Midterm 2 Answer Key

Part I: Multiple Choice (60 points)

1. Money market mutual funds invest in

   A. residential mortgages.
   B. long term government securities.
   C. commercial real estate.
   D. highly liquid assets.

2. The slope of the consumption function is

   A. negative.
   B. 1.
   C. less than 1.
   D. greater than 1.

3. To prevent cost-push inflation

   A. there must not be an excess demand for money.
   B. interest rates must not rise.
   C. there must not be an increase in government purchases.
   D. the Fed must not let the quantity of money rise persistently.

4. Which of the following would shift the aggregate demand curve leftward year after year?

   A. a one-time tax cut
   B. inflation
   C. a one-time increase in government expenditures on goods and services
   D. negative growth in the quantity of money

5. When workers and employers correctly anticipate an increase in inflation caused by an increase in aggregate demand,

   A. workers will underestimate the real wage rate.
   B. workers will overestimate the real wage rate.
   C. unemployment will be at the natural rate.
   D. there will be no unemployment.

6. In the United States, of the following decades inflation was highest during the _____,

   A. 1960s
   B. 1990s
   C. 2000s
   D. 1970s

7. You observe that unplanned inventories are increasing. You predict that there will be _____.

   A. a recession
   B. a business cycle
   C. an expansion
   D. a trough

8. Actual aggregate expenditure is

   A. always equal to real GDP.
   B. only equal to real GDP at the equilibrium level of aggregate planned expenditure.
   C. never greater than real GDP but can be less than real GDP.
   D. never less than real GDP but can be greater than real GDP.

9. Suppose that a shock causes the aggregate demand curve to shift rightward. If the Fed does nothing,

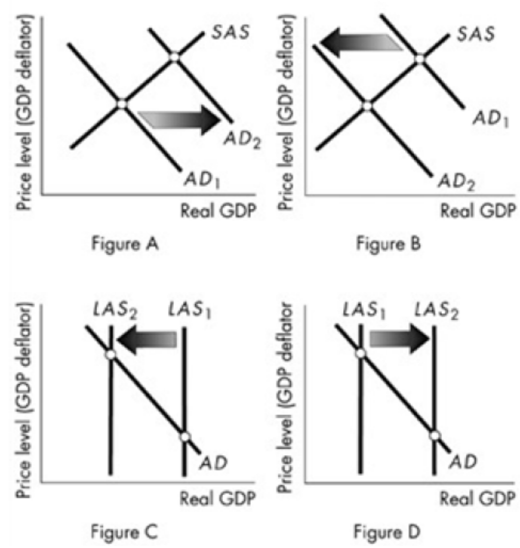
   A. eventually the short run aggregate supply curve will shift leftward and there will be continued inflation.
   B. the economy will experience a temporary reduction in employment but will eventually return to full employment.
   C. output initially will exceed potential GDP, but the economy will return to potential GDP with a higher price level.
   D. the short run aggregate supply curve will not shift leftward and there will be continued inflation.

10. By itself, an increase in the price of oil shifts the

    A. short-run aggregate supply curve leftward and does not shift the aggregate demand curve.
    B. aggregate demand curve leftward and does not shift the short- run aggregate supply curve.
    C. aggregate demand curve rightward and does not shift the short-run aggregate supply curve.
    D. short-run aggregate supply curve rightward and does not shift the aggregate demand curve.

11. Which of the figures best shows the start of a demand-pull inflation?

    A. Figure A
    B. Figure B
    C. Figure C
    D. Figure D



12. According to the intertemporal substitution effect, a higher price level

    A. makes it less costly for people to buy houses and cars.
    B. lowers the costs of building new plants and equipment.
    C. decreases the quantity of real GDP demanded.
    D. increases the quantity of real GDP demanded.

13. Which of the following is NOT an economic benefit of depository institutions?

    A. They pool risk
    B. They create liquidity
    C. They borrow long and lend short
    D. They reduce the cost of monitoring borrowers

14. Stagflation is the combination of

    A. inflation and increasing real GDP.
    B. inflation and recession.
    C. deflation with increasing real GDP.
    D. deflation and recession.

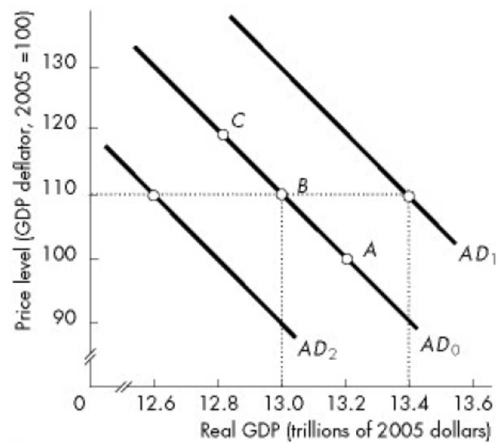
15. Of the following, the riskiest assets held by commercial banks are

    A. U.S. government Treasury bills.
    B. reserves.

C. commercial loans.
D. U.S. government bonds.

16. In the figure, the economy is initially at point B. If the government decreases transfer payments, there is

 A. a shift to AD_2.
 B. a movement to point A.
 C. a movement to point C.
 D. a shift to AD_1.



17. The size of the multiplier

 A. decreases in the longer run.
 B. stays constant in the longer run.
 C. increases in the longer run.
 D. is unaffected by the amount of time that elapses.

18. The quantity of real GDP demanded equals \$12.2 trillion when the GDP deflator is 90. If the GDP deflator rises to 95, the quantity of real GDP demanded equals

 A. less than \$12.2 trillion.
 B. \$12.2 trillion.
 C. more than \$12.2 trillion.
 D. more information is needed to determine if the quantity of real GDP demanded increases, decreases, or does not change.

19. If the Fed responds to an initial increase in aggregate demand by increasing the quantity of money

 A. money wages will fall to reduce unemployment.
 B. there is the risk of continued inflation.
 C. real GDP will begin to decrease more rapidly than if the quantity of money had remained constant.
 D. there will be no inflationary gap.

20. Given the list of assets below, which is the most liquid?

 A. \$500 worth of General Motors bonds
 B. a one-ounce gold coin
 C. a \$500 traveler's check
 D. \$500 worth of General Motors common stock

21. Which of the following is part of M2?

 A. credit cards
 B. currency held inside a bank
 C. checks
 D. None of these are part of M1 or M2.

22. In April 2008 the price of oil was approximately \$130 per barrel; in April 2015, it was approximately \$40 per barrel. This change in the price of oil could have started

 A. both a cost-push and a demand-pull inflation.
 B. a cost-push inflation.
 C. a demand-pull inflation.
 D. None of the above answers are correct.

23. Cigarettes served as money in some POW camps during World War II. Given this fact, we would expect to observe

A. prices of other goods expressed in terms of cigarettes.
B. people usually resorting to barter rather than using cigarettes as money.
C. no one ever smoking a cigarette.
D. only government-issued cigarettes being accepted as money.

24. A rational expectation is

A. always an incorrect forecast.
B. not necessarily correct but is the best available forecast.
C. a correct forecast but it might not be the best available forecast.
D. necessarily correct because it is the best available forecast.

25. Which of the following does NOT shift the short-run aggregate supply curve?

A. a change in the money wage rate
B. technological progress
C. a reduction in the price of a raw material
D. a change in the price level

26. The data in the table indicate that autonomous expenditure is

A. \$3.0 trillion.
B. \$0.3 trillion.
C. \$4.8 trillion.
D. indeterminate from the information given.

Real GDP (trillions of 2005 dollars)	Aggregate expenditure (trillions of 2005 dollars)
0	0.3
1.0	1.2
2.0	2.1
3.0	3.0
4.0	3.9
5.0	4.8

27. Which of the following is NOT a potential start of a demand-pull inflation?

A. an increase in the money supply
B. an increase in exports
C. an increase in government expenditure
D. an increase in taxes

28. If real disposable income increases by \$1500, consumption expenditures will

A. increase by more than \$1500.
B. increase by less than \$1500.
C. decrease by less than \$1500.
D. stay constant.

29. A one-time rise in the price level can turn into a demand-pull inflation when ______.

A. taxes consistently increase
B. the money wage rate continues to increase
C. the quantity of money persistently increases
D. the quantity of money persistently decreases

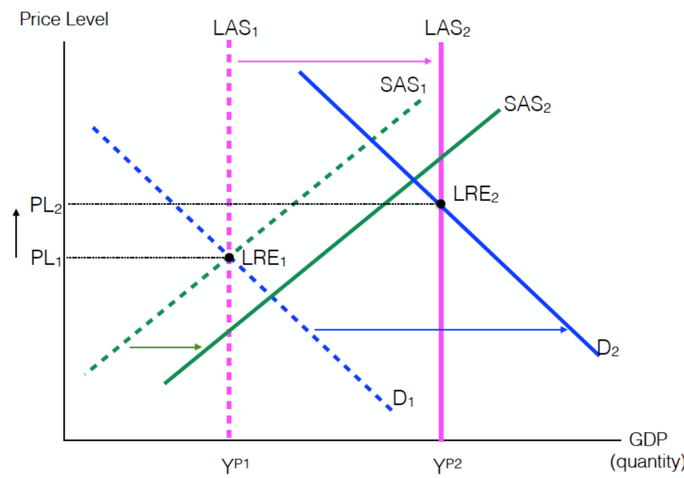
30. Which of the following does NOT occur as the economy moves from an expansion to a recession?

A. The change in planned spending exceeds the change in real GDP.
B. An initial decrease in autonomous spending is the trigger that creates the business cycle turning point.
C. The multiplier process reinforces any decrease in spending and pushes the economy into recession.
D. Incomes fall during recessions as firms cut production in response to unplanned increases in inventories.

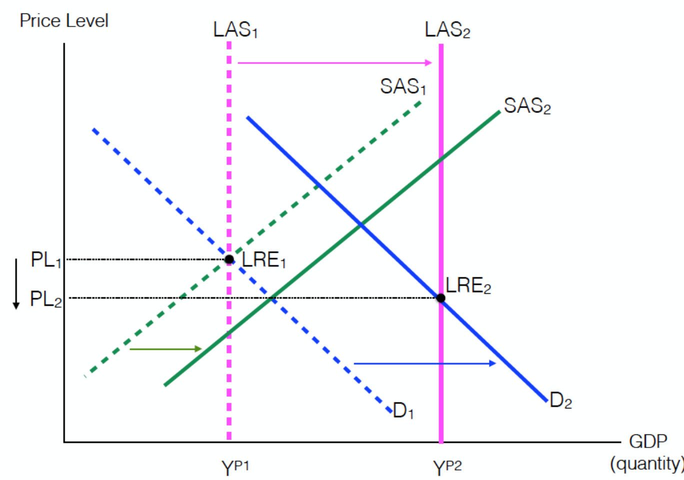
Part II. Problems (40 points)

1. (15 points) The economy is currently in the long-run equilibrium. Imagine that, suddenly, potential GDP grows. Using the AS-AD model, provide a graphic illustration and explain how this economy can end up with inflation or deflation (relatively to the original price level) in the new long-run equilibrium (do both inflation and deflation cases). *Make sure to label everything relevant.*

Case 1: Inflation
The economy is initially at point LRE_1. When the potential GDP grows, both LAS and SAS curves shift right. The new supply curves are LAS_2 and SAS_2. Since the economy is expanding, people get higher incomes and spend more money on goods and services. This shifts the demand curve to the right. When the shift in the demand curve is larger than the shift in the long-run aggregate supply curve, the new long-run equilibrium point will be at LRE_2 (the intersection of LAS_2 and AD_2 curves). This point corresponds to a higher than originally price level, PL_2, i.e. there is inflation. When shift of AD curve is bigger than the shift of the LAS curve, there always be inflation (relatively to the time before the shifts happened).



Case 2: Deflation
Alternatively, the aggregate demand curve might shift by less than the long-run aggregate supply curve. In this situation, prices decrease relatively to their original (before the shift) level, i.e. there is deflation.



GRADING:
5 points: stating "$\Delta AD > \Delta LAS \Rightarrow PL(LRE_2) > PL(LRE_1) \Rightarrow$ inflation" **and** showing the corresponding shifts in a graph
5 points: stating "$\Delta AD < \Delta LAS \Rightarrow PL(LRE_2) < PL(LRE_1) \Rightarrow$ deflation" **and** showing the corresponding shifts in a graph
5 points: clearly marking on the graphs the new **long-run** equilibrium points and price levels that correspond to them
-0.5 points: for each missing or incorrect label

2. (20 points) The economy is currently in equilibrium. The aggregate planned expenditure function is:

$$APE = C + I + G + E - IM$$

where E is exports, which are part of the autonomous expenditure, and IM are imports. Imports depend on the level of GDP and are described by the following import function:

$$IM = k \cdot GDP$$

The consumption function is:

$$C = a + b \cdot YD$$

where YD is disposable income. Taxes are autonomous and a, b, and k are constants.

a) (15 points) Derive the expression for the expenditure multiplier (denote multiplier by M).

Since the economy is in equilibrium, aggregate GDP is equal to aggregate income, Y. The consumption function can be rewritten in terms of GDP:

$$C = a + b \cdot YD = a + b(Y - T) = a + b(GDP - T) = a + b \cdot GDP - b \cdot T$$

We can further write the aggregate planned expenditure in terms of GDP by substituting in the consumption and import functions:

$$APE = C + I + G + E - IM = a + b \cdot GDP - b \cdot T + I + G + E - k \cdot GDP$$

This can be further simplified:

$$APE = \underbrace{a - bT + I + G + E}_{\text{autonomous consumption}} + \underbrace{(b - k)GDP}_{\text{induced consumption}}$$

Again, because the economy is in equilibrium, aggregate planned expenditure matches GDP exactly:

$$APE = GDP$$

Replace APE by GDP in the aggregate expenditure function:

$$GDP = a - bT + I + G + E + (b - k)GDP$$

Simplify and isolate GDP:

$$(1 - (b - k)) \cdot GDP = a - bT + I + G + E$$

$$GDP = \frac{1}{1 - (b - k)} \cdot (a - bT + I + G + E)$$

The expenditure multiplier is:

$$\boxed{M = \frac{1}{1 - (b - k)}}$$

GRADING: algebraic mistake - minus 3 points. Wrong derivation - minus 15 points.

b) (10 points) If $a = 3$, $b = 0.4$ and $k = 0.2$, what will the change in the equilibrium GDP be if exports decrease by 15?

$$\Delta G = M \cdot \Delta E = \frac{1}{1 - (0.4 - 0.2)} \cdot (-15) = \frac{1}{1 - 0.2} \cdot (-15) = 1.25 \cdot (-15) = -18.75$$

The equilibrium GDP will decrease by **18.75**.
GRADING: using the right formula but making a calculation mistake - minus 2 points.

Test 2 Statistics

	Not including extra credit	Including extra credit
Highest score:	98	100
Lowest score:	39	43
Average score:	78.7	81.3
Median score:	81	84.5
A (≥ 92):	3	10
A- ($88 - 91.99$):	8	8
B+ ($84 - 87.99$):	8	6
B ($80 - 83.99$):	6	6
B- ($76 - 79.99$):	7	4
C+ ($72 - 75.99$):	2	2
C ($68 - 71.99$):	6	4
C- ($64 - 67.99$):	1	2
D ($52 - 63.99$):	4	3
F (< 51.99):	1	1

Problematic Multiple Choice Questions

Q1: Money market mutual funds are part of M2. M2 is a measure of money that includes money and highly liquid assets. See pg. 184 of the textbook.

Q8: Recall that we measure GDP by adding all the actual expenditure in the economy (expenditure approach), thus, by definition, actual aggregate expenditure is always equal to GDP. Aggregate planned expenditure is different from the actual aggregate expenditure. See pg.271 of the textbook.

Q21: See W12 slide 10 or pg.184 of the textbook.