Chapter 6

1. Based on the outcomes in the following table, choose which of the statements below is (are) correct?

Scenario	Security A	Security B	Security C
Recession	Return > $E(r)$	Return = $E(r)$	Return < $E(r)$
Normal	Return = $E(r)$	Return = $E(r)$	Return = $E(r)$
Boom	Return < $E(r)$	Return = $E(r)$	Return > $E(r)$

I.   The covariance of security A and security B is zero.
II. The correlation coefficient between securities A and C is negative.
III. The correlation coefficient between securities B and C is positive.

A. I only
B. I and II only
C. II and III only
D. I, II, and III

2. Asset A has an expected return of 15% and a reward-to-variability ratio of .4. Asset B has an expected return of 20% and a reward-to-variability ratio of .3. A risk-averse investor would prefer a portfolio using the risk-free asset and _____.
A. asset A
B. asset B
C. no risky asset
D. The answer cannot be determined from the data given.

3. Adding additional risky assets to the investment opportunity set will generally move the efficient frontier _____ and to the _____.
A. up; right
B. up; left
C. down; right
D. down; left

4. An investor's degree of risk aversion will determine his or her _____.
A. optimal risky portfolio
B. risk-free rate
C. optimal mix of the risk-free asset and risky asset
D. capital allocation line

5. Diversification is most effective when security returns are _____.
A. High
B. negatively correlated
C. positively correlated
D. uncorrelated

6. Consider an investment opportunity set formed with two securities that are perfectly negatively correlated. The global minimum-variance portfolio has a standard deviation that is always _____.
A. equal to the sum of the securities' standard deviations
B. equal to -1
C. equal to 0
D. greater than 0

7. Rational risk-averse investors will always prefer portfolios _____.
A. located on the efficient frontier to those located on the capital market line
B. located on the capital market line to those located on the efficient frontier
C. at or near the minimum-variance point on the efficient frontier
D. that are risk-free to all other asset choices

8. A portfolio is composed of two stocks, A and B. Stock A has a standard deviation of return of 24%, while stock B has a standard deviation of return of 18%. Stock A comprises 60% of the portfolio, while stock B comprises 40% of the portfolio. If the variance of return on the portfolio is .0380, the correlation coefficient between the returns on A and B is _____.
A. .583
B. .225
C. .327
D. .128

9. You are recalculating the risk of ACE stock in relation to the market index, and you find that the ratio of the systematic variance to the total variance has risen. You must also find that the
A. covariance between ACE and the market has fallen
B. correlation coefficient between ACE and the market has fallen
C. correlation coefficient between ACE and the market has risen
D. unsystematic risk of ACE has risen

10. Semitool Corp. has an expected excess return of 6% for next year. However, for every unexpected 1% change in the market, Semitool's return responds by a factor of 1.2. Suppose it turns out that the economy and the stock market do better than expected by 1.5% and Semitool's products experience more rapid growth than anticipated, pushing up the stock price by another 1%. Based on this information, what was Semitool's actual excess return?
A. 7%
B. 8.5%
C. 8.8%
D. 9.25%

11. According to Tobin's separation property, portfolio choice can be separated into two independent tasks consisting of _____ and _____.
A. identifying all investor imposed constraints; identifying the set of securities that conform to the investor's constraints and offer the best risk-return trade-offs
B. identifying the investor's degree of risk aversion; choosing securities from industry groups that are consistent with the investor's risk profile
C. identifying the optimal risky portfolio; constructing a complete portfolio from T-bills and the optimal risky portfolio based on the investor's degree of risk aversion
D. choosing which risky assets an investor prefers according to the investor's risk-aversion level; minimizing the CAL by lending at the risk-free rate

12. A security's beta coefficient will be negative if _____.
A. its returns are negatively correlated with market-index returns
B. its returns are positively correlated with market-index returns
C. its stock price has historically been very stable
D. market demand for the firm's shares is very low

13. Decreasing the number of stocks in a portfolio from 50 to 10 would likely _____.
A. increase the systematic risk of the portfolio
B. increase the unsystematic risk of the portfolio
C. increase the return of the portfolio
D. decrease the variation in returns the investor faces in any one year

14. A project has a 60% chance of doubling your investment in 1 year and a 40% chance of losing half your money. What is the standard deviation of this investment?
A. 25%
B. 50%
C. 62%
D. 73%

15. The efficient frontier represents a set of portfolios that
A. maximize expected return for a given level of risk.
B. minimize expected return for a given level of risk.
C. maximize risk for a given level of return.
D. None of the options.

16. Which of the following provides the best example of a systematic-risk event?
A. A strike by union workers hurts a firm's quarterly earnings.
B. Mad Cow disease in Montana hurts local ranchers and buyers of beef.
C. The Federal Reserve increases interest rates 50 basis points.
D. A senior executive at a firm embezzles $10 million and escapes to South America.

17. Investing in two assets with a correlation coefficient of 1 will reduce which kind of risk?
A. market risk
B. unique risk
C. unsystematic risk
D. none of these options (With a correlation of 1, no risk will be reduced.)

18. The plot of a security's excess return relative to the market's excess return is called the
    _____.
A. efficient frontier
B. security characteristic line
C. capital allocation line
D. capital market line

19. The expected rate of return of a portfolio of risky securities is _____.
A. the sum of the securities' covariance
B. the sum of the securities' variance
C. the weighted sum of the securities' expected returns
D. the weighted sum of the securities' variance

20. Asset A has an expected return of 20% and a standard deviation of 25%. The risk free rate is 10%. What is the reward-to-variability ratio?

A. .40

B. .50

C. .75

D. .80

21. You put half of your money in a stock portfolio that has an expected return of 14% and a standard deviation of 24%. You put the rest of you money in a risky bond portfolio that has an expected return of 6% and a standard deviation of 12%. The stock and bond portfolio have a correlation 0.55. The standard deviation of the resulting portfolio will be _____.

A. more than 18% but less than 24%

B. equal to 18%

C. more than 12% but less than 18%

D. equal to 12%

22. A stock has a correlation with the market of 0.45. The standard deviation of the market is 21% and the standard deviation of the stock is 35%. What is the stock's beta?

A. 1.00

B. 0.75

C. 0.60

D. 0.55

1	2	3	4	5
B	A	B	C	B
6	7	8	9	10
C	B	A	C	C
11	12	13	14	15
C	A	B	D	A
16	17	18	19	20
C	D	B	C	A
21	22			
C	B			

8.

$.0380 = (.6^2)(.24^2) + (.4^2)(.18^2) + 2(.6)(.4)(.24)(.18)\rho \implies \rho = .583$

10.

$6\% + (1.5\%)(1.2) + 1\% = 8.8\%$

14.

$E[r_p] = (.60)(1) + (.40)(-.5) = .40$

$\sigma^2_{rp} = (.60)(1 - .40)^2 + (.40)(-.5 - .40)^2 = .54$

$\sigma_{rp} = .73$

20.

$(20\% - 10\%) \div 25\% = .40$

21.

$\sigma^2_p = 0.02592 = (.5^2)(.24^2) + (.5^2)(.12^2) + 2(.5)(.5)(.24)(.12)0.55; \sigma = 16.1\%$

22.

$\beta_i = \text{Cov}(r_i, r_m) \div \text{Var}(r_m) = \rho_{im}\sigma_i\sigma_m \div \text{Var}(r_m) = (.45)(.35)(.21) \div (.21)^2 = .75$