INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Department of Humanities and Social Sciences

Online test for Spring Semester 2021-22

Date: April 12, 2022 | Full Marks: 30

Time: 8.00-10.00AM | Sub. Code: HS30096

Market Microstructure

Answer all the questions.

Questions 1-9 carry two marks each (2x9=18), and questions 10-13 carry three marks each .

1. Before investment, what are the prerequisite expenses for which the investor is supposed earmark the earnings?

2. Why do you think that investors like Rina Castillo choose unique hourly fee structure advisors over others?

3. An investor who short sold 120 shares of stock at \$150 per share wishes to realize a gross profit of \$2400. At what price must the investor cover the short sale?

4. Given an expected return for the market of 12 percent, with a standard deviation of 20 percent, and a risk-free rate of 8 percent, consider the following data:

Stock	Beta	Ri
TCS	0.8	12
Infosy	1.2	13
Reliance	0.6	11

   (a) Calculate the required return for each stock using the SML.

   (b) Assume that an analyst, using fundamental analysis, develops the estimates labeled Ri for these stocks. Which stock would be recommended for purchase?

5. The market has an expected return of 13 percent and the risk-free rate is 5.5 percent. If Paytm has a beta of 1.85, what is the required return for Paytm?

6. Wal-Mart paid an annual dividend of \$1.25 last year. Investors expect the dividends to grow at a rate of 6 percent per year over the foreseeable future. If the required rate of return for this stock is 12 percent, what is its intrinsic value today?

7. Assume that markets are perfect in the sense of being free from transaction costs and restrictions on short selling. The spot price of gold is \$370. Current interest rates are 10 percent per year, compounded monthly. According to the cost-of-carry model, what should the price of a gold futures contract be if expiration is six months away?

8. A call option has an exercise price of \$70 and is at expiration. The option costs \$4, and the underlying stock trades for \$75. State exactly how you might transact?

9. Consider a call option with an exercise price of \$80 and a cost of \$5. Consider a put option with an exercise price of \$80 and a cost of \$4. Graph the profits and losses at expiration for a straddle comprising these two options. If the stock price is \$80 at expiration, what will be the profit or loss?

10. An investor purchases 100 shares of a \$60 stock when the initial margin requirement is 50 percent and the maintenance margin is 30 percent.

    (a) How much must the investor put up initially in order to purchase the stock?

    (b) Calculate the actual margin if the price of the stock drops to \$55.

    (c) At what stock price will a margin call occur?

    (d) If the stock price falls to \$58, is the account restricted?

11. The current market price of the stock of a company, Microsoft is \$30 per share. The dividends for the next year are expected to be \$4.00 per share and the investor is confident that the selling price of the stock will be \$35 at the end of one year. What is the implied rate of return assuming dividends are growing at a constant rate?

12. Consider three call options with the same underlying stock and the same expiration. Assume that you take a long position in a call with an exercise price of \$40 and a long position in a call with an exercise price of \$30. At the same time, you sell two calls with an exercise price of \$35. What position have you created? What is the value of this position at expiration if the stock price is \$90? What is the position's value for a stock price of \$15?

13. You are analyzing the stock of LSB Industires, healthcare company, as of late Feb 2022. The stock price is \$9.74. The company's dividend per share for the fiscal year ending 30 June 2008 was \$0.27. You expect the dividend to increase by 10 percent for the next three years and then increase by 8 percent per year forever. You estimate the required return on equity of LSB Industries as 12 percent.

    (a) Estimate the value of LSB Industries using a two-stage dividend discount model.

    (b) Judge whether LSB Industries is undervalued, fairly valued, or overvalued.