Student name:\_\_\_\_\_\_\_\_\_\_

**MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.  
1)** As read from left to right, the three variables in the equation *R* = E(*R*) + *U* indicate:

1) \_\_\_\_\_\_

A) average return, expected return, and unexpected return.   
 B) required return, expected return, and unbiased return.  
 C) actual return, expected return, and unexpected return.  
 D) required return, expected return, and unbiased risk.  
 E) required return, expected return, and unsystematic risk.

**2)** The two components of the unexpected return on a security are:

2) \_\_\_\_\_\_

A) market risk and systematic risk.   
 B) systematic risk and unsystematic risk.  
 C) idiosyncratic risk and unsystematic risk.  
 D) expected return and market risk.  
 E) expected return and idiosyncratic risk.

**3)** If a stock tends to rise in value in response to news that inflation is exceeding expectations, the stock has a:

3) \_\_\_\_\_\_

A) zero inflation beta.   
 B) positive inflation beta.  
 C) beta that exactly matches the market beta.  
 D) negative inflation beta.  
 E) beta equal to the risk-free beta.

**4)** As used in the market model, the symbol “ε” represents:

4) \_\_\_\_\_\_

A) unsystematic risk.   
 B) beta.  
 C) systematic risk.  
 D) a stock’s response to systematic risk.  
 E) the expected change in GNP.

**5)** The symbol “*FI*” is best defined as the:

5) \_\_\_\_\_\_

A) indicated GNP value.   
 B) first and primary source of unexpected returns.  
 C) initial expected rate of return.  
 D) actual inflation rate minus the expected inflation rate.  
 E) surprise change in interest rates.

**6)** If an announcement by a firm causes the price of that firm's stock to suddenly change, that price change was most likely be driven by:

6) \_\_\_\_\_\_

A) the expected part of the announcement.   
 B) market inefficiency.  
 C) the unexpected part of the announcement.  
 D) systematic risk.  
 E) expectations of a revised announcement in the near term.

**7)** Lausanne Corporation manufactures and sells cosmetics. Horizons, Incorporated, arranges global adventure tours for individuals and groups. If Lausanne develops a new product and its stock rises in value by 3 percent as a result, this will most likely have \_\_\_\_\_\_\_\_ effect on Horizon’s stock price because the discovery would be classified as a(n) \_\_\_\_\_\_\_\_ risk.

7) \_\_\_\_\_\_

A) no; systematic   
 B) no; unsystematic  
 C) a large; systematic  
 D) a large; unsystematic  
 E) an indeterminate; market

**8)** Assume a security has a GNP beta of 1.3. Accordingly, the security's total rate of return will:

8) \_\_\_\_\_\_

A) increase by 1.3 percent for every 1 percent decrease in GNP.   
 B) increase by 1.3 percent every time the GNP increases by 1.3 percent.  
 C) change by 1.3 times the percentage amount of any unexpected change in GNP.  
 D) change by the unexpected percentage change in GNP divided by 1.3.  
 E) increase by 1.3 percent whenever the GNP increases by 1.3 percent.

**9)** If the expected rate of GNP growth was 4 percent and the actual rate was .3 percent higher than the expectation, the total return on a stock would change by \_\_\_\_ based on a multifactor model.

9) \_\_\_\_\_\_

A) 4.3βGNP   
 B) .3βGNP  
 C) −.3βGNP  
 D) −4.3βGNP  
 E) 4βGNP

**10)** A three-factor model of a security’s return would most likely include factors such as:

10) \_\_\_\_\_\_

A) tax rates, inflation, and profit margin.   
 B) PE ratio, price-to-book ratio, and firm size.  
 C) firm size, inflation, and GNP.  
 D) inflation, GNP, and interest rates.  
 E) GNP, interest rates, and PE ratios.

**11)** A beta coefficient reflects the response of a security's return to:

11) \_\_\_\_\_\_

A) the risk-free rate.   
 B) an unsystematic risk.  
 C) a systematic risk.  
 D) the market rate of return.  
 E) idiosyncratic risk.

**12)** Based on a multifactor model, systematic risk arises from:

12) \_\_\_\_\_\_

A) a common factor, *F*.   
 B) negative betas.  
 C) the lack of market liquidity.  
 D) the variable, ε.  
 E) a positive covariance between securities.

**13)** In a portfolio of risky assets, the portfolio's response to any factor, *Fi*, can be determined by:

13) \_\_\_\_\_\_

A) multiplying the portfolio weighted average β*i* by the factor *Fi*.   
 B) computing the portfolio weighted average *Fi*.  
 C) multiplying the CAPM beta times the factor.  
 D) summing the weighted random errors.  
 E) dividing the percentage change in the factor, *Fi*, by the total number of factors affecting the portfolio.

**14)** Based on a multifactor model, portfolio diversification minimizes which one of the following?

14) \_\_\_\_\_\_

A) Weighted average β   
 B) Weighted average of (β × *F*)  
 C) *F*  
 D) Weighted average of ε  
 E) Weighted average of E(*R*)

**15)** Assume a well-diversified portfolio has a beta of zero in a one-factor model.A security held inside that portfolio will have an actual return:

15) \_\_\_\_\_\_

A) of zero.   
 B) closely equal to the market risk premium.  
 C) closely equal to the expected return.  
 D) that is positive and less than the risk-free rate.  
 E) that is less than the risk-free rate and can be negative.

**16)** Assume a security has no unsystematic risk. Given this, the excess return on that security will be the highest if the factor, *F*, \_\_\_\_ and the beta for that factor is \_\_\_\_.

16) \_\_\_\_\_\_

A) increases in value; high   
 B) increases in value; low  
 C) remains constant; zero  
 D) decreases in value; high  
 E) decreases in value; low

**17)** Which type of risk is unaffected by portfolio diversification?

17) \_\_\_\_\_\_

A) Unsystematic risk   
 B) Idiosyncratic risk  
 C) Total risk  
 D) Systematic risk  
 E) All types of risk are affected by portfolio diversification.

**18)** Assume a portfolio is composed of three different stocks. If a large number of diverse securities are added to the portfolio, then the:

18) \_\_\_\_\_\_

A) weighted average expected return goes to zero.   
 B) weighted average of the factor betas goes to zero.  
 C) weighted average of the unsystematic risk goes to zero.  
 D) return of the portfolio must equal the market rate of return.  
 E) return of the portfolio will equal the risk-free rate.

**19)** Which one of the following statements is true?

19) \_\_\_\_\_\_

A) A well-diversified portfolio has negligible systematic risk.   
 B) A well-diversified portfolio has negligible unsystematic risk.  
 C) An individual security has negligible systematic risk.  
 D) An individual security has negligible unsystematic risk.  
 E) Both a well-diversified portfolio and an individual security have negligible unsystematic risk.

**20)** If an investor plans to add a stock to a well-diversified portfolio, the investor should first consider the \_\_\_\_\_ risks of that additional stock.

20) \_\_\_\_\_\_

A) expected total   
 B) historical total  
 C) systematic  
 D) idiosyncratic  
 E) firm-specific

**21)** Consider the security market line (SML) under the one-factor model. Assume Point C lies on the SML but an investor would prefer a point that also lies on the SML but is lower and to the left of Point C. How can this investor obtain that point for their portfolio?

21) \_\_\_\_\_\_

A) Replace the lower beta stocks in the portfolio with higher beta stocks   
 B) Sell a portion of the portfolio and use the proceeds to purchase undervalued stocks  
 C) Sell the higher beta stocks in the portfolio and replace them with undervalued stocks  
 D) Replace the portfolio with undervalued stocks and risk-free assets  
 E) Replace the portfolio with a combination of a higher beta portfolio that lies on the SML and risk-free assets

**22)** The slope of the security market line equals the:

22) \_\_\_\_\_\_

A) risk-premium for an individual security.   
 B) risk-free rate of return.  
 C) market rate of return.  
 D) total return per unit of beta.  
 E) market risk premium.

**23)** The single-factor model generally uses \_\_\_ as the single factor.

23) \_\_\_\_\_\_

A) arbitrage fees   
 B) GNP  
 C) the inflation rate  
 D) the market risk premium  
 E) the risk-free return

**24)** Assuming the single-factor model applies, the factor beta for the market portfolio is:

24) \_\_\_\_\_\_

A) zero.   
 B) one.  
 C) the average of the risk-free beta and the beta for the highest risk security in the portfolio.  
 D) impossible to calculate without collecting sample data.  
 E) irrelevant to the model.

**25)** Assume the single-factor model is applied to a security that has a negative factor beta. The security will:

25) \_\_\_\_\_\_

A) always have a positive rate of return.   
 B) have an expected return greater than the risk-free rate.  
 C) have an actual return that equals the risk-free rate.  
 D) have an expected return equal to the market rate of return.  
 E) have an actual rate of return that can be positive, negative, or zero.

**26)** Estimating the rate of return for any portfolio lying on the security market line requires which of the following?

26) \_\_\_\_\_\_

A) Market rate of return and the portfolio beta   
 B) Market rate of return, market beta, and the risk-free rate  
 C) Risk-free rate, factor beta, and the industry beta  
 D) Factor beta and the market risk premium  
 E) Portfolio beta, the risk-free rate, and the market risk premium

**27)** The acronym APT stands for:

27) \_\_\_\_\_\_

A) arbitrage pricing techniques.   
 B) absolute profit theory.  
 C) arbitrage pricing theory.  
 D) asset pricing theory.  
 E) assured price techniques.

**28)** A factor, as used in APT, is a variable that:

28) \_\_\_\_\_\_

A) represents a nondiversifiable risk.   
 B) affects the returns of risky assets in an unsystematic fashion.  
 C) correlates the returns of a risky asset with those of a risk-free asset.  
 D) measures the response of a specific asset to a systematic risk.  
 E) represents a firm-specific risk.

**29)** A criticism of the CAPM is that it:

29) \_\_\_\_\_\_

A) ignores the rate of return on the market portfolio.   
 B) ignores the risk-free rate.  
 C) requires a single measure of systematic risk.  
 D) utilizes too many factors.  
 E) contradicts the single-factor APT model.

**30)** The general purpose of identifying multiple factors in the APT model is to:

30) \_\_\_\_\_\_

A) identify the top three factors that have the largest impact on the market rate of return.   
 B) identify and eliminate all systematic risks from a portfolio.  
 C) identify the quantity of each factor that is needed to reduce a portfolio's risk, as measured by beta, to a level equal to that of the overall market.  
 D) reduce the unsystematic risk to a level where the unsystematic risk of one security is unrelated to the unsystematic risk of any other security.  
 E) reduce the slope of the security market line, thereby reducing portfolio risk.

**31)** If you were to consider the CAPM as a one-factor model, then the factor would be the:

31) \_\_\_\_\_\_

A) rate of inflation.   
 B) market risk premium.  
 C) GNP.  
 D) risk-free rate.  
 E) individual beta of each security or portfolio.

**32)** Which one of the following statements is true?

32) \_\_\_\_\_\_

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) The factors to be used in the APT are easier to identify than the factor used in the CAPM.  
 D) CAPM provides the means for a more-detailed estimate of a security's expected return than does APT.  
 E) CAPM assigns a beta of 1 to the market while APT assigns the market a beta of zero.

**33)** Parametric or empirical models rely:

33) \_\_\_\_\_\_

A) on security betas explaining systematic factor relationships.   
 B) on finding regularities and relations in past market data.  
 C) on security returns always being located on the capital market line.  
 D) solely on factors within the security’s issuing firm’s realm of control.  
 E) primarily on financial market models and theories.

**34)** When using the empirical approach, rather than a risk-based model, to compute an expected rate of return on a security, the beta values are replaced with:

34) \_\_\_\_\_\_

A) the ratio of the market rate of return to the risk-free rate.   
 B) a singular value equal to the market-to-book value of the firm.  
 C) the firm's various attributes.  
 D) the ratio of the firm's historical average return to the risk-free rate.  
 E) the average standard deviation of the security's historical returns.

**35)** A growth-stock portfolio is probably best characterized as having a:

35) \_\_\_\_\_\_

A) high PE ratio relative to the overall market.   
 B) lower risk premium than the overall market.  
 C) low level of systematic risk and a high level of unsystematic risk.  
 D) low PE ratio relative to the overall market.  
 E) lower beta than the overall market.

**36)** When selecting a benchmark, it is important to match the security or portfolio that will be evaluated to securities:

36) \_\_\_\_\_\_

A) that have an opposing style.   
 B) that have identical factor betas for all factors in the pricing model being utilized.  
 C) that closely mimic the overall market.  
 D) with the same PE ratios.  
 E) of similar style that are available for purchase.

**37)** The Fama-French three-factor model seems to support the notion that higher returns can best be earned over time on:

37) \_\_\_\_\_\_

A) large, growth stocks.   
 B) large, value stocks.  
 C) small, value stocks.  
 D) small, growth stocks.  
 E) the overall stock market.

**38)** The systematic response coefficient for productivity, βp, would produce an unexpected change in any security return of (βP × \_\_\_\_) if the expected rate of productivity was 1.25 percent and the actual rate was 2.46 percent.

38) \_\_\_\_\_\_

A) −1.21 percent   
 B) 1.21 percent  
 C) 2.46 percent  
 D) −2.46 percent  
 E) 1.25 percent

**39)** The stock of Osaka Corporation has an expected return of 8.2 percent and betas of: βGNP = 1.23; βI = .97; and βEx = 1.08. This expectation is based on a three-factor model with expected values of: GNP growth of −1 percent; inflation of 2.4 percent; and export growth of 3.5 percent. However, actual growth in these factors turns out to be .55 percent, 1.8 percent, and 2.6 percent, respectively. Assuming there was no unexpected news related specifically to the stock, what was the stock's total rate of return?

39) \_\_\_\_\_\_

A) 8.04%   
 B) 8.55%  
 C) 8.47%  
 D) 7.85%  
 E) 8.85%

**40)** The stock of Giannis Sports has an expected return of 7.8 percent and betas of: βGNP = 1.06; βI = 1.01; and βEx = .52. This expectation is based on a three-factor model with expected values of: GNP growth of 2.6 percent; inflation of 3.1 percent; and export growth of 1.4 percent. However, actual growth in these factors turns out to be 3.1 percent, 2.6 percent, and .2 percent, respectively. Calculate the stock's total return if the company unexpectedly announces that an important patent filing has been granted sooner than expected and will earn the company 5 percent more in return, (i.e., from 10 percent up to 15 percent).

40) \_\_\_\_\_\_

A) 16.02%   
 B) 12.20%  
 C) 11.55%  
 D) 10.90%  
 E) 11.02%

**41)** The stock of Quintanilla, Incorporated, has an expected return of 12.6 percent and betas of: βGNP = 1.52; βI = 1.06; and βEx = 1.28. This expectation is based on a three-factor model with expected values of: GNP growth of 3.2 percent; inflation of 2.9 percent; and export growth of 2.2 percent. However, actual growth in these factors turns out to be 3.6 percent, 3.2 percent, and 2.5 percent, respectively. Calculate the stock's total return if the company unexpectedly announces they had an industrial accident and the operating facilities will close down temporarily which will reduce the return by 7 percent (from 10 percent down to 3 percent).

41) \_\_\_\_\_\_

A) −4.05%   
 B) 6.91%  
 C) 3.57%  
 D) 7.42%  
 E) −1.85%

**42)** Assume you have identified three important systematic risk factors: exports, inflation, and industrial production. At the beginning of the year, a stock’s return is estimated at 10.3 percent and the growth in the three factors is estimated at −.5 percent, 2.8 percent, and 3.6 percent, respectively. The factor betas are: βEX = 1.8, βI = .7, and βIP = 1. What would be the stock’s total return if the actual growth in each of the factors was equal to the expected growth and no unexpected news occurred?

42) \_\_\_\_\_\_

A) 4.7 percent   
 B) 5.9 percent  
 C) 10.3 percent  
 D) 14.96 percent  
 E) 8.7 percent

**43)** The systematic response coefficient for productivity, *β*p, would produce an unexpected change in any security return of [*β*P ×\_\_\_] if the expected rate of productivity was 1.8 percent and the actual rate was 2.2 percent.

43) \_\_\_\_\_\_

A) .4 percent   
 B) −.4 percent  
 C) 2.2 percent  
 D) −2.2 percent  
 E) 1.8 percent

**44)** Assume the single-factor APT model applies, and that 50 percent of the funds in a portfolio are invested in a risky security and 50 percent in a risk-free asset. The risky security has a beta of 1.6. The portfolio has a factor beta of:

44) \_\_\_\_\_\_

A) 0.   
 B) .8.  
 C) .9.  
 D) 1.  
 E) 1.6.

**45)** Assume the single-factor model applies and that 70 percent of the funds in a portfolio are invested in a risky security and the remainder in the risk-free asset. The risky security has a beta of 1.4. The portfolio has a beta of:

45) \_\_\_\_\_\_

A) 1.40.   
 B) .98.  
 C) .70.  
 D) .49.  
 E) 1.00.

**46)** Assume a one-factor model where the factor is associated with the overall market. Suppose McTavish common stock has a factor beta of .8, the risk-free rate is 3.2 percent, and the expected market rate of return is 11.2 percent. What is the expected return for the stock?

46) \_\_\_\_\_\_

A) 10.25%   
 B) 6.40%  
 C) 7.20%  
 D) 9.60%  
 E) 12.16%

**47)** Suppose Itzel’s common stock has a return of 12.87 percent, the risk-free rate is 2.65 percent, the market return is 13.46 percent, and there is currently no unsystematic influence affecting Itzel’s return. Given a one-factor APT model, what is the factor beta?

47) \_\_\_\_\_\_

A) .896   
 B) .945  
 C) 1.003  
 D) .962  
 E) .979

**48)** Suppose a sizeable, fully diversified portfolio has an *F*1 beta of .9, an *F*2 beta of 1.4, and an expected return of 11.6 percent. If *F*1 turns out to be 1.1 percent and *F*2 is −.8 percent, what will be the actual rate of return based on a two-factor arbitrage pricing model?

48) \_\_\_\_\_\_

A) 12.05%   
 B) 11.47%  
 C) 11.72%  
 D) 12.32%  
 E) 12.58%

**49)** Suppose Reflective Corporation's common stock has an actual return of 12.34 percent compared to its expected return of 12.6 percent. The risk-free rate was expected to be 4.3 percent, which it was. The beta of *F*i is .9 and the beta of *F*GNP is 1.1. If inflation unexpectedly increased by 1.4 percent, what was the unexpected change in GNP?

49) \_\_\_\_\_\_

A) 2.02%   
 B) 1.38%  
 C) −.82%  
 D) −1.38%  
 E) −2.02%

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.  
50)** In a multifactor model, explain what a factor represents and the role that beta plays in relation to factors. How do factors and betas affect the actual return?

**51)** Verbally describe a graph that illustrates the one-factor model.

**52)** Explain the conceptual differences in the theoretical development of the CAPM and the APT.

**53)** Explain the concept of a benchmark and why benchmarks provide value when evaluating the performance of a security or portfolio.

**Answer Key**Test name: Chapter 12

1) C

2) B

3) B

4) A

5) D

6) C

7) B

8) C

9) B

10) D

11) C

12) A

13) A

14) D

15) C

16) A

17) D

18) C

19) B

20) C

21) E

22) E

23) D

24) B

25) E

26) E

27) C

28) A

29) C

30) D

31) B

32) A

33) B

34) C

35) A

36) E

37) C

38) B

Δ*R* = βP*F*P = βP(2.46% − 1.25%)  
 Δ*R* = βP(1.21%)

39) B

E(*R*) = .082 + 1.23[.0055 − (−.01)] + .97(.018 − .024) + 1.08(.026 − .035) + 0  
 E(*R*) = .0855, or 8.55%

40) B

E(*R*) = .078 + 1.06(.031 − .026) + 1.01(.026 − .031) + .52(.002 − .014) + .05  
 E(*R*) = .1220, or 12.20%

41) B

E(*R*) = .126 + 1.52(.036 − .032) + 1.06(.032 − .029) + 1.28(.025 − .022) − .07  
 E(*R*) = .0691, or 6.91%

42) C

E(*R*)= 10.3%, which is the expected return on the stock

43) A

*R*i = βP*F*P  
 *R*i = βP(2.2% − 1.8%)  
 *R*i = βP(.4%)

44) B

βPortfolio = .5(1.6) + .5(0)  
 βPortfolio = .8

45) B

βPortfolio = .70(1.4) + (1 − .70)(0)  
 βPortfolio = .98

46) D

E(*R*McTavish) = .032 + .8(.112 − .032)  
 E(*R*McTavish) = .0960, or 9.60%

47) B

.1287 = .0265 + β(.1346 − .0265)  
 β = .945

48) B

*R* = .116 + .9(.011) + 1.4(−.008)  
 *R* = .1147, or 11.47%

49) D

(.1234 − .126) = .9(.014) + 1.1(*F*GNP)  
 *F*GNP = −.0138, or −1.38%

50) A factor is a variable that helps identify the difference between an actual return and an estimated return. Each factor measures the surprise, or unexpected change, in a specific systematic risk. A factor's beta measures a security's or portfolio's response to a change in that factor. The actual return is equal to the estimated return plus the sum of the individual betas times their respective factors, assuming there is no unsystematic risk.

51) The one-factor model can be graphed with the return percent on the factor, *F*, on the horizontal axis and the excess return percent on the stock as the vertical axis. The slope of the line that represents a security is the factor beta for that security. All security lines will intersect the origin with positive beta lines being upward sloping.

52) CAPM is built on the efficient set and then incorporates the use of a riskless asset. The APT adds factors until there is little, if any, correlation between the unsystematic risks of individual securities. Both processes illustrate that systematic risk remains in a diversified portfolio but idiosyncratic, or unsystematic, risk can be eliminated.

53) A benchmark is often times an index with specific characteristics such as an index based on the S&P 500, an international portfolio, small-growth stocks, or even a specific group of fixed-income securities. Comparing a specific security or portfolio against its related index allows you to compare returns against a benchmark with similar risk characteristics.