

III

1. Graph	

2. New equilibrium Real GDP	
-----------------------------	--

3. Graph	
Total (2+2+2)	

IV.

1. Change in Dollar Deposits	
2. Change in Bank Reserves	
3. Money Multiplier	
4. Change in Money Supply	
Total (1+1+2+1)	

V.

1. Required Reserve Ratio	
2. Excess Reserves	
3. Net Loans	
4. New Excess Reserves	
5. New Actual Reserve Ratio	
Total (1+1+1+1+1)	

VI.

1. New Recessionary Gap	
2. Aggregate Demand Equation	
3. Aggregate Supply Equation	
4. Long Run Aggregate Supply in 2010	
5. Not a cause for long term growth	
6. Reason for shift in AD	
7. Increase in Gov't expenditures	
Total (1+1+1+2+2+1+2)	

Answers

This Exam Consists of 17 printed pages, 50 Multiple choice questions and 6 short answer questions for a total of 117 points, plus the +4 if you turn in on time.

ECON 201 – Final Exam

Multiple Choice Section (50 questions, 75 points possible)

1. _____ refers to a period when the _____ decreases.
 - a. Recession; growth rate of nominal GDP
 - b. Recession; growth rate of output per person
 - c. Productivity growth slowdown; growth rate of real GDP
 - d. Productivity growth slowdown; growth rate of output per person

2. The CPI tells us
 - a. changes in prices of a group of goods and services bought by a typical urban household
 - b. the increase in prices of those goods that are rising fastest.
 - c. the rate at which wages are rising.
 - d. the increase in the prices of those goods that are rising slowest.

3. Which of the following expenditures associated with the production of a new high-performance SUV will be included in GDP?
 - a. the sale of bonds to finance the construction of the assembly plant.
 - b. the purchase of used welding robots to assemble to vehicles.
 - c. the purchase of new tires to be installed on the new vehicles.
 - d. the purchase of new machine tools to manufacture the engines

4. U.S. investment is financed from
 - a. private saving, government budget surpluses and borrowing from the rest of the world
 - b. private saving, government budget deficits and borrowing from the rest of the world.
 - c. private borrowing, government budget deficits and lending to the rest of the world.
 - d. private saving and borrowing from the rest of the world only.

5. Under a feedback-rule that targets real GDP, if the economy goes into a recession, the Fed would
 - a. increase the quantity of money.
 - b. reduce tax rates.
 - c. increase government purchases.
 - d. None of the above answers are correct.

6. Economists who advocate fixed rules might suggest that
 - a. the Fed should automatically adjust growth in the quantity of money to offset changes in the business cycle.
 - b. the economy is inherently unstable.
 - c. the quantity of money should expand at a constant rate.
 - d. Congress should delegate its money-creation powers to the president.

Consider the economy of the North Pole (population 10; assume that reindeer are treated as human workers for this question only) on the day before one foggy Christmas Eve:

Dasher and Dancer have cashed in on their fame by contracting to do commercials. Prancer is waiting to hear back from the electric company about the lightbulb-maintenance job he applied for. Vixen continues to send out resumes, preferring to sit at coffeeshops and network. Comet has a job at the observatory. Cupid and Donner are starting a business throwing seasonal parties. Blitzen has found a job play-testing Monopoly with Parker Brothers. Rudolph, the red-nosed reindeer, has given up looking for work because he isn't allowed to join in any reindeer games. Because he's hired no other staff, Santa Claus works hard, managing his shop and correspondence year-round by himself.

7. Which of the following statements is false?
- Vixen is unemployed
 - Only Rudolph is out of the labor force
 - Santa would report any income as "Proprietary Income"
 - The Labor Force Participation Rate at the North Pole is currently 7/10

Now, suppose that changing conditions are causing Santa to re-evaluate his use of reindeer labor further. He has the following production function

Point	# reindeer	#gifts (hundred millions)
A	0	0
B	1	900
C	2	1700
D	3	2400
E	4	3000
F	5	3500
G	6	3900
H	7	4200
I	8	4400
J	9	4500

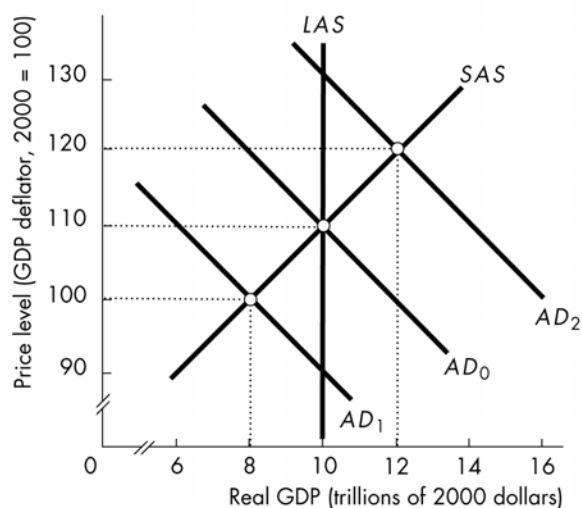
Santa's advertising clients pay him \$0.50 per hundred million gifts he delivers (they've suggested he deliver during the day for more exposure).

8. If Santa plans to hire eight reindeer, what is the market wage (in dollars per night) in the reindeer labor market:
- 40
 - 125
 - 100
 - 200

9. Which is the best possible explanation for the market wage being high enough that not all reindeer are hired?
- some of the reindeer are inherently lazy
 - there is both job search and job rationing
 - job search is lengthened by meager unemployment insurance benefits
 - all of the above are correct
10. Suppose that the ceteris paribus government forces Santa to hire a ninth reindeer: Rudolph. Which of the following statements is false?
- On the margin, Santa loses \$50 in short run profit by being forced to hire Rudolph
 - If the interest rate is 23%, Santa will be forced out of business by this law
 - Santa is less able to select only the qualified reindeer after this law is passed.
 - The government can accomplish this through instituting a wage floor
11. Which of the following will not lead Santa to demand more reindeer labor:
- The market wage of reindeer decreases substantially
 - He finds out that his new sleigh flies faster than originally expected
 - Santa's advertising clients decide to pay much less for each gift delivered
 - The price of reindeer sausage goes down
 - The price level at the North Pole rises by 5%
12. On the day before Christmas, when all the other reindeer are still employed as given in question #5, Santa Approaches Rudolph, asking him to guide his sleigh. what is the unemployment rate after Rudolph accepts?
13. The convergence hypothesis suggests that a plot of the growth rate of per-capita income against the initial level of per-capita income has a _____ slope
- positive
 - negative
 - vertical
 - horizontal
14. An impoverished grad student, Benji is considering the purchase of a new pipe organ to begin teaching students and supplement his income. The instrument will cost him \$11,000, and he will need to finance it with a one-year loan at interest rate R . He also needs to hire 5 men to transport and install the instrument, each of whom demands \$ 60 for his services. Benji must also spend \$100 during the year towards maintenance. Benji can only make time to teach 25 students during this year, at the end of which he will finish grad school, will not teach any longer and will be unable to sell his pipe organ. Each student pays Benji \$ 500 for a year's lessons. What is the maximum possible interest rate at which Benji will buy the new instrument?

15. The readings argue that which of the following U. S. policies increases poverty in poor nations
- tax cuts under President Bush
 - low interest rates under Alan Greenspan
 - subsidies to rich farmers
 - the Iraq war

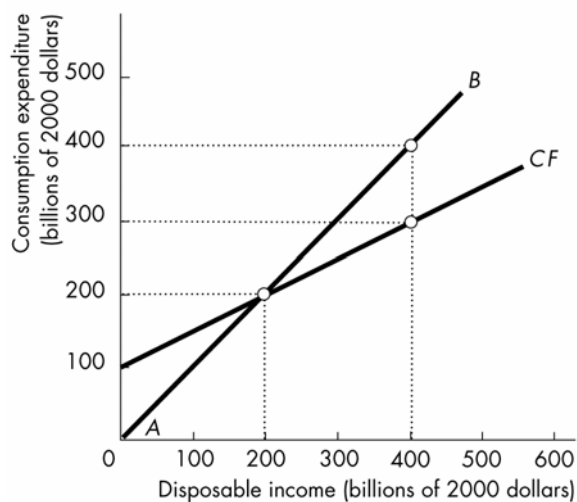
Questions 16-17 refer to the following graph



16. In the above figure, aggregate demand unexpectedly decreases so that the aggregate demand curve shifts from AD_0 to AD_1 . If the Fed is following a feedback rule, it will try to shift _____.
- the AD curve to AD_2 .
 - the AD curve to AD_0 .
 - the LAS curve rightward.
 - the SAS curve rightward.
17. The Fed will carry out the shift in question 22 by _____.
- purchasing bonds on the open market
 - selling bonds on the open market
 - lowering taxes
 - increasing government purchases
18. If the Fed faces changes in cost-push pressure that shift the SAS curve, the Fed's monetary policy shifts the
- AD curve.
 - SAS curve.
 - LAS curve.
 - SAS and LAS curves.

19. In the Keynesian model of aggregate demand, real GDP is determined by the
- price level.
 - level of aggregate planned expenditure.
 - level of aggregate supply.
 - level of taxes.

Questions 20-21 refer to the following graph



20. In the above figure, at a disposable income level of \$200 billion, saving equals
- disposable income.
 - Zero.
 - \$40 billion.
 - consumption expenditures.
21. In the above figure, the line *AB* is called
- the saving function.
 - the consumption function.
 - the 45-degree line.
 - the expenditure function.
22. Tax cuts tend to _____ domestic investment and _____ net exports
- reduce, reduce
 - reduce, increase
 - increase, reduce
 - increase, increase
23. The U. S. stock market boom of the late 1990s caused private saving to _____ and the dollar to _____.
- rise, appreciate
 - fall, appreciate
 - rise, depreciate
 - fall, depreciate

Questions 24-26 refer to the following table

Year	Nominal GDP (billions of dollars)	Real GDP (billions of 2000 dollars)	GDP deflator
2004	5,200	4,800	
2005	5,500		112
2006	5,750	5,000	

24. The GDP deflators for 2004, 2006 (respectively) are:
- 105.2, 111.7
 - 108.3, 115
 - 109.6, 116.4
 - 111.5, 118.4
25. The above table gives the real and nominal GDP of a hypothetical nation. What was real GDP in 2005?
- \$4,820 billion
 - \$4,875 billion
 - \$4,911 billion
 - \$5,320 billion
26. The above table gives the real and nominal GDP of a hypothetical nation. What is the average annual real GDP growth between 2004 and 2006 (Use the approach outlined in class)?
27. Consider the economy of Solowland, which follows the 1/3 rule. If labor productivity in 2000 was \$ 2 /hour, and \$ 4/ hour in 2005 and the amount of capital per labor in 2000 was \$ 20/ hour, the capital per hour of labor in 2005 is \$ _____. (Assume no change in technology; use the natural logs approach from lecture)
28. In the same economy, if the amount of capital per hour of labor for 2005 is \$ 60, ____ % productivity growth is attributable to technology.
29. The economy of Solowland is half as large as that of Romerland. If the latter grows at 1% annually and the former at 2%, in how many years will they be on par with each other?
- 35 years
 - 70 years
 - never
 - None of the above

30. In a country called Printingpressia, the government finances all of its expenditures by the creation of money rather than by taxes. As a result, there is lots of inflation. A Big Mac in December, 2004 costs P2.50 and in December, 2006 costs P250.00. Using natural logs, calculate the *annual* rate of inflation of Big Macs between December, 2004 and December, 2006
- 1000 percent
 - 460 percent
 - 230 percent
 - 100 percent
31. In the United States, nominal GDP is _____ than real GDP after _____.
- smaller, 1996
 - larger, 1996
 - smaller, 2000
 - larger, 2000
32. The U. S. recession of 2001 was mild, despite the collapse of the stock market, because
- interest rates declined
 - housing wealth increased
 - business investment increased
 - a and b
 - a and c
33. To maintain full employment and a stable price level when there is a major increase in the price of oil
- aggregate demand must fall
 - aggregate demand must rise
 - the nominal wage rate must fall
 - the nominal wage rate must rise
34. The multiplier effect of an increase in autonomous consumption caused by a boom in the stock market is likely to be the largest in
- Evanston IL
 - Chicago IL
 - United States
 - North America
35. Economists claim that they can explain the results of Presidential elections with which of the following economic variables?
- Real GDP growth in the year before the election
 - The inflation rate in the year before the election
 - The unemployment rate in the year before the election
 - The interest rate in the year before the election

36. In the first half of 2004, _____ of the U. S. current account deficit was financed by the capital account and _____ was financed by the official settlements account.
- all, none
 - 1/3, 2/3
 - 2/3, 1/3
 - none, all
37. The productivity curve is a relationship between ____ and ____.
- real GDP; hours of labor
 - real GDP; capital
 - real GDP per hour of labor; capital
 - real GDP per hour of labor; capital per hour of labor
38. If capital per hour of labor decreases, output per hour of labor
- decreases because the level of technology decreases.
 - increases because the level of technology increases.
 - increases for a given level of technology.
 - decreases for a given level of technology.
39. Which of the following statements is true?
- An increase in the required reserve ratio reduces the quantity of money
 - The Fed can increase discount rates to increase the quantity of money
 - a) and b) are true
 - None of the above
40. Suppose that the money multiplier is 2. If the Fed buys \$2 million in securities, the quantity of money will
- increase by \$4 million
 - increase by \$1,000,000
 - decrease by \$4 million
 - decrease by \$1,000,000
41. The required reserve ratio in an economy is 10%. By how much do bank deposits increase after an increase of 300 in bank reserves? (Assume that this economy uses no currency.)
- 300
 - 3000
 - 100
 - 2700
 - none of the above

42. Which of the following is NOT included in the M1 definition of money?
- Currency held outside banks
 - Time deposits
 - Traveler's checks
 - Checking deposits at savings and loans

The following three questions refer to the table below

Component	\$ billion
Govt. purchases	60
Net taxes	50
Investment	25
Saving	40

43. The government's surplus is \$ _____ billion.
- 0
 - 10
 - 10
 - None of the above
44. The private sector's surplus is \$ _____ billion
- 15
 - 15
 - 10
 - not enough information
45. The net exports surplus is \$ _____ billion.
- 0
 - 5
 - 10
 - 15
46. In January 2004 the US dollar (USD) was worth 50 rupees and 120 yen. The rupee has since appreciated against the dollar, and the dollar has in turn appreciated against the yen. Which of the following may be true today?
- 1 USD = 60 rupees ; 1 USD = 130 yen
 - 1 USD = 40 rupees ; 1 USD = 130 yen
 - 1 USD = 40 rupees; 1 USD = 110 yen
 - 1 USD = 60 rupees; 1 USD = 110 yen
47. An increase in the expected future exchange rate shifts the demand for US dollars _____ and the supply curve _____.
- Rightward; rightward
 - Rightward; leftward
 - Leftward; leftward
 - Leftward; rightward

48. Private saving equals
- Domestic investment plus net exports plus the government surplus
 - Domestic investment plus foreign borrowing plus the government surplus
 - Domestic investment plus net exports plus the government deficit
 - Domestic investment plus foreign borrowing plus the government deficit
49. If Japan is worried that its exports are too weak to create enough jobs, it chooses which of the following policies to increase exports
- tax cuts
 - increase in the money supply
 - increase in government spending
 - foreign exchange intervention
50. Which of the following is true?
- Pablo's favorite song is "One" by U2.
 - For Prof. Gordon, the opportunity cost of being an economics professor was being an airline pilot.
 - Benji's favorite musical instrument is the pipe organ.
 - Siddarth learned to play the veena, a strange Indian musical instrument
 - a, b, c, and d are all true

Short Answer Questions (42 points possible)*****Answer on these papers!!!****Short Answer I (6 points possible)**

Component	Amount (billions of dollars)
Net taxes	1,635
Personal consumption expenditure	5,566
Depreciation	622
Government purchases	1,784
Exports	957
Imports	1,138
Household saving	1,202

1. (1 point) Using the data in the table above, what is the value of Investment?
2. (2 pts) Using the data in the table above, what is the value of real GDP?
3. (1 pt) Using the data in the above table, what is the value of net exports?
4. (2 pts) Using the data in the above table, what is the value of net domestic product?

Short Answer II (10 points possible)

Consider the following economy, where prices are fixed:

$$C=10+\frac{3}{4}*(\text{Disposable Income})$$

$$T=\frac{1}{3}*Y$$

$$I=10$$

$$G=30$$

$$X=10$$

$$M=\frac{1}{6}*Y$$

1. (1 point) Autonomous expenditure is equal to _____.
2. (1 point) The multiplier on autonomous expenditure is _____.
3. (3 points) Equilibrium GDP is equal to _____.
4. (1 point) National Savings is equal to _____.
5. (1 point) The budget balance is equal to _____.
6. (1 point) Suppose Exports increase by 100; then, equilibrium GDP increases by _____.
7. (2 points) Suppose that Exports are 100 again, as in the initial setup. Suppose GDP (Y) were 1200. Then, actual Investment (accounting for change in inventories) would be: _____.

Short Answer III (6 points possible)

Late 2004:

Suppose that the most recent Presidential election went just a little differently, and Ralph Nader was elected President. Also, assume for simplicity that $X - M$ is fixed, and the United States is an economy in equilibrium that currently has a $MPC = 0.9$, and a real GDP of \$11.4 trillion.

Ralph Nader's first act as President is to raise taxes by \$300 billion in order to immediately cover the entire budget deficit.

1. (2 points) On a graph of aggregate expenditure versus real GDP, show the effect that the tax increase will have on the level of aggregate planned expenditure in the economy if the price levels remain constant. Label the original planned expenditure A and the new planned expenditure after the tax increase B.

2. (2 point) What is the new equilibrium real GDP in the United States?

3. (2 points) On a graph of the price level versus real GDP, show the effect that the decrease in government purchases will have on the short run equilibrium real GDP and price level using aggregate supply and aggregate demand curves. Label the original equilibrium C and the new equilibrium D, and indicate the quantities of real GDP at each.

Short Answer V (5 points)

Consider the following partial balance sheet:

US Bank Balance Sheet		
<i>Assets(million\$)</i>		<i>Liabilities (million \$)</i>
Reserves		
Required	15	
Excess	A	
Total	40	
Loans	B	
Total assets	300	

1. If the only liabilities are in the form of deposits, what is the required reserve ratio?
2. Compute excess reserves (item A on the sheet).
3. Compute net loans (item B on the sheet)

Suppose there has been a withdrawal of 25 million dollars.

4. This would leave the bank with excess reserves of \$ ____
5. And an actual reserve ratio of ____.

Short Answer VI (10 points possible)**(Any resemblance to economists—real or fictional—is unintended and purely coincidental.)****Suppose that we observe the economy of Mainland in two different years:**

Year	Real GDP Demanded	Price Level	Recessionary Gap
2001	400	100	50
2002	250	130	
2010			0

In addition, Pablo, the resident economist of Mainland, tells you that there were nationwide labor reforms in Mainland between 2001 and 2002 that sharply increased the money wage rate.

1. (1 pt) Other things having been held equal, what is the new recessionary gap?

2. (1 pt) Using the observations from 2001 and 2002, and assuming symmetry, find the equations of the aggregate demand curve in Mainland.

3. (1 pt) Next, assume symmetry to find the equation of the short run aggregate supply curve in 2002.

4. (2pt) Prof. Gordon--visiting for a conference in 2010--mentions to the Prime Minister that he has measured long term economic growth of 1.17% in Mainland. What is long run aggregate supply in 2010?

5. (2 pts) In a special government session, Prof. Gordon lists possible causes of this long-term economic growth. Which of the following would not cause the long term growth?
- A. Improved technology in Mainland
 - B. Installation of new capital in Mainland
 - C. Population increases in Mainland
 - D. Reversal of the labor reforms that Pablo noted above
6. (1 pt) Benji notes that the long run equilibrium price level in 2010 is 100, where he only expected it to be 80. He concludes that aggregate demand must have shifted out. Give 1 reason—*other than government spending*—that aggregate demand would shift to the right.
7. (2 pts) Siddarth, Benji's co-author, claims that the difference is due entirely to an increase in government expenditures of _____. (hint: don't think about the multiplier; instead, just find how much the AD curve must shift at each price level)

201 answers

1. D
2. A
3. D
4. A
5. A
6. C
7. D
8. C
9. B
10. D
11. C
12. ***before it was 2/9; adding Rudolph to the employed column will make it 2/10
13. B
14. 10 %
15. C
16. B
17. A
18. A
19. B
20. B
21. C
22. A
23. B
24. B
25. C
26. ***answer will be $0.5 * \log(5000/4800) = 2.04\%$
27. either 80 or 160 depending on the method you use
28. (32.67%) or 32.69%, depending on the method
29. B
30. C
31. D
32. D
33. C
34. D
35. A
36. B
37. D
38. D???
39. A???
40. A
41. B
42. B
43. C
44. A
45. B???

- 46. B
- 47. B
- 48. C
- 49. D
- 50. any answer accepted

note: I multiplied some numbers by 10 for this short answer

Short Answer I (6 points)

1. ***answer is using the magic equation \$1234 billion
2. ***answer is \$8,403 billion
3. ***answer is -\$181 billion
4. ***answer is \$7,781 billion

Short Answer II (10 points)

Short Answer III (6 points)

***answer to third short answer question

The problem gives the marginal propensity to consume, which will be the slope of the AE curve. To get full credit, the graph must have the vertical axis labeled

as aggregate planned expenditure (also accept aggregate expenditure), the

horizontal axis labeled as real GDP, the 45 degree line, two AE curves (with the same slope), with the intersection of the higher AE curve and the 45 degree line labeled A and the intersection of the lower AE curve and the 45 degree line labeled B. Here are the deductions that should be

taken:

-1 no labels on axes but otherwise correct

-1 if points A and B are switched

-2 if they don't have two AE curves with the same slope (i.e. if one curve is a rotation rather than a shift of the other or if they only have

one curve)

-2 if they don't show the intersection of the AE curves and the 45 degree line

-2 if the AE curves are downward sloping

B. Enough information is given that students can completely figure out the effects of the tax increase: the multiplier is $-0.9/(1 - 0.9) = -9$. Therefore, a tax increase of \$300 billion will reduce equilibrium real GDP by \$2.7 trillion; the new equilibrium is at \$8.7 trillion.

C. For full credit: y-axis labelled as price level, x-axis labelled as

real GDP, an upward sloping SAS curve, to downward sloping AD curves

with

the same slope, the two intersections with the SAS curve labelled (the equilibrium with the higher GDP labelled C and the other labelled D).

Deductions:

- 1 no labels on axes but otherwise correct
- 2 if supply curve shifts instead of demand
- 2 if curves are labelled incorrectly (SAS is labelled as AD and AD is labelled as SAS)
- 1 if equilibria are switched, or no numbers are given
- 2 if no equilibria are labelled

Also, it doesn't matter if they have a long run AS curve drawn, as this wasn't asked for.

D. C (since the LAS curve is fixed at a quantity of real GDP, they will be equal)

Short Answer IV (5 points)

1. $(1/r+c) \cdot (\Delta C) = -8$ billion
2. $r \cdot \Delta D = 400$ mill.
3. $M = (1+c/r) = 4.8$
4. $M \cdot (\Delta B) = -9.6$ bill

Short Answer V (5 points)

1. 5%
2. (25, 260)
3. (1.25 million, 6.875%)

Short Answer VI (10 points)

- A. ***answer is 200; students should see it immediately.
- B. ***answer should be $PL - 180 = -0.2 \cdot (Y - 0)$ or an equivalent for AD, and $PL - 130 = 0.2 \cdot (Y - 250)$ for SAS
- C. ***answer should be 500
- D.

	Could cause	would not cause
Improved technology in Mainland	XXX	
Installation of new capital in Mainland	XXX	
Population increases in Mainland	XXX	
Reversal of the labor reforms that Pablo noted above		XXX

***X's indicate the answers; must be removed before the exam is printed

- E. ***Three reasons: foreign income increases, government spending increases, monetary policy increases the quantity of money or reduces interest rates,
- F. ***Answer is the amount the AD curve must shift out to contain the point (500, 100); since before it contained the point (400, 100), the answer must be 100