Midterm Examination #2

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 your discussion section number under “special codes” spaces ABC 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 15 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. If the levels of \( G \) and \( M \) are simultaneously increased, 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. \( Y \) will increase, 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 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.
2. Suppose that $G$ is increased. Suppose that the Federal Reserve wants to maintain a constant real interest rate level. Therefore, in response to the change in $G$ the Federal Reserve adjusts $M$ to maintain the same level of $r$ that existed before $G$ was changed. Taking the change in $G$ and change in $M$ together, which statement describes the equilibrium change in output?

   a. $Y$ will increase.
   b. $Y$ will decrease.
   c. $Y$ will remain the same.
   d. One cannot determine whether $Y$ will increase, decrease, or remain the same without additional information on the magnitudes and directions of the changes in $G$ and $M$ and on the magnitudes of the parameters of the IS/LM model.

3. Suppose the level of $A$ is increased and the level of $M$ is decreased. Which statement best describes the change in the model equilibrium?

   a. $Y$ will increase.
   b. $Y$ will decrease.
   c. $r$ will increase.
   d. The directions of the changes for $r$ and $Y$ cannot be determined without additional information on the size of the changes in $NX$ and $M$ and the parameters of the IS/LM model.

4. Suppose that the level of inflation, $\pi$, is increased. This change in the level of inflation will have which effect in equilibrium?

   a. $r$ will decrease and $Y$ will decrease.
   b. $r$ will increase and $Y$ will increase.
   c. $r$ will increase and $Y$ will decrease.
   d. $r$ will decrease and $Y$ will increase.
5. Suppose we modify the IS/LM model so that the demand for money does not depend on the nominal interest rate, i.e. \( l = 0 \). (This modification only applies to this question.) Suppose that \( G \) is increased and that, exactly as in question 2, the Federal Reserve wants to maintain a constant real interest rate level. Therefore in response to the change in \( G \) it adjusts \( M \) to maintain the same level of \( r \) that existed before \( G \) was changed. Which of the following statements correctly characterizes the equilibrium effect of the joint change in \( G \) and in \( M \) on output?

   a. \( Y \) will increase.

   b. \( Y \) will decrease.

   c. \( Y \) will remain the same.

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

6. In comparing the government spending multiplier for the income/expenditure model and the IS/LM model, which of the following is true? **Note: in answering this question, the income/expenditure model is defined as the IS equation described at the beginning of this section with \( r \) fixed at some value \( \bar{r} \).**

   a. The government spending multiplier for the income expenditure models equals the government spending multiplier for the IS/LM model.

   b. The government spending multiplier is larger in the income/expenditure model than in the IS/LM model.

   c. The government spending multiplier is lower in the income expenditure model than in the IS/LM model.

   d. None of the above.
7. Suppose that the demand for money does not depend on output, i.e. \( d = 0 \). Then the government spending multiplier for the IS/LM model will equal what value?

   a. 0
   
   b. 1
   
   c. \( \frac{1}{1-c} \)
   
   d. None of the above, since the multiplier will depend on the model parameters \( b \) and \( d \)

Section 2. General

8. Which of the following is not a component of the money measure M1

   a. Currency
   
   b. Demand deposits
   
   c. Travelers checks
   
   d. Government bonds

9. Suppose the Federal Reserve Board decides to lower the money supply. Which of the following is true?

   a. This decision must be approved by the Congress.
   
   b. This decision must be approved by the President.
   
   c. This decision must be made jointly with the Congress and the President.
   
   d. The Federal Reserve Board may implement the money supply reduction without the approval of other parts of the government.
10. Suppose that for the next 3 time periods starting today the one period real interest rate on government bonds is known and fixed at 10%. Assume that there is no inflation between any of the periods. What is the approximate value of a promise (with no default risk) to pay $100 3 periods from now?

   a. $33.33.
   b. $50.00.
   c. $75.00.
   d. $100.00.

11. Decisions on the size of the money supply are made by

   a. the Federal Reserve Board of Governors.
   b. the presidents of the 12 regional Federal Reserve Banks.
   c. the Federal Open Market Committee.
   d. the Federal Reserve Bank of New York, since they make the actual transactions.

12. If the Federal Reserve decides to raise the money supply through an open market operation, this means

   a. money is printed and distributed freely to private banks.
   b. the Federal Reserve Bank of New York buys government bonds and thereby injects more money into the economy
   c. the Federal Reserve Board of Governors announces that interest rates will be fixed at a lower rate than currently exists.
   d. none of the above.
13. 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

14. 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 2002?

   a. 3
   b. 9
   c. 15
   d. 21

15. Which of the following is true about the money supply measures M1 and M2?

   a. M1>M2
   b. M1<M2
   c. M1 and M2 are made up of different components, thus there is no necessary relationship between their relative sizes

(Note: there is no answer d for this question)