Second Midterm Exam

Fall 2018 Econ 180-266

Closed Book.
Calculators OK.
Time Allowed: 1 Hour 15 minutes
All Questions Carry Equal Marks

Section A: True or False

3 points for each correct answer; -3 points for each incorrect answer; 0 points for questions left unanswered. Total score on section A cannot be negative.

Please say if each of these statements is true or false.

1. State governments can declare bankruptcy.
TRUE or FALSE.

2. The S&P index is a total return index, including dividends.
TRUE or FALSE.

3. Real Estate Investment Trusts (REITs) are not subject to the corporate income tax.
TRUE or FALSE.

4. The panic of 1907 was resolved by the Federal Reserve making emergency loans to banks.
TRUE or FALSE

5. Sovereign bonds issued in the Eurozone since 2013 have included Collective Action Clauses.
TRUE or FALSE.

Section B: Multiple Choice.

4 points for each correct answer; -1 points for each incorrect answer; 0 points for questions left unanswered. Total score on section B cannot be negative.

1. Which of the following best describes a *Eurobond*?
A. Any bond sold in London.
B. Any bond sold in Europe.
C. Any bond denominated in a currency other than that of the issuer.
D. Any bond issued under foreign law.
E. Any bond denominated in euros.

2. Which of the following best describes the *TBA market*?
A. A market for corporate bonds that have investment grade credit ratings.
B. A forward market for agency mortgage backed securities.
C. A forward market for municipal securities.
D. The market for Treasury securities before auctions.
E. A trading platform for common stocks with a tight bid-ask spread.

3. Which of the following is a way for a US investor to invest in international stocks?
A. American Depository Receipts.
B. International Mutual Funds.
C. Auction rate securities.
D. Both A and B.
E. Both B and C.

4. Which of the following is the definition of *latency* in market microstructure?
A. The number of orders in an order book that cannot be seen.
B. The size of transactions.
C. The time that it takes to execute a trade.
D. The difference between the bid price and the ask price.
E. The number of trades that are not on organized exchanges.

5. Suppose that weather forecasts published in the New York Times could be used to predict future stock price movements. Such a finding would provide evidence against:
A. The weak form of the efficient markets hypothesis.
B. The semi-strong form of the efficient markets hypothesis.
C. All forms of the efficient markets hypothesis.
D. The Modigliani-Miller Theorem.
E. The dividend discount model.

6. Which of the following describes the voting members of the Federal Open Market Committee (FOMC)?
A. Only the governors of the Federal Reserve Board.
B. All of the governors of the Federal Reserve Board plus the president of the New York Fed.
C. All of the governors of the Federal Reserve Board plus the president of the New York Fed and four other Federal Reserve bank presidents, by rotation.
D. All of the governors of the Federal Reserve Board and seven of the Federal Reserve bank presidents, by rotation.
E. All of the governors of the Federal Reserve Board and all of the Federal Reserve bank presidents.

7. Who is the Federal Reserve Chairman today?
A. Ben Bernanke.
B. Janet Yellen.
C. Jerome Powell.
D. Steven Mnuchin.
E. Larry Kudlow.

8. Which of the following are true of agency (e.g. Fannie Mae) mortgage backed securities.
A. The agency insures them against default, but not against prepayment.
B. The agency insures them against prepayment, but not against default.
C. The agency insures them against both prepayment and default.
D. The agency insures them against both prepayment and default, but only if the mortgages are floating rate.
E. The agency insures them against neither prepayment nor default.

9. Which of the following is closest to the historical Sharpe ratio on major US stock market indices, like the S&P500?
A. 0.12
B. 0.44
C. 1.60
D. 2.50
E. 18.6

10. Which of the following is a dark pool?
A. A regulated trading venue where the order book is visible.
B. A regulated trading venue where the order book is not visible.
C. An unregulated trading venue where the order book is visible.
D. An unregulated trading venue where the order book is not visible.
E. A trading system set up by the New York Stock Exchange.
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Section C: Other questions

1. (10 points). According to the dividend discount model, if the required return on a stock is 10 percent, if it pays dividends of $1 per share (at time zero), and has a growth rate of dividends of 5 percent per annum, what should its price be?

2. (10 points). If you buy a share for $10, receive dividends of $2, and then sell it one year later for $9, what is your holding period return?

3. (20 points). Suppose that you buy a stock on margin. The stock price is $100 and you buy 1,000 shares, borrowing $50,000 and contributing $50,000 of your own money. Maintenance margin is 25 percent.
(a) At what price will you first receive a margin call?
(b) If the price of the stock falls to $60, how much extra margin must you post?

4. (5 points). Suppose that the following limit orders have been submitted to an order book.

- Andrew submits a limit order to buy 100 shares at $80.05 each.
- Brian submits a limit order to sell 100 shares at $80.20 each.
- Catherine submit a limit order to buy 100 shares at $80.12 each.
- Eleanor submits a limit order to sell 100 shares at $80.25 each.

Now, you submit a market order where you want to buy 100 shares. What price will you pay for these shares?

Solutions

Section A.
1. False.
2. False.
3. True.
4. False.
5. True.

Section B.
1. C.
2. B.
3. D.
4. C.
5. B.
6. C.
7. C.
8. A.
9. B.
10. B.

Section C.

1. The price should be $\frac{D_0(1+g)}{(k-g)} = \frac{1*1.05}{(0.1-0.05)} = \frac{1.05}{0.05} = 21$.

6 points for incorrectly putting a 1 in the numerator.

2. $\frac{2+10-9}{10} =$ 10%.

5 points for incorrectly putting 9 in the denominator.

3. (a) The price at which you first receive a margin call, P, solves $\frac{1000P-50000}{1000P} = 0.25$. The price is $66,667.

(b) The additional margin, X, solves the equation $\frac{60000-50000+X}{60000} = 0.25$. Solving this, the additional margin is $5,000.

15 points for people who divided by 50000 instead of 1000P
10 points for getting the numerator wrong.
5 points for mixing up buying the stock on margin and shorting the stock (i.e. doing things backwards).

4. You will be matched with the best limit order which is for $80.20 per share (or a total of $8,020).
OK to say either the price per share or the total payment. No partial credit on this question.