**Economics 102: Kelly**      **Student Name:** _____
**Fall 1997**      **ID Number:** _____
**Midterm #2**      **Section Number:** _____
**November 17, 1997**      **T.A. Name:** _____
**Version 1**

## DO NOT BEGIN WORKING
## UNTIL THE INSTRUCTOR TELLS YOU TO DO SO.
## READ THESE INSTRUCTIONS FIRST

You have 2 hours to complete the exam, which consists of 4 problems (Part I) and 20 multiple-choice questions (Part II). Each problem is worth 10 points for a total of 40 points in Part I, and each multiple-choice question is worth 3 points for a total of 60 points in Part II. This exam has 14 pages.

Please answer Part I on this test booklet making sure that your answers are legible and that you are using complete sentences. **Show all work and formulas used. Your explanations will determine the grade.** Please answer Part II on your coding sheet with a #2 pencil. **Choose the best answer from the five alternatives offered.** Be sure to fill in the coding sheet carefully and accurately.

**How to fill in the coding sheet:**

1. Print your last name, first name and middle initial in the spaces marked "Last Name," "First Name," and "MI." Fill in the corresponding bubbles below.

2. Print your student ID number in the space marked "Identification Number." Fill in the corresponding bubbles below.

3. Write your discussion section number under "Special Codes" spaces **ABC**, and fill in the bubbles.

4. Write your version number under "Special Codes" space **D** and fill in the corresponding bubble.

The discussion sections are as follows:

| | | | | | |
|---|---|---|---|---|---|
| John Jones | 380 | 3:30 W | Moonsung Kang | 385 | 12:05 R |
| | 386 | 1:20 R | | 390 | 9:55 F |
| | 387 | 2:25 R | | 391 | 11:00 F |
| | | | | 393 | 12:05 F |
| | | | | | |
| Kyoungwon Rhee | 382 | 9:55 R | | | |
| | 384 | 11:00 R | | | |
| | 388 | 8:50 F | | | |
| | 389 | 9:55 F | | | |

- If you have any questions during the exam, stay seated and raise your hand.

- When you are finished, please get up quietly and bring your code sheet and this exam booklet to the place indicated by the instructors.

- **Stop, take a deep breath, and think carefully before you answer any questions. There are no intentional "tricks"; however, not all of the answers are intended to be obvious. Good Luck!**

**Part I.  Problem-type Questions (4 problems at 10 points each)**


**<u>Use this page as additional scratch paper for Question 1.</u>**

## Question 1

Consider the simple Keynesian model with no foreign sector.   Use the following table below to answer questions a) through d), assuming that $T = T_0 + tY$, $I = I_0$, and $G = G_0$.

| Y | T | DI | C | S | I | G | C+I+G |
|---|---|----|---|---|---|---|-------|
| 100 | | 90 | 95 | | | | |
| 200 | | 170 | | | | 65 | |
| 300 | | | 175 | | 60 | | |

a)  (2 pts.) Using the numbers in the table, find the tax parameters $T_0$ and $t$.

b)  (2 pts.) Using the numbers in the table, and your answer to part (a), find consumption as a linear function of *DI*.   (Hint:  first find *T* and *DI* for each value of *Y*.)

c)  (4 pts.) Fill in any remaining blanks in the above table.

d)  (2 pts.) What is the equilibrium level of output in this economy?

**Use this page as additional scratch paper for Question 2.**

### Question 2

Consider an economy that follows the Keynesian model, with:

$$AE = C + I + G + (X - M),$$
$$C = 100 + 0.8(Y - T),$$
$$I = 80,$$
$$G = 120,$$
$$X = 40,$$
$$M = 20,$$
$$T = 50.$$

(a) (1 pt.) Find equilibrium total production, $Y^e$, in this economy.

(b) (i)  (1 pt.) Find equilibrium savings.

   (ii) (1 pt.) Show that in equilibrium, leakages equal injections.

For parts (c), (d) and (e) assume that the only changes are those stated in the question.

(c) (2 pts.) Suppose that both lump-sum taxes and autonomous government spending increase by 10.  What is the **change** in equilibrium total production?

(d) (2 pts.)  Suppose autonomous investment increases by 30.    What is the level of consumption at the new equilibrium level of total production?

(e) (3 pts.) Now suppose that investment is no longer autonomous, but instead follows:
   $$I = 50 + 0.1Y.$$
   What is the new equilibrium level of total production?

**Use this page as additional scratch paper for Question 3.**

## Question 3

Consider a simple AS/AD model of the economy. Suppose that aggregate demand ($Y^d$) is given by:

$$Y^d = C + I,$$

You are also told that:

$$C = 10 + (3/4)Y - (P/4),$$
$$I = I_0,$$

where $P$ is the aggregate price level. Aggregate supply is given by:

$$Y^s = P.$$

a) (2 pts.) Solve for $Y^d$ as a function of $I_0$ and $P$. (Hint: substitute what you know about $C$ and $I$ into the equation for $Y^d$.)

b) (2 pts.) Suppose $I_0 = 10$. Find the equilibrium output and price level.

c) (2 pts.) Suppose $I_0$ increases from 10 to 20. Find the new equilibrium output and price level.

d) (2 pts.) Recall that the multiplier for autonomous investment is $DY^e/DI_0$. What is the multiplier on autonomous investment in this model?

e) (2 pts.) Is your answer to part (d) bigger or smaller than the answer you would get if this economy followed the simple Keynesian model?

**Use this page as additional scratch paper for Question 4.**

## Question 4

Consider the following Keynesian model where there is no foreign sector:

$$AE = C + I + G,$$
$$C = 200 + (2/3)(Y - T),$$
$$I = 60,$$
$$G = 50,$$
$$T = 15 + 1/2Y.$$

a)  (1 pt.) Find equilibrium output in this economy.

b)  (i)  (1 pt.) Find equilibrium savings.

   (ii) (1 pt.) Find equilibrium taxes.

   (iii) (1 pt.) Show that in equilibrium, leakages equal injections.

c)  (3 pts.)  Suppose that full employment output is 500.  Holding everything else fixed, if the government wanted to eliminate this recessionary (or inflationary) gap, by how much would it change autonomous government spending?

d)  (3 pts.)  Holding everything else fixed, if the government wanted to eliminate this recessionary (or inflationary) gap, by how much would it change autonomous taxes?

**Part II. Multiple-choice Questions (20 questions at 3 points each)**

1. Suppose that exports to Japan rise and at the same time money wages in the U.S. drop. If we use AS/AD analysis, then in the U.S. we would see the price level _____ and total output _____.

a) rise, rise
b) can't tell, rise
c) fall, can't tell
d) fall, fall
e) can't tell, can't tell

2. The value of the expenditure multiplier relates:

a) The change in equilibrium income to the change in autonomous spending.
b) The change in autonomous spending to the change in equilibrium income.
c) The change in consumption to the change in disposable income.
d) The change in equilibrium income to the change in induced consumption.
e) None of the above.

3. Suppose that an economy is in equilibrium and there is an inflationary gap. What would be the Keynesian method for reaching the full employment level of production?

a) Decreasing the price level.
b) Decreasing nominal wages.
c) Improving technology.
d) Increasing taxes.
e) Increasing government spending.

4. Consider the following economy:

| Y | C | S | I | G | X | M | C+I+G+ (X−M) | T |
|---|---|---|---|---|---|---|---|---|
| 500 | 300 | | 100 | 100 | 50 | | 450 | 100 |

In this economy, injections are _____, and leakages are _____.

a) 250, 300
b) 250, 250
c) 300, 250
d) 300, 300
e) 200, 300

5. Which of the following is **not** included in the measure of money M2?

a) M1
b) corporate bonds
c) savings account balances
d) cash
e) money market mutual funds

6. Consider the following economy, where the only two sectors are consumers and firms:
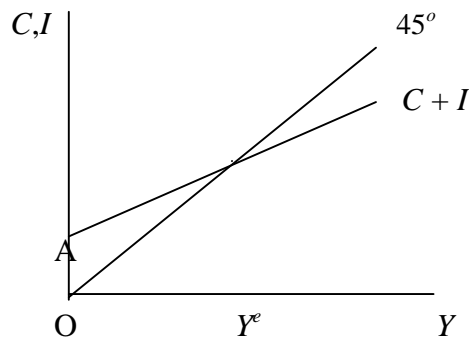


Assume that there are no taxes and that investment is autonomous and positive. Which of the following statements is **true**?

a) When $Y > Y^e$ there is pressure to increase production.
b) At $Y^e$, saving is 0.
c) When $Y < Y^e$, consumers are always in debt.
d) Autonomous consumption equals OA.
e) None of the preceding statements are true.

7. Consider the following table of a simple Keynesian economy with no government or foreign sector:

| Y | C | S | DI | $I = I_0$ | C+I | *D*inventories |
|---|---|---|---|---|---|---|
| 100 | 175 | | | 50 | | -125 |
| | | | | | 825 | 75 |

Assuming consumption is linear in disposable income, autonomous consumption is _____ and the marginal propensity to consume is _____.

a) 100, 3/4
b) 100, 4/5
c) 75, 3/4
d) 75, 4/5
e) 125, 4/5

8. Which of the following points best characterizes Keynesian models of the macro economy?

a) An upward-sloping AS curve.
b) A horizontal AS curve.
c) Fiscal policies are ineffective.
d) The economy tends toward full employment.
e) Prices are very flexible.

9. Suppose that lenders want a real return of 3 percent per year, the expected inflation rate is 2 percent, and the actual inflation rate turns out to be 3 percent. Then the nominal interest rate that lenders charge for loans should (approximately) be:

a) 3 percent
b) 6 percent
c) 5 percent
d) 2 percent
e) 4 percent

10. Consider an AS/AD model where the curves have their usual slopes. Suppose that government spending and taxes are cut by an equal amount. If the tax cuts make people more willing to work and save, the net effect of this fiscal policy change, considering both supply and demand, is to _____ the price level and to _____ output.

a) lower, raise
b) raise, raise
c) can't tell, raise
d) lower, lower
e) lower, can't tell

11. Consider a simple Keynesian model where *T*, *G* and *I* are autonomous and there is no foreign sector. If the marginal propensity to consume is 0.8, the tax expenditure multiplier will be:

a) 2
b) –2
c) 4
d) –4
e) –6

12. Which of the following statements is **false**?

a)  If people's expectations of future income increase, the consumption function will shift up.
b)  If aggregate expenditures exceed aggregate production, inventories will fall.
c)  A decrease in disposable income will shift the consumption function down.
d)  In equilibrium, injections equal leakages.
e)  Assuming the aggregate supply curve slopes upwards, an increase in autonomous consumption will cause prices to rise.

13. Which of the following is **true** about the circular flow diagram?

a)  Exports are a leakage, and investment is an injection.
b)  Government spending is an injection, and savings are a leakage.
c)  Both savings and imports are injections.
d)  Government spending is a leakage, and investment is an injection.
e)  Exports are a leakage, and imports are an injection.

14. Some possible problems with supply-side economics are:

a)  The supply side effects might be small and slow to arrive.
b)  Supply side policies increase income inequality.
c)  Supply side policies have demand side effects as well.
d)  Answers (a) and (c) are correct.
e)  Answers (a), (b) and (c) are correct.

15. The aggregate demand curve slopes downward because:

a)  Price increases erode real wealth, which in turn lowers consumption.
b)  If exchange rates are fixed, price increases increase the home country's imports and lower its exports.
c)  Price increases improve technology.
d)  Answers (a) and (b) are correct.
e)  All of the preceding answers are correct.

16. Which of the following will **not** increase equilibrium output?

a)  An increase in autonomous consumption.
b)  A decrease in autonomous taxes.
c)  An increase in autonomous investment.
d)  An increase in the marginal tax rate.
e)  All of the above changes will increase equilibrium output.

17. Which of the following statements is **false**?

a) If the AS and AD curves intersect at a point where $Y^e > Y_{fe}$, in the long run nominal wages will fall and move the AS curve to the right.
b) In the long run we are all dead.
c) At full employment, there will still be frictional unemployment.
d) An increase in the labor force will shift the AS curve outwards.
e) An increase in oil prices will cause stagflation.

18. Consider the simple Keynesian model with no foreign sector. What happens to the aggregate expenditure $(C+I+G)$ schedule if there is an equal increase in lump-sum taxes and autonomous government spending?

a) $(C+I+G)$ shifts upward.
b) $(C+I+G)$ shifts downward.
c) $(C+I+G)$ does not shift.
d) Any of the above could happen.
e) None of the above could happen.

19. Which of the following statements is **false**?

a) An increase in Japan's GDP will increase U.S. exports to Japan.
b) An increase in the stock of capital will shift the aggregate supply curve to the right.
c) An increase in the income tax rate will decrease the expenditure multiplier.
d) An increase in the real interest rate will increase investment.
e) A decrease in the aggregate price level will increase aggregate expenditures.

20. Suppose Mike's income taxes equal 10% of his gross income. In other words, his tax function is $T = 0.1Y$. Suppose that Mike also has a linear consumption function. When Mike's total income is $10,000, he spends all of his disposable income on consumption, and when his disposable income equals $18,000, he saves $3,000. Then Mike's marginal propensity to consume is _____, and his autonomous consumption is _____.

a) 3/5, $2,000
b) 2/3, $3,000
c) 7/10, $2,000
d) 3/4, $3,000
e) 4/5, $4,000