Midterm Examination 2

Version #3

Information/Instructions

Name_________________________

Signature ______________________

Student ID _____________________

TA___________________________

Discussion Number______________

This exam is closed book/closed notes. Calculators are not allowed.

You must use a #2 pencil to complete the exam.

How to Fill Out the Coding Sheet

1. Print your last name, first name, and middle initial in the spaces marked “last name”, etc. Fill in the corresponding bubbles below.
2. Print your student ID number in the spaces marked “identification number.” Fill in the bubbles.
3. Write the version number printed on the top of this cover page in “special codes” space A and fill in the appropriate bubble.
4. Write your discussion section number under “special codes” spaces BCD and fill in the bubbles.

Use your best judgment in answering these questions. If you are confused about any question and/or answer, raise your hand and ask a proctor for clarification. Remember, we are looking for the best answer to each question.

When you are done with the exam, please remain in your seat. Raise your hand and the proctors will come to collect your answers as well as this sheet. You must show your student ID when your exam is collected.
Questions
(There are 17 questions; each question is worth 2 points)

Section 1. IS/LM models

For questions 1-7, the IS/LM model you are to work with has this specification:

LM: \( \frac{M}{P} = m + l(r + \pi) + dY, \ l < 0, \ d > 0 \)

IS: \( Y = A + cY + br + G, \ c > 0, \ b < 0 \)

\( A, \ G, \ M, \ P, \) and \( \pi \) are exogenous. Note: there are no taxes.

1. Suppose that \( P \) decreases and \( G \) increases. Which of the following best describes the equilibrium effects of the two changes?

a. \( Y \) will increase and \( r \) will increase.

b. \( Y \) will decrease and \( r \) will decrease.

c. \( Y \) will increase, but one cannot tell whether \( r \) will increase, decrease, or remain the same without additional information on the magnitudes of the changes in \( P \) and \( G \) and the parameters of the IS/LM model.

d. One cannot determine for either \( r \) or \( Y \) whether the variable will increase, decrease, or remain the same without additional information on the magnitudes of the changes in \( P \) and \( G \) and the parameters of the IS/LM model.
2. If the level of $G$ is increased and the level of $M$ is simultaneously decreased, then in equilibrium, which statement will be correct?

a. $Y$ will increase and $r$ will increase.

b. $Y$ will increase and $r$ will decrease.

c. $r$ will increase, but the direction of the effect on $Y$ cannot be determined without additional information on the magnitudes of the changes in $G$ and $M$ and the parameters of the IS/LM model.

d. $Y$ will not change, but the direction of the effect on $r$ cannot be determined without additional information on the magnitudes of the changes in $G$ and $M$ and on magnitudes of the parameters of the IS/LM model.

3. Suppose that the level of inflation, $\pi$, is increased by 1 unit. This change in the level of inflation will have what effect on the equilibrium nominal interest rate $i$? Hint. Determine how a one unit change affects the real interest rate $r$ and use this to determine the effect on the nominal interest rate.

a. $i$ will increase by more than 1.

b. $i$ will increase by less than 1.

c. $i$ will increase by 1.

d. $i$ will decrease.

4. Suppose that $A$ increases and $G$ decreases. Which of the following best describes the equilibrium effects of the two changes?

a. $Y$ will increase and $r$ will increase.

b. $Y$ will increase and $r$ will not change

c. $Y$ will not change and $r$ will not change.

d. One cannot determine the direction of the equilibrium effects on $r$ and $Y$ without knowing the magnitudes of the changes in $A$ and $G$. 

5. For this question, interpret the income expenditure model as the IS equation with a fixed interest rate. Suppose that the demand for money does not depend on the level of interest, i.e. \( l = 0 \). (Note this assumption only holds for this question.) Which of the following holds for this version of the IS/LM model?

a. The government spending multiplier for the IS/LM model is the lower than the government spending multiplier for the income expenditure model.

b. The government spending multiplier for the IS/LM model is higher than the government spending multiplier for the income expenditure model.

c. The government spending multiplier for the IS/LM model is the same as the government spending multiplier for the income expenditure model.

d. One cannot compare the multipliers for the two models without additional information on the parameters of the IS/LM model.

6. Suppose that the supply of money is an increasing function of the level of output, i.e. we replace the exogenous money supply with an endogenous money supply. (This modification only applies to this question.):

\[
M = m_0 + m_1 Y, \quad m_1 > 0
\]

(Assume that \( m_1 \) is small enough that the new LM curve is still upward sloping.) If we compare the equilibrium effect of a 1 unit increase in \( G \) for this case versus the original IS/LM model with an exogenous money supply, which of the following will be true?

a. The equilibrium increase in output generated by the increase in \( G \) is lower for the endogenous money supply case than for the exogenous money supply case.

b. The equilibrium increase in output generated by the increase in \( G \) is higher for the endogenous money supply case than for the exogenous money supply case.

c. The equilibrium increase in output generated by the increase in \( G \) is the same for the endogenous money supply case as for the exogenous money supply case.

d. One cannot compare the equilibrium effects without more information on the magnitudes of the parameters of the IS/LM model.
7. Suppose we modify the IS/LM model so that investment does not depend on the real interest rate, i.e. \( b = 0 \). (This modification only applies to this question.) Suppose that the money supply \( M \) is increased. Which will be the effect?

a. \( r \) will decrease and \( Y \) will increase.

b. \( r \) will increase and \( Y \) will decrease.

c. \( r \) will decrease and \( Y \) will remain the same.

d. One cannot say whether either \( r \) or \( Y \) will increase, decrease, or remain the same without additional information on the magnitudes of the parameters of the IS/LM model.

Section 2. General

8. According to the pure expectations-based term structure of interest rates theory (i.e. there is no risk premium), suppose that the current one period rate, \( i_t \), is .02, the expected value of the one period rate at \( t+1 \), \( E_t(i_{t+1}) \), is .04 and the expected value of the one period rate at \( t+2 \), \( E_t(i_{t+2}) \) is .12. What is value of \( i_{3t} \), the yield on a 3 period bond at time \( t \)?

a. .06

b. .03

c. .02

d. .01
9. If all individuals in the economy become convinced that tomorrow all paper currency will be worthless (they believe this with certainty), which of following will happen today, based upon theories of the demand for money discussed in this course?

a. Nothing, since the belief about the value of paper currency relates to tomorrow.

b. Paper currency will become worthless today.

c. Paper currency will maintain some value today, but prices for commodities such as gold that may be used as commodity moneys will increase.

d. None of the above.

10. The supply of money in the United States is determined by

a. the President

b. the International Monetary Fund

c. the interactions of the Federal Reserve and the banking sector

d. the Congress

11. Which of the following is a component of the money measure M1?

a. foreign currency held by Americans

b. traveler’s checks

c. money market mutual funds

d. none of the above
12. The reserve requirement for banks refers to

a. the level of reserves a bank must hold relative to its level of demand deposits

b. the amount of currency an individual holds

c. the percentage cash an investor needs to buy a stock

d. none of the above

13. An open market operation that increases the money supply

a. reduces the holdings of government bonds held by the Federal Reserve.

b. increases the holdings of government bonds held by the Federal Reserve.

c. has no effect on the holdings of government bonds held by the Federal Reserve.

d. has nothing to do with government bonds.

14. The quantities traded in the Federal Funds Market are

a. bank reserves

b. government bonds

c. government loans to consumers

d. government subsidized housing loans
15. According to the random walk theory of stock prices

a. The expected value of the level of the price of a stock tomorrow is its price today.

b. The expected value of the level of the price of a stock tomorrow is higher than its value today.

c. The expected value of the level of the price of a stock tomorrow is lower than its value today.

d. None of the above.

16. The capital asset pricing model has which of the following implications?

a. The appropriate measure of the riskiness of an asset is the covariance of its return with the return on the market portfolio.

b. The expected return on an asset is entirely determined by the variance of its return.

c. The expected holding return on all assets must be equal to each other in equilibrium.

d. All of the above.

17. Suppose that the nominal supply of money is measured by M1 and the value of $PY$ (price times the quantity of output) for the economy as a whole is measured by nominal GDP. The velocity of money was approximately which value in 2004, given that nominal GDP was about $11.8$ trillion and M1 $1.3$ trillion?

a. 21

b. 15

c. 9

d. 3