Review for Exam 3

Instructions: Please read carefully

- The exam will have 20 multiple choice questions and 4 work problems.
- Questions in the multiple choice section will be either concept or calculation questions. The calculation questions will be similar to those in the quizzes, assignment, and review. However, the concept questions will be related to any topic we have covered in the class. The concept questions in the review are only some sample questions. You should NOT study only topics in the review.
- For the work problems, you need to solve the problems without knowing the possible answers. The questions will be similar to those in the quizzes, assignment, and review except that the possible solutions are not given.
- You can bring a formula sheet to the exam.
- The final exam schedules are as follows:
  - Final Exams for Classes Meeting Tu-Th at 9:30am Thursday, May 15
    8:00 AM - 11:00 AM
  - Final Exams for Classes Meeting Tu-Th at 11am Monday, May 19
    11:30 AM - 2:30 PM
Chapter 12

RISK PREMIUM
1. The excess return required from a risky asset over that required from a risk-free asset is called the:
   a. risk premium.
   b. geometric premium.
   c. excess return.
   d. average return.
   e. variance.

STRONG FORM EFFICIENCY
2. The hypothesis that market prices reflect all available information of every kind is called _____ form efficiency.
   a. open
   b. strong
   c. semi-strong
   d. weak
   e. stable

DIVIDEND YIELD
3. The dividend yield is equal to _____, where \( P_1 \) is the purchase cost, \( P_2 \) represents the sale proceeds, and \( d \) is the dividend income.
   a. \( d \div P_1 \)
   b. \( d \times P_1 \)
   c. \( d \div P_2 \)
   d. \( d \times P_2 \)
   e. \( d \div (P_1 + P_2) \)

HISTORICAL RECORD
4. Based on the period of 1926 through 2003, _____ have tended to outperform other securities over the long-term.
   a. U.S. Treasury bills
   b. large company stocks
   c. long-term corporate bonds
   d. small company stocks
   e. long-term government bonds

RISK PREMIUM
5. Which one of the following is a correct statement concerning risk premium?
   a. The greater the volatility of returns, the greater the risk premium.
   b. The lower the volatility of returns, the greater the risk premium.
   c. The lower the average rate of return, the greater the risk premium.
   d. The risk premium is not correlated to the average rate of return.
   e. The risk premium is not affected by the volatility of returns.

MARKET EFFICIENCY
6. In an efficient market, the price of a security will:
   a. always rise immediately upon the release of new information with no further price adjustments related to that information.
   b. react to new information over a two-day period after which time no further price adjustments related to that information will occur.
   c. rise sharply when new information is first released and then decline to a new stable level by the following day.
d. react immediately to new information with no further price adjustments related to that information.
e. be slow to react for the first few hours after new information is released allowing time for that information to be reviewed and analyzed.

MARKET EFFICIENCY
7. Your best friend works in the finance office of the Delta Corporation. You are aware that this friend trades Delta stock based on information he overhears in the office. You know that this information is not known to the general public. Your friend continually brags to you about the profits he earns trading Delta stock. Based on this information, you would tend to argue that the financial markets are at best _____ form efficient.
   a. weak
   b. semiweak
   c. semistrong
   d. strong
   e. perfect

DOLLAR RETURNS
8. One year ago, you purchased a stock at a price of $32.50. The stock pays quarterly dividends of $.40 per share. Today, the stock is worth $34.60 per share. What is the total amount of your dividend income to date from this investment?
   a. $.40
   b. $1.60
   c. $2.10
   d. $2.50
   e. $3.70

Chapter 13

PRINCIPLE OF DIVERSIFICATION
9. The principle of diversification tells us that:
   a. concentrating an investment in two or three large stocks will eliminate all of your risk.
   b. concentrating an investment in three companies all within the same industry will greatly reduce your overall risk.
   c. spreading an investment across five diverse companies will not lower your overall risk at all.
   d. spreading an investment across many diverse assets will eliminate all of the risk.
   e. spreading an investment across many diverse assets will eliminate some of the risk.

EXPECTED RETURN
10. You are considering purchasing stock S. This stock has an expected return of 8 percent if the economy booms and 3 percent if the economy goes into a recessionary period. The overall expected rate of return on this stock will:
   a. be equal to one-half of 8 percent if there is a 50 percent chance of an economic boom.
   b. vary inversely with the growth of the economy.
   c. increase as the probability of a recession increases.
   d. be equal to 75 percent of 8 percent if there is a 75 percent chance of a boom economy.
   e. increase as the probability of a boom economy increases.

DIVERSIFIABLE RISKS
11. Which one of the following is an example of diversifiable risk?
a. the price of electricity just increased
b. the employees of Textile, Inc. just voted to go on strike
c. the government just imposed new safety standards for all employees
d. the government just lowered corporate income tax rates
e. the cost of group health insurance just increased nationwide

**NONDIVERSIFIABLE RISKS**
12. Which one of the following is an example of a nondiversifiable risk?
   a. a well respected president of a firm suddenly resigns
   b. a well respected chairman of the Federal Reserve suddenly resigns
   c. a key employee of a firm suddenly resigns and accepts employment with a key competitor
   d. a well managed firm reduces its work force and automates several jobs
   e. a poorly managed firm suddenly goes out of business due to lack of sales

**EXPECTED AND UNEXPECTED RETURNS (EXPECTED AND UNEXPECTED NEWS)**
13. Which one of the following events is considered part of the expected return on Fido stock?
   a. The president of Fido suddenly announced that the firm is going to cut production effective immediately.
   b. The government just announced a tax cut which will directly impact the sales of Fido.
   c. The management of Fido announced their ten-year plan for expansion five years ago.
   d. The price of Fido stock suddenly dropped due to rumors concerning company fraud.
   e. Fido just won a major government contract which they had not anticipated winning.

**TOTAL RISK**
14. _____ measures total risk.
   a. The mean
   b. Beta
   c. The geometric average
   d. The standard deviation
   e. The arithmetic average

**SYSTEMATIC RISK**
15. Systematic risk is measured by:
   a. the mean.
   b. beta.
   c. the geometric average.
   d. the standard deviation.
   e. the arithmetic average.

**SYSTEMATIC RISK**
16. Which of the following risks are relevant to a well-diversified investor?
   I. systematic risk
   II. unsystematic risk
   III. market risk
   IV. nondiversifiable risk
   a. I and III only
   b. II and IV only
   c. II, III, and IV only
   d. I, II, and IV only
e. I, III, and IV only

**UNSYSTEMATIC RISK**

17. Which one of the following is an example of unsystematic risk?
   a. the inflation rate increases unexpectedly
   b. the federal government lowers income taxes
   c. an oil tanker runs aground and spills its cargo
   d. interest rates decline by one-half of one percent
   e. the GDP rises by 2 percent more than anticipated

**SYSTEMATIC RISK PRINCIPLE**

18. The systematic risk principle implies that the _____ an asset depends only on that asset’s systematic risk.
   a. variance of the returns on
   b. standard deviation of the returns on
   c. expected return on
   d. total risk assumed by owning
   e. diversification benefits of

**SECURITY MARKET LINE (SML)**

19. A stock with an actual return that lies above the security market line:
   a. has more systematic risk than the overall market.
   b. has more risk than warranted based on the realized rate of return.
   c. has yielded a higher return than expected for the level of risk assumed.
   d. has less systematic risk than the overall market.
   e. has yielded a return equivalent to the level of risk assumed.

**CAPITAL ASSET PRICING MODEL (CAPM)**

20. A security that has a rate of return that exceeds the U.S. Treasury bill rate but is less than the market rate of return must:
   a. be a risk-free asset.
   b. have a beta that is greater than 1.0 but less than 2.0.
   c. be a risk-free asset with a beta less than .99.
   d. be a risky asset with a standard deviation less than 1.0.
   e. be a risky asset with a beta less than 1.0.

**EXPECTED RETURN**

21. You are comparing stock A to stock B. Given the following information, which one of these two stocks should you prefer and why?

<table>
<thead>
<tr>
<th>State of Economy</th>
<th>Probability of State Occurs</th>
<th>Rate of Return if State Occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Stock A</td>
</tr>
<tr>
<td>Boom</td>
<td>60%</td>
<td>9%</td>
</tr>
<tr>
<td>Recession</td>
<td>40%</td>
<td>4%</td>
</tr>
</tbody>
</table>

a. Stock A; because it has an expected return of 7 percent and appears to be more risky.
b. Stock A; because it has a higher expected return and appears to be less risky than stock B.
c. Stock A; because it has a slightly lower expected return but appears to be significantly less risky than stock B.
d. Stock B; because it has a higher expected return and appears to be just slightly more risky than stock A.
e. Stock B; because it has a higher expected return and appears to be less risky than stock A.
22. A portfolio is expected to return 7 percent in a normal economy, 14 percent in a boom economy, and lose 20 percent in a recessionary economy. The probability of a recession is 20 percent while the probability of a boom is 5 percent. What is the standard deviation of the portfolio?
   a. 7.89 percent  b. 9.32 percent  c. 10.87 percent  d. 11.08 percent

**PORTFOLIO EXPECTED RETURN**

23. What is the expected return on a portfolio comprised of $4,000 in stock M and $6,000 in stock N if the economy enjoys a boom period?

<table>
<thead>
<tr>
<th>State of Economy</th>
<th>Probability of State of Economy</th>
<th>Returns if State Occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom</td>
<td>10%</td>
<td>18%</td>
</tr>
<tr>
<td>Normal</td>
<td>75%</td>
<td>7%</td>
</tr>
<tr>
<td>Recession</td>
<td>15%</td>
<td>-20%</td>
</tr>
</tbody>
</table>

   a. 6.4 percent  
   b. 6.8 percent  
   c. 10.4 percent  
   d. 13.2 percent  
   e. 14.0 percent

**BETA**

24. What is the beta of a portfolio comprised of the following securities?

<table>
<thead>
<tr>
<th>Stock</th>
<th>Amount Invested</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2,000</td>
<td>1.20</td>
</tr>
<tr>
<td>B</td>
<td>$3,000</td>
<td>1.46</td>
</tr>
<tr>
<td>C</td>
<td>$5,000</td>
<td>0.72</td>
</tr>
</tbody>
</table>

   a. 1.008  
   b. 1.014  
   c. 1.038  
   d. 1.067  
   e. 1.127

**CAPITAL ASSET PRICING MODEL (CAPM)**

25. The stock of Martin Industries has a beta of 1.43. The risk-free rate of return is 3.6 percent and the market risk premium is 9 percent. What is the expected rate of return on Martin Industries stock?

   a. 11.3 percent  
   b. 14.1 percent  
   c. 16.5 percent  
   d. 17.4 percent  
   e. 18.0 percent
Chapter 15

COST OF EQUITY
26. The return that shareholders require on their investment in the firm is called the:
a. dividend yield.
b. cost of equity.
c. capital gains yield.
d. cost of capital.
e. income return.

PURE PLAY APPROACH
27. When firms develop a WACC for individual projects based on the cost of capital for other firms in similar lines of business as the project, the firm is utilizing a _____ approach.
a. subjective risk
b. pure play
c. divisional cost of capital
d. capital adjustment
e. security market line

COST OF EQUITY
28. A firm’s overall cost of equity is:
I. directly observable in the financial markets.
II. unaffected by changes in the market risk premium.
III. highly dependent upon the growth rate and risk level of a firm.
IV. an estimate only.
a. I and III only
b. II and IV only
c. I and II only
d. III and IV only
e. I and IV only

DIVIDEND GROWTH MODEL
29. The dividend growth model:
a. can be used to estimate the cost of equity for any corporation.
b. is applicable only to firms that pay a constant dividend.
c. is highly dependent upon the estimated rate of growth.
d. is considered quite complex.
e. considers the risk of the firm.

COST OF DEBT
30. The pre-tax cost of debt for a firm:
a. is equal to the yield to maturity on the outstanding bonds of the firm.
b. is equal to the coupon rate of the outstanding bonds of the firm.
c. is equivalent to the current yield on the outstanding bonds of the firm.
d. is based on the yield to maturity that existed when the currently outstanding bonds were originally issued.
e. has to be estimated as it cannot be directly observed in the market.

CAPITAL STRUCTURE WEIGHTS
31. The capital structure weights used in computing the weighted average cost of capital are:
a. constant over time provided that the debt-equity ratio changes in unison with the market values.
b. based on the face value of the firm’s debt.
c. computed using the book value of the long-term debt and the shareholder’s equity.
d. based on the market value of the firm’s debt and equity securities.

e. limited to the firm’s debt and common stock.

**WEIGHTED AVERAGE COST OF CAPITAL**

32. Which one of the following statements is correct concerning the weighted average cost of capital (WACC)?

- a. The pre-tax rate of return on the debt is the rate that is relevant to the computation of the WACC.
- b. When computing the WACC, the weight assigned to the preferred stock is equal to the coupon rate multiplied by the par value assigned to the preferred stock.
- c. A firm’s WACC will decrease as their corporate tax rate decreases.
- d. The weight of the common stock used in the computation of the WACC is based on the number of shares outstanding multiplied by the book value per share.
- e. The weight of the debt can be based on the face value of the bond issue(s) outstanding multiplied by the quoted price(s) when expressed as a percentage of the face value.

**COST OF EQUITY**

33. Martin Industries just paid an annual dividend of $1.20 a share. The market price of the stock is $26.60 and the growth rate is 4 percent. What is the firm’s cost of equity?

- a. 8.38 percent
- b. 8.51 percent
- c. 8.57 percent
- d. 8.69 percent
- e. 8.74 percent

**COST OF EQUITY**

34. Daniel’s Enterprises has a beta of 1.98 and a growth rate of 12 percent. The stock is currently selling for $12 a share. The overall stock market has an 11 percent rate of return and a risk premium of 8 percent. What is the expected rate of return on Daniel’s Enterprises stock?

- a. 10.00 percent
- b. 15.85 percent
- c. 16.67 percent
- d. 18.84 percent
- e. 19.06 percent

**COST OF DEBT**

35. The Bet-r-Bilt Company has a six-year bond outstanding with a 5 percent coupon. Interest payments are paid semi-annually. The face amount of the bond is $1,000. This bond is currently selling for 98 percent of its face value. What is the company’s pre-tax cost of debt?

- a. 4.72 percent
- b. 5.31 percent
- c. 5.35 percent
- d. 5.39 percent
- e. 5.42 percent

**AFTER-TAX COST OF DEBT**

36. Tom’s Ventures has a zero coupon bond issue outstanding that matures in thirteen years. The bonds are selling at 48 percent of par value. The company’s tax rate is 34 percent. What is the company’s after-tax cost of debt?
WEIGHTED AVERAGE COST OF CAPITAL
37. Peter’s Audio Shop has a cost of debt of 7 percent, a cost of equity of 11 percent, and a cost of preferred stock of 8 percent. The firm has 104,000 shares of common stock outstanding at a market price of $20 a share. There are 40,000 shares of preferred stock outstanding at a market price of $34 a share. The bond issue has a total face value of $500,000 and sells at 102 percent of face value. The company’s tax rate is 34 percent. What is the weighted average cost of capital for Peter’s Audio Shop?
   a. 6.14 percent
   b. 6.54 percent
   c. 8.60 percent
   d. 9.14 percent
   e. 9.45 percent

CAPITAL STRUCTURE WEIGHTS
38. Watson’s Automotive has a $400,000 bond issue outstanding that is selling at 102 percent of face value. Watson’s also has 4,500 shares of preferred stock and 21,000 shares of common stock outstanding. The preferred stock has a market price of $44 a share compared to a price of $21 a share for the common stock. What is the weight of the debt as it relates to the firm’s weighted average cost of capital?
   a. 38 percent
   b. 39 percent
   c. 40 percent
   d. 41 percent
   e. 42 percent
1. a
2. b
3. a
4. d
5. a
6. d
7. c
8. b

Dividend income = $.40 \times 4 = $1.60

9. e
10. e
11. b
12. b
13. c
14. d
15. b
16. e
17. c
18. c
19. c
20. e
21. b

\[ E(r)_A = (.60 \times .09) + (.40 \times .04) = .054 + .016 = .07 = 7 \text{ percent} \]
\[ E(r)_B = (.60 \times .15) + (.40 \times -.06) = .09 - .024 = .066 = 6.6 \text{ percent} \]

You should select stock A because it has a higher expected return and also appears to be less risky.

22. d

\[ E(R) = [(0.75 \times 0.07) + (0.05 \times 0.14) + (0.20 \times -0.20)] = (0.0525 + 0.007 - 0.040) = 0.0195 \]
\[ \text{Std dev} = \sqrt{0.75 \times (0.07 - 0.195)^2 + 0.05 \times (0.14 - 0.195)^2 + 0.20 \times (-0.20 - 0.195)^2} = \sqrt{0.00191269 + 0.00072601 + 0.00963605} = \sqrt{0.01227475} = 11.08 \text{ percent} \]

23. d

\[ E(r)_{\text{Boom}} = [($4,000 \div ($4,000 + $6,000) \times 0.18] + [($6,000 \div ($4,000 + $6,000) \times 0.10] = 0.072 + 0.06 = 0.132 = 13.2 \text{ percent} \]

24. c

- Value_{\text{Portfolio}} = $2,000 + $3,000 + $5,000 = $10,000
- Beta_{\text{Portfolio}} = ($2,000 \div $10,000 \times 1.20) + ($3,000 \div $10,000 \times 1.46) + ($5,000 \div $10,000 \times 0.72) = 0.24 + 0.438 + 0.36 = 1.038

25. c

- \[ E(r) = 0.036 + (1.43 \times 0.09) = 0.1647 = 16.5 \text{ percent} \]
\[ R_e = \frac{1.20 \times 1.04}{26.60} + .04 = 8.69 \text{ percent} \]

34. d

\[ R_e = (.11 - .08) + (1.98 \times .08) = 18.84 \text{ percent} \]

35. d

Enter \[ 6 \times 2 \quad 2/ \quad \pm 980 \quad 50/2 \quad 1000 \]

Solve for \[ 5.39 \]

36. a

Enter \[ 13 \quad \pm 480 \quad 1000 \]

Solve for \[ 5.81 \]

After-tax \( R_d \) = 5.81 percent \( \times (1 - .34) = 3.83 \text{ percent} \)

37. d

Debt: \( \$500,000 \times 1.02 = \$ .51 \text{m} \)

Preferred: \( 40,000 \times \$34 = \$1.36 \text{m} \)

Common: \( 104,000 \times \$20 = \$2.08 \text{m} \)

Total = \$ .51m + \$1.36m + \$2.08m = \$3.95m

\[ \text{WACC} = \left( \frac{\$2.08m}{\$3.95m} \times .11 \right) + \left( \frac{\$1.36m}{\$3.95m} \times .08 \right) + \left( \frac{\$ .51m}{\$3.95m} \times .07 \times (1 - .34) \right) \]

\[ = .057924 + .027544 + .005965 = .091433 = 9.14 \text{ percent} \]

38. b

Debt: \( \$400,000 \times 1.02 = \$408,000 \)

Preferred: \( 4,500 \times \$44 = \$198,000 \)

Common: \( 21,000 \times \$21 = \$441,000 \)

Total = \$408,000 + \$198,000 + \$441,000 = \$1,047,000

\[ \text{Weight}_{\text{Debt}} = \frac{\$408,000}{\$1,047,000} = 39 \text{ percent} \]