***The format of Exam #1 is roughly similar to the practice exam below. There is no answer key available, but you should be able to find the answers based on lecture notes, homework, and the textbook. Please work with your classmates to check your answers. If you have specific questions, please contact the professor via e-mail or during office hours.

PART I – MULTIPLE CHOICE (50 POINTS, 2 POINTS EACH) - Please choose the <u>best</u> answer.

- 1. Stock holders are
 - a) the owners of a company.
 - b) residual claimants.
 - c) entitled to dividend payments
 - d) All of the above.

2. The secondary market is where

- a) investment banks serve as underwriters for borrowers.
- b) previously-issued securities are traded.
- c) borrowers issue new bonds.
- d) None of the above.

Currency	\$500	Institutional money market funds	\$1200
(Non-bank) traveler's checks	\$20	Small time deposits	\$800
Demand deposits	\$800	Large time deposits	\$1400
Savings and money market deposits	\$2800	Repurchase agreements	\$200
Retail money market funds	\$900	Eurodollars	\$150
Commercial paper	\$3500	Treasury bills	\$2000

- 3. Using the table above, M2 is equal to
 - a) \$1,320
 - b) \$5,820
 - c) \$8,520
 - d) \$11,920
- 4. Consider the statement: "Textbooks are too expensive." This person is
 - a) Using money as a unit of account.
 - b) Using money as a medium of exchange.
 - c) Using money as a store of value.
 - d) Using the term "money" incorrectly.
- 5. Which of the following is true of the monetary aggregates?
 - a) The share of M1 held in currency is less than 50%.
 - b) When someone transfers deposits from a savings account into a checking account, M2 decreases and M1 increases.
 - c) Since 1977, people have shifted their wealth into more liquid forms of money.
 - d) The share of M2 held in savings deposits as increased since 1977.
- 6. Suppose Fed wants to achieve an inflation rate of 2.5%. Output growth is currently 1.5% and the interest rate is 5%. If velocity is constant, then what money supply growth rate will achieve this objective?a) 1%
 - b) 1.5%
 - c) 2.5%
 - d) 4%

- 7. Fiat money is
 - a) Money with substantial value outside of its use as a medium of exchange.
 - b) Almost nonexistent in most countries today.
 - c) inflation.
 - d) unit of account.
- 8. Consider M1 and M2. The _____ measure of money includes the assets with the higher interest, while _____ includes the assets with ______
 - a) M1...M2...higher liquidity
 - b) M1...M2...lower liquidity
 - c) M2...M1...higher liquidity
 - d) M2...M1...lower liquidity
- 9. Suppose you are currently paying a car loan at a fixed interest rate of 5%. The principal on your loan was \$12,000. If the yield to maturity rises, then
 - a) the present value of your future car payments decreases.
 - b) the present value of the loan increases from the lenders point of view.
 - c) you pay more interest in present value terms.
 - d) the lender can sell your loan to another lender for more than \$12,000.

$$\$600 = \frac{\$80}{(1+i)} + \frac{\$80}{(1+i)^2} + \frac{\$80}{(1+i)^3} + \frac{\$80}{(1+i)^4} + \frac{\$1000}{(1+i)^4}$$

- 10. During the late 1990s, the U.S. government ran a budget surplus for a brief period. Which of the following would you expect to see as a result of the surplus?
 - a) A decrease in the yield for Treasury bonds.
 - b) An increase in the liquidity of Treasury bonds.
 - c) An increase in the supply of Treasury bonds.
 - d) An increase in the risk premium paid for corporate debt.
- 11. If an investment offered an expected payoff of \$100 with \$0 variance, you would know that:
 - a) Half of the time the payoff is \$100 and the other half it is \$0.
 - b) The payoff is always \$100.
 - c) Half of the time the payoff is \$200 and the other half it is \$0.
 - d) None of the above.
- 12. Each answer below lists the returns on a particular asset, along with the probability of each return. Which asset would a risk averse investor purchase?
 - a) Return of -5% with probability 0.20; return of 0% with probability 0.60; return of 5% with probability 0.20.
 - b) Return of -5% with probability 0.25; return of 0% with probability 0.50; return of 5% with probability 0.25.
 - c) Return of -5% with probability 0.10; return of 0% with probability 0.80; return of 5% with probability 0.10.
 - d) A risk averse agent is indifferent among these assets.
- 13. Risk averse investors would respond to an increase in uncertainty on corporate bonds by
 - a) Requiring a higher risk-free rate.
 - b) selling their bonds.
 - c) buying more bonds.
 - d) both a) and c)

- 14. According to <u>expectations theory</u> of term structure, if interest rates are expected to be 2%, 2%, 4%, and 5% over the next four years, what is the yield on a <u>three-year</u> bond today?
 - a) 2.7%
 - b) 4%
 - c) 4.3%
 - d) 8%
- 15. Refer to the yield curve to the right. According to <u>liquidity</u> <u>premium</u> theory of the term structure, which of the following is correct?
 - a) interest rates are expected to remain steady in the future.
 - b) the liquidity premium for long-term bonds has declined relative to short-term bonds.
 - c) investors prefer long-term to short-term bonds.
 - d) None of the above.



- a) The normal yield curve has a positive slope.
- b) Why short-term yields are more volatile than long-term yields
- c) Interest rates on bonds with different maturities tend to move together over time.
- d) Theory is unable to explain facts b) and c)
- 17. Consider two companies listed on the Dow Jones and S&P 500: Exxon Mobil and International Business Machines (IBM). On July 27, 2007, Exxon closed at \$85.59 per share and IBM closed at \$117.31 per share. Exxon's market capitalization is \$474 billion, while IBM's is \$157 billion. Suppose that when markets open, Exxon's price increases by 5% and IBM's decreases by 5% while all other stock prices remain unchanged. Which of the following is correct?
 - a) Both the Dow Jones and S&P500 will decrease.
 - b) The Dow Jones will decrease and the S&P500 will increase.
 - c) The Dow Jones will increase and the S&P500 will decrease.
 - d) Both the Dow Jones and S&P500 will increase.

18. Which of the following statements is consistent with the efficient markets hypothesis?

- a) "I'm going to put more of my portfolio into the Vanguard Dividend Growth mutual fund because it performed well last year."
- b) "Today General Motors (GM) released its forecast for lower profits next year, but its stock price didn't change because the market already expected lower GM profits."
- c) "I have a great strategy for predicting stock prices. When I see the S&P 500 grow by 2%, I sell shares because this means the stock prices are going to drop in the near future."
- d) "Investors who use technical analysis generate abnormally high returns from buying and selling stock."
- 19. According to the theory of efficient markets
 - a) The current stock price is equal to the present value of expected future dividends paid on the stock.
 - b) The current stock price is equal to the stock's fundamental value.
 - c) Investors can outperform the market portfolio of stocks only by taking on idiosyncratic risk.
 - d) All of the above.



- 20. Suppose the current dividend on a stock is \$6 per share and is expected to be \$5.05 next year. The yield on Treasury bonds is equal to 4%. The current price of this stock is \$120. What is the implied risk premium on this stock?
 - a) 5%
 - b) 6%
 - c) 10%
 - d) 11%
- 21. If you observe an increase in the current stock price, this may have been caused by
 - a) an increase in the growth rate of dividends for this stock.
 - b) the arrival of information indicating that this corporation will reduce dividend payments in the future.
 - c) an increase in the required rate of return on stock.
 - d) a decrease in the demand for this stock.
- 22. Which of the following is NOT true of adverse selection?
 - a) It exists because information is perfect.
 - b) It describes the problem a lender faces in identifying good from bad risk loan applicants.
 - c) It arises because borrowers have more information than lenders regarding their creditworthiness.
 - d) It arises if lenders try to charge an average price to all applicants.
- 23. Without the ability of financial intermediaries to pool the resources of small savers:
 - a) Borrowers needing large amounts of money would find it more costly to obtain the funds.
 - b) The economy would not grow as fast.
 - c) The risk associated with lending would increase.
 - d) All of the above.
- 24. Mutual funds are attractive because:
 - a) They provide high returns from purchasing the financial securities of a few select companies.
 - b) They provide the investor with greater diversification at a lower cost than what most investors could obtain individually.
 - c) They have inside information that is not available to other investors.
 - d) Both a) and c)
- 25. Providing stock options to corporate managers was an idea designed to:
 - a) Hide increases in pay of corporate executives from stockholders.
 - b) Treat adverse selection.
 - c) Treat moral hazard.
 - d) Both a) and b)

Please continue to the next page

PART II – SHORT ANSWER QUESTIONS (50 POINTS)

***You will have a total of three short answer questions on your exam. I have provided a variety of questions to practice, so this section of the practice exam is longer than that on your actual exam.

1. Recessions and the Bond Market

This question analyzes how the bond market behaved during the Great Depression. Note, during the Great Depression, nominal interest rates fell dramatically.

1.1 What is the relationship between price and the yield to maturity? **Explain in detail,** giving an example involving a security.

1.2 **Illustrate** the bond market below. Clearly label the axes, bond demand, bond supply, the equilibrium bond price (P*) and equilibrium quantity of bonds (Q*). Label the equilibrium **point A**.



Bond Market

1.3 Suppose that the state of the economy worsens. How does the worsening state of the economy affect bond demand? Describe two possible ways in which an economic recession affects bond demand.

1.4 How does the worsening state of the economy affect bond supply? Explain.

- 1.5 **Illustrate** the effects you described in question #1.3 and #1.4 on the diagram above. Note, carefully read the description of the recession in the opening of the question before you answer. Your diagram must be consistent with the description in order to receive credit.
- 1.6 At the onset of the recession, what do you expect would have happened to the interest rate spread between corporate bond yields and Treasury bond yields? Explain two possible reasons for this change. [HINT: After decades of running balanced budgets, the government ran large deficits during the Great Depression].



1.10 According to expectations theory of term structure, what does this yield curve tell us about expected future short-term interest rates? **Explain in detail, citing/using the key assumptions of expectations theory**.

2. <u>Risk and Term Structure</u>

- 2.1 What is the comparable risk-free bond for 3-month commercial paper?
- 2.2 Which of the two bonds from question 2.1 has a higher yield to maturity? Cite two reasons why this is the case, and explain each.

2.3 Illustrate the market for commercial paper below. What happens to the demand for commercial paper during an economic expansion? Illustrate in your diagram below.



Market for Commercial Paper

- 2.4 What happens to the risk spread on your diagram? Explain briefly.
- 2.5 How will investors change the <u>composition</u> of bonds in their portfolios during a period of economic expansion? Explain why investors react this way. For simplicity, assume investors currently hold only commercial paper and risk-free bonds (i.e., no stocks or money) in their portfolios.

3. <u>Term Structure and Recession</u>

3.2 Using the information in the table below, plot out

Not only are spreads useful indicators of economic conditions, but the yield curve is as well. In the data, the yield curve tends to "flatten out" prior to recessions. For most of 2000 and at the beginning of 2001 (just prior to March 2001), the yield curve was either flat or inverted.

3.1 According to expectations theory of term structure, what do these changes in the yield curve signal about future interest rates? Explain, citing any relevant assumptions/implications of expectations theory.



inverted?

- 3.4 Were the predictions based on expectations theory from 3.1? Briefly explain why or why not.
- 3.5 Discuss one <u>other</u> theory of term structure that could viably explain why the yield curve flattens out prior to recessions. <u>Explain, citing any relevant assumptions/implications of this theory</u>.

4. Present Value and Risk

The questions below are not related to each other and draw on material from Chapters 4 & 5.

4.1 Suppose a two-year coupon bond has payments of \$40 and a face value of \$800. The interest rate is 8%. Compute the present value of the coupon payments and the principal payment of the bond. What is the price of this bond?

4.2 On the birth of your first child, your mother-in-law offers to pay for your child's college tuition with a onetime payment today. You find a forecast that in 18 years (when your child starts college) college tuition will be \$25,000 per year at your state university (for simplicity, assume that tuition will remain \$25,000 per year for each of the 4 years that your child will attend). Let the annual interest rate be 5 percent per year. How much money should your mother-in-law place into an account today in order to have \$25,000 each year for four years, starting 18 years from now?

4.3 Suppose you negotiate a one-year loan with a principal of \$1000 and the nominal interest rate is currently 7%. You expect the inflation rate to be 3% over the next year. When you repay the principal plus interest at the end of the year, the actual inflation rate is 2.5%. Compute the ex ante and ex post real interest rate. Who benefits from this unexpected decrease in inflation? Who loses?

An individual faces two alternatives for an investment: Asset A has the following probability return schedule

Probability of Return	Return (yield) %
0.25	11.0
0.20	10.5
0.20	9.5
0.15	9.0
0.10	6.5
0.10	-1.0

Asset B has a certain return of 8.0%. If the individual selects asset A does sheviolate the principle of risk aversion? Explain.