Econ435–Financial Markets and the Macroeconomy
Summer II 2007
Midterm exam

The exam consists of 30 multiple choice questions and 3 short-answer questions. Please answer ALL of them. There is also one extra credit question. If you have the time, you can attempt it and earn bonus points.

The duration of the exam is 1 hr 15 mins. DO NOT OPEN the exams until you are told to do so and STOP writing when you are told that the exam is over. **Failure to comply will result in a 10% loss in the grade.**

Do not forget to write (and bubble) your name and university ID number on the scantron.

NO PROGRAMMABLE OR FINANCIAL CALCULATORS ARE ALLOWED. Only simple or scientific calculators can be used.

GOOD LUCK!

1. A disadvantage of using stock options to compensate managers is that
   A) it encourages mangers to undertake projects that will increase stock price.
   B) it encourages managers to engage in empire building.
   C) it can create an incentive for mangers to manipulate information to prop up a stock price temporarily, giving them a chance to cash out before the price returns to a level reflective of the firms true prospects.
   D) all of the above.
   E) none of the above.

2. Fees and other expenses of mutual funds may include
   A) front-end loads.
   B) back-end loads.
   C) 12b-1 charges.
   D) A and B only.
   E) A, B and C.

3. Assume that you purchased shares of a mutual fund at a net asset value of $10.00 per share. During the year you received dividend income distributions of $0.05 per share and capital gains distributions of $0.06 per share. At the end of the year the shares had a net asset value of $8.16 per share. What was your rate of return on this investment?
   A) -18.24%
   B) -16.1%
   C) 16.10%
   D) -17.3%
   E) 17.3%

4. _________ financial asset(s).
   A) Buildings are
   B) Land is a
   C) Derivatives are
   D) U. S. Agency bonds are
   E) C and D

5. The separation property refers to the conclusion that
   A) the determination of the best risky portfolio is objective and the choice of the best complete portfolio is subjective.
   B) the choice of the best complete portfolio is objective and the determination of the best risky portfolio is objective.
   C) the choice of inputs to be used to determine the efficient frontier is objective and the choice of the best CAL is subjective.
   D) the determination of the best CAL is objective and the choice of the inputs to be used to determine the efficient frontier is subjective.
   E) investors are separate beings and will therefore have different preferences regarding the risk-return tradeoff.

6. An investor can choose to invest in T-bills paying 4% or a risky portfolio with end-of-year cash flow of $12,000. If the investor requires a risk premium of 3%, what would she be willing to pay for the risky portfolio?
   A) $10,000.00
   B) $11,111.11
   C) $12,222.22
   D) $14,555.55
   E) $11,214.95

7. The cost of buying and selling a stock consists of __________.
   A) broker's commissions
   B) dealer's bid-asked spread
   C) a price concession an investor may be forced to make.
   D) A and B.
   E) A, B, and C.

8. Which of the following statements regarding risk-averse investors is **true**?
   A) They only care about the rate of return.
   B) They accept investments that are fair games.
   C) They only accept risky investments that offer risk premiums over the risk-free rate.
   D) They are willing to accept lower returns and high risk.
   E) A and B.

9. An investor who wishes to form a portfolio that lies to the right of the optimal risky portfolio on the Capital Allocation Line must:
   A) lend some of her money at the risk-free rate and invest the remainder in the optimal risky portfolio.
   B) borrow some money at the risk-free rate and invest in the optimal risky portfolio.
   C) invest only in risky securities.
   D) such a portfolio cannot be formed.
   E) B and C

10. The certainty equivalent rate of a portfolio is
   A) the rate that a risk-free investment would need to offer with certainty to be considered equally attractive as the risky portfolio.
   B) the rate that the investor must earn for certain to give up the use of his money.
   C) the minimum rate guaranteed by institutions such as banks.
   D) the rate that equates "A" in the utility function with the average risk aversion coefficient for all risk-averse investors.
   E) represented by the scaling factor "-.005" in the utility function.

11. A put option allows the holder to
    A) buy the underlying asset at the striking price on or before the expiration date.
    B) sell the underlying asset at the striking price on or before the expiration date.
    C) sell the option in the open market prior to expiration.
    D) B and C.
    E) A and C.

12. In order for you to be indifferent between the after tax returns on a corporate bond paying 7% and a tax-exempt municipal bond paying 5.5%, what would your tax bracket need to be?
    A) 22.6%
    B) 21.4%
    C) 26.2%
    D) 19.8%
    E) Cannot tell from the information given

13. You want to purchase IBM stock at $80 from your broker using as little of your own money as possible. If initial margin is 50% and you have $2000 to invest, how many shares can you buy?
    A) 100 shares
    B) 200 shares
    C) 50 shares
    D) 500 shares
    E) 25 shares

14. Given the capital allocation line, an investor's optimal portfolio is the portfolio that
    A) maximizes her expected profit.
    B) maximizes her risk.
    C) minimizes both her risk and return.
    D) maximizes her utility.
    E) none of the above.

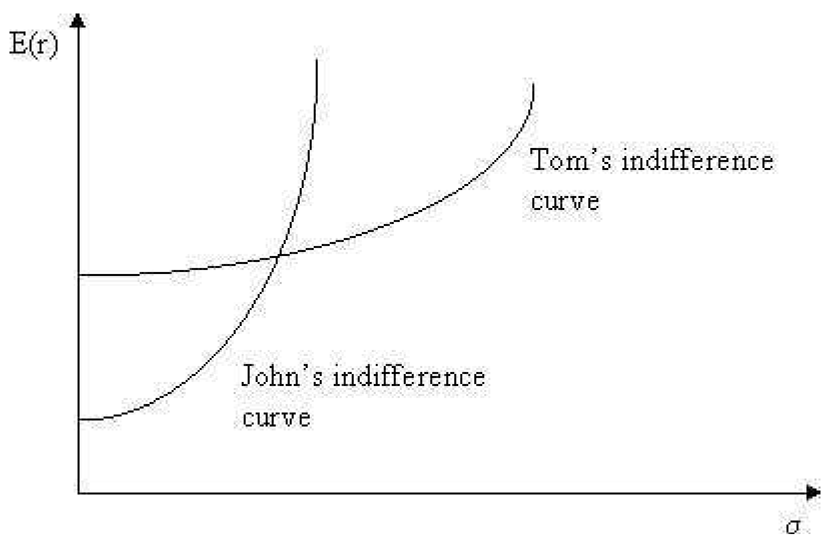
15. Firms that specialize in helping companies raise capital by selling securities are called ________.
    A) commercial banks
    B) investment banks
    C) savings banks
    D) credit unions
    E) all of the above.

16. Which one of the following statements regarding closed-end mutual funds is **false?**
    A) The funds invest in large volumes of several securities.
    B) The funds redeem shares at their net asset value.
    C) The funds offer investors professional management.
    D) A and B.
    E) None of the above.

17. T-bills are financial instruments initially sold by ________ to raise funds.
    A) commercial banks
    B) the U. S. government
    C) state and local governments
    D) agencies of the federal government
    E) B and D

Use the following to answer question 18:

Consider the following graph showing the indifference curves of John and Tom.



18. Suppose both Tom and John invest in combinations of the risk-free asset and a risky portfolio P. Which of the following statements about their investments is **false**:
    A) Tom is more likely to borrow.
    B) John's investment gives a lower rate of return.
    C) Tom's investment is more risky.
    D) According to the separation principle, Tom and John select the same combination of the risk-free asset and the risky portfolio.

19. Which of the following orders is most useful to short sellers who want to limit their potential losses?
    A) Limit order
    B) Discretionary order
    C) Limit-loss order
    D) Stop-buy order
    E) None of the above

20. Through diversification, investors cannot eliminate:
    A) market risk.
    B) firm-specific risk.
    C) idiosyncratic risk.
    D) both A and C.

21. Assume you sold short 100 shares of common stock at $50 per share. The initial margin is 60%. What would be the maintenance margin if a margin call is made at a stock price of $60?
    A) 40%
    B) 33%
    C) 35%
    D) 25%
    E) none of the above

22. Multiple Mutual Funds had year-end assets of $457,000,000 and liabilities of $17,000,000. There were 24,300,000 shares in the fund at year-end. What was Multiple Mutual's Net Asset Value?
    A) $18.11
    B) $18.81
    C) $69.96
    D) $7.00
    E) $181.07

23. Assume you purchased 200 shares of XYZ common stock on margin at $70 per share from your broker. If the initial margin is 55%, how much did you borrow from the broker?
    A) $6,000
    B) $4,000
    C) $7,700
    D) $7,000
    E) $6,300

24. A leveraged position in the risky asset refers to:
    A) an investment in the risk-free asset while selling short the risky portfolio.
    B) an investment in the risky portfolio that is partly financed by borrowing.
    C) an investment where half of the wealth is placed in the risk-free asset and half in the risky portfolio.
    D) neither of the above.

Use the following to answer questions 25-26:

You invest $1000 in a risky asset with an expected rate of return of 0.17 and a standard deviation of 0.40 and a T-bill with a rate of return of 0.04.

25. What percentages of your money must be invested in the risky asset and the risk-free asset, respectively, to form a portfolio with an expected return of 0.11?
    A) 53.8% and 46.2%
    B) 75% and 25%
    C) 62.5% and 37.5%
    D) 46.1% and 53.8%
    E) Cannot be determined.

26. The slope of the Capital Allocation Line formed with the risky asset and the risk-free asset is equal to
    A) 0.325.
    B) 0.675.
    C) 0.912.
    D) 0.407.
    E) Cannot be determined.

27. Jargon Rapid Growth is a mutual fund that has traditionally accepted funds from new investors and issued new shares at net asset value. Jeremy Jargon manages the fund himself and has become concerned that its level of assets has become too high for his management abilities. He issues a statement that Jargon will no longer accept funds from new investors, but will continue to accept additional investments from current shareholders. Which of the following is true about Jargon Rapid Growth fund?
    A) Jargon used to be an open-end fund but has now become a closed-end fund.
    B) Jargon has always been an open-end fund and will remain an open-end fund.
    C) Jargon has always been a closed-end fund and will remain a closed-end fund.
    D) Jargon is violating SEC policy by refusing to accept new investors.

28. In a "best-efforts" basis
    A) the investment banker buys the stock from the company and resells the issue to the public.
    B) the investment banker agrees to help the firm sell the stock at a favorable price.
    C) the investment banker finds the best marketing arrangement for the investment banking firm.
    D) B and C.
    E) A and B.

Use the following to answer questions 29-30:

Consider two perfectly negatively correlated risky securities A and B. A has an expected rate of return of 12% and a standard deviation of 17%. B has an expected rate of return of 9% and a standard deviation of 14%.

29. The risk-free portfolio that can be formed with the two securities will earn _____ rate of return.
    A) 9.5%
    B) 10.4%
    C) 10.9%
    D) 9.9%
    E) none of the above

30. The weights of A and B in the global minimum variance portfolio are _____ and _____, respectively.
    A) 0.24; 0.76
    B) 0.50; 0.50
    C) 0.57; 0.43
    D) 0.45; 0.55
    E) 0.76; 0.24

Question 1

Define both open- and closed-end managed investment companies, making sure to enumerate the differences between them.

Question 2

The evolution of the stock market is shown in the table below:

	Year 0		Year 1	
	Price	No. of shares	Price	No. of shares
Stock A	15	500	14	500
Stock B	7	800	8	800
Stock C	32	100	15	200

(i) Is there a stock for which a stock-split occurs? If yes, which one and into how many shares does it split?

(ii) Calculate the price-weighted index for years 0 and 1.

(iii) Calculate the value-weighted index for year 1, given that the value-weighted index in year 0 equals $1,000$ points.

Question 3

An investor's optimal risky portfolio P offers a rate of return of 8% and has a standard deviation $\sigma_p = 12\%$. Her coefficient of risk aversion is $A = 4$. The market offers a risk-free asset with a rate of return of 4%.

(i) What proportion of the investor's wealth is invested in the risky portfolio (y^*)?

(ii) What are the complete portfolio's expected return, variance and standard deviation?

(iii) Draw the portfolio opportunity set, the CAL and show where the complete portfolio lies on the CAL.

Question 4

Extra credit: Draw the minimum variance frontier and explain what it plots. Show how its shape changes when the borrowing rate is higher than the lending rate, and detail on how a borrowing investor would be affected (as compared to the case when the lending rate and the borrowing rate are equal).