessful, the cash flows will be \$285,000 per year. Additionally, the company could sell the project's fixed assets in one year and realize an aftertax salvage value of \$4.7 million. The required return is 16 percent. What is the minimum probability of success that will make the project acceptable to the company?

Problem 5 (25 points)

ICU SHADES, INC.

ICU Shades is a publicly traded company that is a major manufacturer of glasses frames in the United States. They currently produce 20 top selling glasses frames, however the company has recently lost market share. The company has a new frame design that is considering bringing to market to regain lost market share. The company has spent \$1,500,000 on the research and development of the new frame.

Operations: Because the new frames will be made of an organic plastic, the company will need entirely new machinery for the production of the frames. The equipment will cost \$23,000,000 and be depreciated on a 20-year MACRS schedule. Because of the increased sales in Year 3, the company will also require an additional \$11,000,000 in equipment 2 years from today. All equipment will be worthless at the end of the project. The company expects to sell 125,000, 240,000, 480,000, 480,000 and 480,000 frames per year over the next five years, respectively. The new frame will have a wholesale price of \$95 per frame. Variable production costs are expected to be 37 percent of sales. Fixed costs will be \$2,450,000 per year. The company will also require an investment of inventory equal to 12 percent of sales at the time of the sales. The company feels that it will lose sales of 25,000, 30,000, 30,000, 35,000, and 35,000 of its existing frames each year for the next five years, respectively. The existing frames have a price of \$110, variable costs of 30 percent of sales, and fixed costs of \$2,100,000 per year. The 12 percent inventory requirement also applies to the existing frames.

Other Issues: Based on prior experience, the company does not feel that sales will end in five years, however, newer glasses frames will enter the market and reduce the sales of ICU's new model. Consequently, total cash flows after Year 5 are expected to decrease at a rate of 7 percent per year for the following 15 years, when the frames will be discontinued. The tax rate is 38 percent and the company requires a 14 percent rate of return. The company's optimal capital structure is 30 percent debt and 70 percent equity. Floatation costs are 4 percent for debt and 6 percent for equity. The equity portion of the new investment will come entirely from retained earnings. Floatation costs are required for fixed assets; they are not required for NWC.

Analysis: Calculate the NPV and IRR for the project. Can you use each of these in this analysis? Should the company undertake the project?