There are 30 multiple choice questions, worth 2.5 points each (for a total of 75 points). The short answer questions are worth 25 points.

Feel free to write on this exam!

Please follow these instructions carefully!

1. Write your name on this exam.
2. Write (and fill in) your name (including first initial!) and student ID number on the scantron form.
3. Please fill in the section number (001) and test form (A) on your scantron answer sheet.
4. Fill in ONE answer for each question on your scantron form. No credit will be given if you fill in more than one circle.
5. Write clearly on the short answer part of the exam. If I cannot read your answer, you will not receive credit for it.
6. If you have any questions during the exam, please ask me.
Multiple Choice (30 questions, 2.5 points each, 75 points total). Choose the ONE BEST response to each of the following multiple choice questions.

1. The multiplier model is designed to answer which one of the following questions?
   a. What causes changes in autonomous expenditures?
   b. How will output be affected by changes in autonomous expenditures?
   c. How did the economy arrive at its current price and output level.
   d. How will prices respond to changes in autonomous expenditures?

2. Given AE = $1000 + 0.8Y, when income equals $6000, induced expenditures will be:
   a. $500
   b. $1000.
   c. $4800.
   d. $5800.

3. In the multiplier model, to determine equilibrium income, you first determine the multiplier and then multiply by:
   a. Aggregate production.
   b. The sum of all expenditures.
   c. The sum of all autonomous expenditures.
   d. The sum of all induced expenditures.

4. An increase in spending on federal social service programs is an example of:
   a. An expansionary fiscal policy.
   b. A contractionary fiscal policy.
   c. An expansionary monetary policy.
   d. A contractionary monetary policy.

5. Crowding out is associated with:
   a. A reduction in business investment resulting from an increase in government borrowing and higher interest rates.
   b. An increase in business investment resulting from an increase in government borrowing and higher interest rates.
   c. An increase in private savings caused by higher future tax liabilities when government increases borrowing.
   d. A decrease in government spending caused by a shortage of available credit.

6. According to the latest unemployment statistics:
   a. Unemployment was significantly higher in October than in the past two months.
   b. Unemployment was about the same in October as in the past two months.
   c. Unemployment was significantly lower in October than in the past two months.
<table>
<thead>
<tr>
<th>Income</th>
<th>AE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$500</td>
</tr>
<tr>
<td>$1,000</td>
<td>$1,167</td>
</tr>
<tr>
<td>$1,500</td>
<td>$1,500</td>
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<tr>
<td>$2,000</td>
<td>$1,833</td>
</tr>
<tr>
<td>$2,500</td>
<td>$2,167</td>
</tr>
</tbody>
</table>

7. In the table above, if income rises from $2,000 to $2,500, induced expenditures:
   a. Remain equal to $500.
   b. Remain equal to $1,833.
   c. Rise by $334.
   d. Rise to $2,167.

8. In the table above, if income rises from $2,000 to $2,500, autonomous expenditures:
   a. Remain equal to $500.
   b. Remain equal to $1,833.
   c. Rise by $334.
   d. Rise to $2,167.

9. In the table above, the marginal propensity to consume (\(m_{pc}\)) is:
   a. $500.
   b. $1500.
   c. 0.167.
   d. 0.667.

10. The expenditure function that reflects the table above is:
    a. \(AE = 0.667Y\).
    b. \(AE = 500 + 0.667Y\).
    c. \(Y = 500 + 0.667AE\)
    d. \(AE = 1500\).

11. For levels of production to the left of the point where the expenditure function intersects the aggregate production curve:
    a. Planned expenditures exceed production and businesses increase production.
    b. Planned expenditures exceed production and businesses decrease production.
    c. Production exceeds planned expenditures and businesses decrease production.
    d. Production exceeds planned expenditures and businesses increase production.

12. According to the latest data on real Gross Domestic Product:
    a. Real GDP growth was slower in the third quarter than in the second.
    b. Real GDP growth was about the same in the third quarter as in the second.
    c. Real GDP growth was faster in the third quarter than in the second.
    d. Real GDP growth declined in the third quarter compared to the second.
13. If a family’s expenditures increase from $25,000 to $30,000 per year when its income increases from $30,000 to $37,500, its \( mpc \) is:
   a. $5,000.
   b. $7,500.
   c. 0.80.
   d. 0.67.

14. Refer to the graph at the top of the page. The graphical representation of the equation \( AE = 500 + \frac{1}{3}Y \) is shown by which curve?
   a. A
   b. B
   c. C
   d. D

15. According to the multiplier model, an increase in the marginal propensity to consume:
   a. Raises output because it leads to an increase in autonomous expenditures.
   b. Reduces aggregate expenditure because it reduces the multiplier.
   c. Increases output because it increases the multiplier.
   d. Increases aggregate expenditure because it increases autonomous expenditure.

16. If an economy is in a recession, one fiscal policy that might help it recover is:
   a. A cut in social security payments.
   b. A cut in the income tax rate.
   c. A cut in education spending.
   d. An increase in property taxes.
17. Suppose $AE = 1000 + 0.2Y$. According to the multiplier model, equilibrium income will be:
   a. $1000.
   b. $1250.
   c. $2500.
   d. $3750.

18. Refer to the graph at the top of the page. If income is $900:
   a. Inventories are at the desired level.
   b. Inventories are above their desired level.
   c. Inventories are below their desired level.
   d. Real income cannot be determined.

19. Refer to the graph at the top of the page. If autonomous expenditures were to change to $300, equilibrium income would be:
   a. Greater than $600.
   b. $600.
   c. Less than $600.
   d. Unable to be determined from this information.

20. If the $mpc = 0.75$, and equilibrium income is $100 billion more than potential income, the multiplier model predicts that potential income can be attained by ________ government spending by ________ billion.
   a. Increasing; by $100.
   b. Decreasing; by $25.
   c. Increasing; by $25.
   d. Decreasing; by $20.
21. Given \( AE = 1000 + 0.8Y \), when income equal \( 6000 \), expenditures will be:
   a. \$4000
   b. \$4800
   c. \$5800
   d. \$6000

22. The reason the multiplier is greater than 1 is that:
   a. Spending generates income that is in turn re-spent.
   b. Savings are positive.
   c. The marginal propensity to save is 1.
   d. The marginal propensity to consume is 1.

23. Suppose equilibrium income is \( 3000 \) billion and government policy makers determine that potential income is \( 3400 \) billion. By how much must government spending change to obtain potential output if the \( mpc = 0.75 \)?
   a. Increase by \$400 billion.
   b. Decrease by \$300 billion.
   c. Increase by \$100 billion.
   d. Decrease by \$50 billion.

24. Budget surpluses:
   a. Can occur only when fiscal policy is contractionary.
   b. Can occur only when the economy is expanding rapidly.
   c. Can occur if fiscal policy is contractionary or if the economy is expanding rapidly.
   d. Cannot occur if fiscal policy is contractionary or if the economy is expanding rapidly.

25. If the \( mpc \) is 0.8 and autonomous expenditures are \$2000, then the multiplier equation implies that total equilibrium expenditures in the economy are:
   a. \$2,500.
   b. \$4,000.
   c. \$10,000.
   d. \$40,000.

26. Using fiscal policy to stabilize the economy is difficult for all of the following reasons except:
   a. Potential output is uncertain.
   b. The effects of policy changes cannot be known with certainty.
   c. There are time lags involved in the use of fiscal policy.
   d. The size of the debt doesn’t matter.

27. Suppose autonomous expenditures equal 1000 and the \( mpc \) is 0.6. Now suppose the \( mpc \) rises to 0.8. Using the multiplier equation, we know that equilibrium income will:
   a. Increase by 200.
   b. Decrease by 200.
   c. Increase by 800.
   d. Increase by 2,500.
28. When the government runs a deficit, the interest rate tends to:
   a. Rise.
   b. Fall.
   c. Remain unchanged.
   d. Remain or fall, depending on how the deficit is financed.

29. Last week the Federal Reserve Board of Governors met to consider their current policy regarding interest rates. At this meeting, they decided to:
   a. Raise interest rates to prevent future inflation.
   b. Hold interest rates steady while they wait for more economic data.
   c. Decrease interest rates to spur the economy.

30. In general, a $10 billion increase in government spending causes:
   a. An increase in income that exceeds $10 billion.
   b. An increase in income that equals $10 billion.
   c. An increase in income that is less than $10 billion.
   d. A decrease in income.
For each of the following questions, use the information contained in the following table. In order to receive full credit for these questions, you must show all of your work, and any equations used.

<table>
<thead>
<tr>
<th>Y</th>
<th>AE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$1,600</td>
</tr>
<tr>
<td>$1,000</td>
<td>$2,500</td>
</tr>
<tr>
<td>$1,500</td>
<td>$2,950</td>
</tr>
</tbody>
</table>

1. (4 points) What is the marginal propensity to consume for the expenditure function shown in the table above?

2. (3 points) What is the aggregate expenditure function described by the table above?

3. (5 points) If income is equal to $20,000 what is the level of *unplanned* expenditures in this economy?

4. (4 points) What is the value of the multiplier?
5. (4 points) What is the level of equilibrium income in this economy?

6. (5 points) Suppose that potential output in this economy were equal to $14,000. If the government wanted to change its spending to move the economy to potential output, by how much should they change G? Be clear about whether you are recommending an increase or decrease in government spending, and how much.

BONUS (1 extra credit point; you do not need to explain how you arrived at this answer). Suppose the government wanted to move the economy to potential by a change in personal income taxes instead of a change in government spending. Would the change in taxes have to be greater than, less than, or the same as the change in government spending?