ECO 209Y
MACROECONOMIC THEORY AND POLICY

Term Test #1

LAST NAME ____________________________________________

FIRST NAME ____________________________________________

STUDENT NUMBER _______________________________________

Circle your section of the course:

L0101  M – 2-4

L0301  W – 2-4

L0401  R – 2-4

INSTRUCTIONS:

1. The total time for this test is 1 hour and 40 minutes.
2. Aids allowed: a simple, non-programmable calculator.
3. Use pen instead of pencil.

DO NOT WRITE IN THIS SPACE

Part I  ________/36  Part III  1. ________/10

Part II ________/24  2. ________/10

TOTAL ________/80
PART I (36 marks)

**Instructions:**
- Enter your answer to each question in the table below. Table cells left blank will receive a zero mark for that question.
- Each question is worth 3 marks for a maximum of 36 possible marks. No deductions will be made for incorrect answers.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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</tbody>
</table>

1. Acme Publishers Ltd. produced 10,000 economics textbooks last year, which it sold at $120 a piece. In order to produce these 10,000 textbooks, Acme hired 12 workers at a cost of $350,000 to operate 5 printers valued at $25,000 a piece. In addition, Acme spent $450,000 in the paper and ink, the only two materials needed to produce these textbooks. Finally, ACME had to pay $75,000 in taxes on the $150,000 profit it made from this venture. Acme’s contribution to GDP is
   A) $500,000.
   B) $700,000.
   C) $575,000.
   D) $750,000.
   E) none of the above.

2. Suppose that the federal government runs a budget surplus of $20 billion. It collects $100 billion in taxes, and it has the following expenditures: $20 billion in Social Security benefits, $10 billion in interest on the national debt, $10 billion in rent, and $40 billion in wages. The government contribution to GDP is
   A) $80 billion.
   B) $50 billion.
   C) $70 billion.
   D) $40 billion.
   E) none of the above

*Use this space for rough work.*
3. In a closed economy, which one of the following statements about national savings is false?
   A) National savings is the sum of private saving minus government budget deficit.
   B) National savings reflects the output that remains after the demand of consumers and the government has been satisfied.
   C) National savings is the total amount of banks’ savings deposits.
   D) National savings equals investment at the equilibrium interest rate.
   E) Both A) and C) are false.

4. Which of the following transactions is viewed as investment when calculating GDP?
   A) The Bank of Montreal buys $10,000 of federal government bonds.
   B) Daniel, a construction worker, builds himself a garage.
   C) Your family buys a newly constructed home.
   E) Both B) and C).

5. Suppose that an economy produces only apples, bananas, and oranges, and that prices (in dollars) and quantities (in millions of pounds) are as shown in the following table:

<table>
<thead>
<tr>
<th>Good</th>
<th>Year 2009</th>
<th>Year 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td>Price</td>
</tr>
<tr>
<td>Apples</td>
<td>20</td>
<td>$6</td>
</tr>
<tr>
<td>Bananas</td>
<td>10</td>
<td>$8</td>
</tr>
<tr>
<td>Oranges</td>
<td>5</td>
<td>$10</td>
</tr>
</tbody>
</table>

If 2009 is the base period, what is the approximate value of the GDP deflator for 2010?
   A) 110.7.
   B) 104.6.
   C) 98.7.
   D) 112.5.
   E) None of the above.

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*Use this space for rough work.*
6. Consider an open economy in equilibrium where private savings equals private investment and the government has a positive budget surplus. Given the above, which of the following is true? [Note: The notation is as used in class.]
   A) \( C + I + G > Y \).
   B) \( C + I + G < Y \).
   C) \( NX < 0 \).
   D) \( X = Q \).
   E) None of the above is true.

7. Consider the AE model of an open economy developed in class. Suppose that an economy is initially in equilibrium and autonomous exports increase. All else equal, which of the following will be false in the new equilibrium?
   A) Government budget deficit will decrease.
   B) Imports will increase.
   C) Private investment will not change.
   D) Consumption will increase.
   E) Private savings will decrease.

8. If autonomous taxes decreased by $100 million, which one of the following would be true in the new equilibrium?
   A) The government budget deficit would increase by $100 million.
   B) The government budget deficit would increase by more than $100 million.
   C) The government budget deficit would increase by less than $100 million.
   D) The government budget deficit would decrease by $100 million.
   E) The government budget deficit would decrease by less than $100 million.

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Use this space for rough work.
9. If investment were extremely sensitive to changes in the interest rate, which one of the following would be true?
   A) The expenditure multiplier would be relatively large.
   B) The AE curve corresponding to each interest rate would be relatively flat.
   C) A given change in the interest rate would cause a relatively large shift outward of the IS curve.
   D) The slope of the IS curve would be relatively steep.
   E) None of the above would be true.

10. Which of the following would cause the IS curve to shift inwards?
   A) An increase in autonomous investment.
   B) An increase in the rate of interest.
   C) A decrease in the rate of interest.
   D) An increase in autonomous private savings.
   E) Both B) and D).

11. If the economy were experiencing an expansion, all else equal, which of the following would be true?
   A) Government transfer payments would be rising.
   B) The cyclical budget deficit would be decreasing.
   C) The structural budget surplus would be increasing.
   D) Consumption would be rising and private savings would be falling.
   E) Both C) and D) would be true.

12. Suppose that the MPC_{YD} = MPC_Y and that government purchases and autonomous taxes both rose by $100 million, then equilibrium income would
   A) remain unchanged.
   B) increase but by less than $100 million.
   C) increase by more than $100 million.
   D) increase by $100 million.
   E) fall by less than $100 million.

Use this space for rough work.
PART II  (24 marks)

Consider the following model of the economy:

\[ \begin{align*}
C &= 325 + 0.8YD - 10i \\
I &= 100 - 15i + 0.08Y \\
G &= 260 \\
TR &= 100 \\
TA &= 50 + 0.1Y \\
Y_{fe} &= 3500
\end{align*} \]

a) What is the equation for the IS curve in this model? (4 marks)

b) If the rate of interest is 5 percent (i.e., \( i = 5 \)), what is the equation for the corresponding AE curve? (1 mark) What is the level of equilibrium income when \( i = 5 \)? (1 mark) What is the size of the aggregate expenditure multiplier? (2 marks)
c) What is the level of private saving (S) when the economy is in equilibrium at i = 5? What is the level of government saving (or budget surplus, BS) when the economy is in this equilibrium? What is the level of national saving (Sn) when the economy is in this equilibrium? What is the level of private investment in this equilibrium (6 marks)

d) Given the situation of the economy and the budgetary situation of the government you have described above, what do you think the government should do to improve that situation? (3 marks)
e) By how much could government purchases (G) increase without moving the government into a situation of a structural deficit? What would be the level of equilibrium income if the government were to increase G by this amount? (2 marks)

f) All else equal, what change in government purchases (G) would be necessary for the economy to reach the level of full-employment income? (1 mark) Given this increase in G, what would be the level of government saving (or budget surplus) at the level of full-employment income? (1 mark) In your view, should the government implement such an increase in G? Explain your answer. (3 marks)
PART III  

(20 marks)

**Instructions:** Answer true, false, or uncertain to the following statements. Marks will be given entirely for your explanation. Each question is worth 10 marks.

1. Expansionary fiscal policy is less effective with respect to income when investment is an increasing function of income. (Show your answer algebraically and explain the economics.)
2. Assuming that the tax rate \( t \) is positive, an increase of $100 million in government purchases accompanied by an increase of $100 million in autonomous taxes will leave both the government budget surplus and the level of equilibrium income unchanged. (Show your answer algebraically and explain the economics.)