*According to the syllabus of the course, this is a group take home exam. You will have exactly the same group that you used for your first homework. Next class I will only spend 20 minutes to answer your queries, if any. You will submit by email. You must show your work (calculation) clearly. Finally, please make everything clear in your answer and do not assume that I will be able to read your mind. I will grade what I will see. Late submission or deadline extension will not be allowed.*

**Chapter 7**

1. Distinguish between total risk, systematic risk and unsystematic risk? Give two examples for each.
2. How do you define the correlation of +0.30, 0, and 0.70 between two stocks?
3. Why does the portfolio risk go down when you include more financial assets in a portfolio? Why does it happen? Show with the help of a graph.
4. The covariance between XYZ stock and the S&P 500 is 0.05. The standard deviation of the stock market is 18. What is the beta of XYZ?
5. Assume that you have invested in two stock A and B. Stock A has a standard deviation of return of 10 percent. Stock B has a standard deviation of return of 20 percent. The correlation coefficient between the two stocks is 0.25. If you invest 70 percent of your funds in stock A and 30 percent in stock B, what is the standard deviation of your portfolio?

**Chapter 8**

1. Why do we need to use beta to invest in a stock? How can you measure (or estimate) it? If a stock has a beta of 2.50, how do you define it?
2. Write down the CAPM equation. Define every part of it. Draw the graph properly. How does it help us in financial decision making?
3. Assume that you invest equal amounts in a portfolio with an expected return of 16 percent and a standard deviation of returns of 18 percent and a risk-free asset with an interest rate of 4 percent. Calculate the standard deviation of the returns on the resulting portfolio.
4. The beta of Wal-Mart is 0.65, the risk-free rate is 4 percent, and the expected market risk premium is 14 percent. Calculate the expected rate of return on this company.
5. You have stock YYY, which has following information: Beta = 0.75; risk-free rate = 4 percent; market rate of return = 12 percent. However, this stock actually gives 13 percent return. What should be the return of this stock? Is it underpriced or overpriced? How?