Multiple Choice Questions:
Instructions: Select the best answer by circling the letter that corresponds to it. Each question is worth 3 points.

1. Which of the following is a measure of the systematic risk of a stock?
   a. Beta
   b. Standard deviation
   c. Expected return
   d. Coefficient of regression

2. What is the beta of the risk-free rate?
   a. Zero
   b. Greater than 1
   c. Equal to 1
   d. Can be any nonnegative number

3. In the five-factor model, what is the term given to investors that are characterized by impetuous (careless) decision-making and low levels of self-confidence?
   a. Celebrity
   b. Guardian
   c. Rational Investor
   d. Adventurer

4. In the five-factor model, which of the following investment strategies would a guardian be most likely to be interested in?
   a. A portfolio comprising of technology and internet stocks
   b. A portfolio comprising of Russian bonds
   c. Guaranteed Investment Contracts
   d. A nondiversified and highly risky portfolio with very high potential returns

5. Mark wants to form a portfolio using 5 stocks; A, B, C, D, and E. He wants to put half his money in stock A, an equal amount in B and C, and a tenth of his money in stock D. If E’s weight is 20%, what is B’s weight?
   a. Cannot be determined with the given information
   b. 5%
   c. 6.67%
   d. 10%

6. The beta of the 5 stocks mentioned above (A,B,C,D,E) are 1, 2, 3, 4 and 5, respectively. What is the beta of Mark’s portfolio?
   a. Cannot be determined
7. As the number of stocks on a portfolio increases:
   a. The expected return decreases
   b. The expected return increases
   c. The nonsystematic risk of the portfolio decreases
   d. The systematic risk of the portfolio increases

8. In the CAPM, the upper half of the bullet is called:
   a. The super bullet
   b. The straight bullet
   c. The efficient frontier
   d. Securities Market Line

9. What is the statistical method used to calculate the beta of a stock?
   a. Averaging
   b. Standard deviation
   c. Regression analysis
   d. Monolithic conversion

10. The portfolios on the efficient frontier dominate all other portfolios because given a specific level of expected return,
    a. they maximize risk
    b. they minimize risk
    c. they maximize standard deviation
    d. they carry minimal systematic risk

11. As more assets are included in an equally weighted portfolio,
    a. The overall risk decreases at an increasing rate
    b. The overall risk increases at a decreasing rate
    c. The nonsystematic risk decreases at a decreasing rate
    d. The systematic risk decreases at a decreasing rate

12. The relationship between _____ and _____ is described by the security market line.
    a. total return … total risk
    b. expected return … total risk
    c. total return … systematic risk
    d. expected return … systematic risk

13. What is the most true regarding diversification?
    a. It is of little use to investors who wish to earn large returns.
    b. It can greatly increase the risk of a portfolio.
    c. It has become less popular in recent years due to the booming economy.
    d. It decreases the overall risk of a portfolio.
14. Which of the following represents a portfolio that does not lie on the efficient frontier (i.e. which portfolio is clearly dominated by another)?
   a. Portfolio A: expected return of 10% and standard deviation of 8%
   b. Portfolio B: expected return of 18% and standard deviation of 13%
   c. Portfolio C: expected return of 38% and standard deviation of 38%
   d. Portfolio D: expected return of 15% and standard deviation of 14%

15. The curved segment that envelopes the set of optimal combinations of stocks is known as the
   a. characteristic line.
   b. new frontier.
   c. efficient frontier.
   d. security market line.
**Problems**

1. The following are possible states of the economy and the returns associated with stocks A and B in those states.

<table>
<thead>
<tr>
<th>State</th>
<th>Probability</th>
<th>Return on A</th>
<th>Return on B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>0.3</td>
<td>24%</td>
<td>30%</td>
</tr>
<tr>
<td>Normal</td>
<td>0.4</td>
<td>36%</td>
<td>18%</td>
</tr>
<tr>
<td>Bad</td>
<td>0.3</td>
<td>48%</td>
<td>-6%</td>
</tr>
</tbody>
</table>

Calculate the expected return and the standard deviation of a portfolio comprised of stocks A and B. The weight in stock A is 60%. (15 points)

2. Ally is a fashion designer her late 30s that plans to retire within 20 years. She enjoys a very “in” lifestyle and likes to hang out with the “in-crowd” in the “in” nightspots whenever she has time off her busy schedule. Her tastes are very contemporary and she always likes to live in the most popular neighborhood in her city, L.A. In the last four years, she has moved five times. In her personal and professional life, Ally is always worried about being part of the young, fashionable and popular elite and will go any length to fit in. Although highly intelligent, she does not know much about investing and has come to you as a client, because you were recommended by one of her clients from Hollywood. She wants you to set up an investment portfolio for her that mimics those of Hollywood stars. (15 points)

   a. How would you characterize Ally as an investor?
   b. You have been trying to convince Ally that what is popular is not necessarily the best investment, and that sometimes a contrarian investment style may be appropriate. Present an argument in which you are trying to convince Ally to try a contrarian investment strategy.

3. A stock that you are interested in has a beta of 5. The total value of your portfolio is $200,000 and you decide to invest another $50,000 in this stock. (25 points)

   a. The current beta of your portfolio is 2.5. What will be the beta of your new portfolio?
   b. The risk-free rate is 6% and the expected return on the market is 15%. What is the expected return on your new portfolio?