

**ECON 102/100**

April 22, 2003

Section	Day	Time	Location	GSI
101	F	10-11:30	1060 EH	Irina Grafova
102	TH	11:30-1	B239 EH	Ivan Kandilov
104	TH	1-2:30	351 DENN	Jon Millar
105	TH	2:30-4	173 LORCH	Jan Sokolowsky
106	TH	4-5:30	142 LORCH	Jan Sokolowsky
107	F	2:30-4	142 LORCH	Jon Millar
109	F	11:30-1	B239 EH	Irina Grafova

- Do NOT open this exam booklet until instructed to do so!
- Please take a moment to complete the identification information on the scantron. Indicate your NAME, discussion SECTION number, FORM number, and UM ID number. **THIS IS WORTH TWO POINTS ON THE EXAM!**
- The exam has 100 points and is designed to take about 90 minutes to complete. However, you'll have approximately 120 minutes. Check that you have all 13 pages of the exam.
- Read the questions and these instructions carefully!
- Use the space provided in this booklet and the back of the pages to work out the answers to the multiple choice problems. Use the space provided on the actual page for the short answer questions.
- You can use only NON-graphing calculators.
- For multiple choice questions, you get 2 points for a correct answer, 0 points for a blank, and 0 points for a wrong answer. There are NO penalties for guessing.
- Sign the honor code below!

Honor Code:      I did not use any unauthorized aid on this exam.

Name: (PRINT) \_\_\_\_\_

UM ID #: \_\_\_\_\_

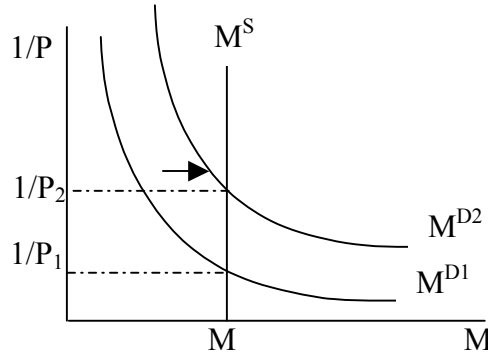
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Section #: \_\_\_\_\_

**Multiple Choice:** (39 questions, 2 pts each = 78 pts)

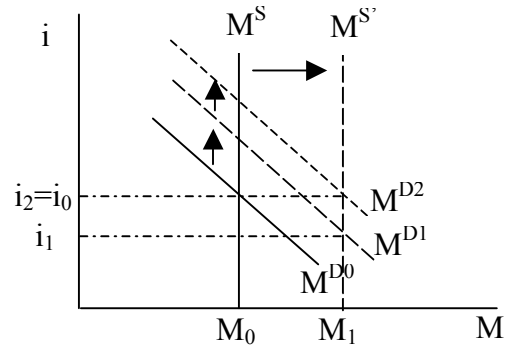
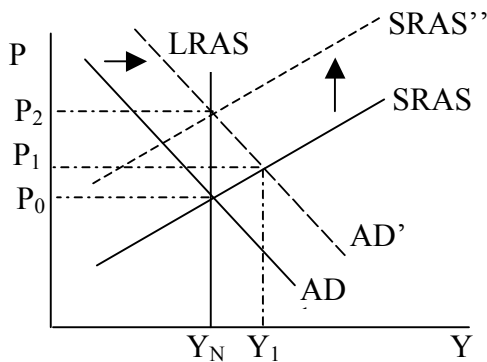
Pick the best answer among the given choices.

1. All of the following are valid causes of the events depicted in the diagram and model below, EXCEPT



- a) an increase in the price level,  $P$ .
  - b) a decrease in the velocity of money ( $V$ ).
  - c) an increase in the natural rate of output ( $Y_N$ ).
  - d) an increase in the desire of individuals to hold money rather than bonds.
  - e) None of the above. That is, they're all valid explanations.
2. Consider the AD/AS model, starting at a long run equilibrium. Suppose that there is an increase in business confidence, so that desired amount of domestic investment ( $I$ ) increases at each value of the real interest rate. When a new *short run* equilibrium is reached, the change in  $I$  will be \_\_\_\_\_, and the change in  $NX$  will be \_\_\_\_\_.
- a) negative; negative
  - b) positive; negative
  - c) negative; positive
  - d) positive; positive
  - e) None of the above alternatives is correct.
3. Which of the following newspaper headlines would probably be associated with rightward (i.e., upward) shifts in the Short Run Phillips Curve over time?
- a) "New FED governor Deardorff announces bold policy goal of zero unemployment."
  - b) "Supreme court declares minimum wage laws unconstitutional."
  - c) "Scientists discover cheap synthetic substitute for petroleum!"
  - d) "Economists warn: no end to recession in sight."
  - e) "Productivity surge lowers production costs."

4. Consider the series of events depicted in the AD/AS model below. Which of the following is a plausible cause of these events?



- An increase in the price of oil.
  - The Fed sells bonds.
  - An increase in G.
  - A decrease in the public's desire to hold cash rather than bank deposits.
  - A decrease in the economy's stock of human capital.
5. Which of the following statements is FALSE?
- The unemployment-inflation tradeoff is not a stable relationship.
  - Given the natural rate of unemployment, each short-run Phillips Curve reflects a particular rate of expected inflation.
  - Since policymakers can change the position of the AD curve, they can influence the economy's amount of unemployment in the short run.
  - The oil price shocks of the 1970's caused the US short-run Phillips curve to shift to the left.
  - Paul Volcker's term as the governor of the Federal Reserve coincided with a period of declining inflation and high rates of unemployment.
6. Military conflict abroad causes US investors who hold foreign assets to become more and more worried about the security of their investments. As a response, they reduce their holdings of foreign assets. Recall that this corresponds to a shift of the NFI curve.
- As a result, domestic investment increases, causing the US real interest rate to rise.
  - As a result, domestic investment decreases, because in macroeconomics we consider holding foreign assets as a form of saving. As national saving decreases, so does investment.
  - Domestic investment is unaffected.
  - The contraction of NFI causes the US real interest rate to fall, leading to an increase in domestic investment.
  - For trade to be balanced, NX needs to increase to make up for the decrease in NFI.

7. If Congress wants to stimulate the economy in the Short Run, it can accomplish its goal by employing which of the following three options?
- i) Increase national saving and therefore lower the real interest rate in the market for loanable funds. The lower interest rate in turn stimulates domestic investment.
  - ii) Increase taxes so that people will work harder in order to pay them.
  - iii) Threaten to confiscate the assets of foreign investors in the U.S.
- a) ii) only  
b) iii) only  
c) ii) and iii)  
d) i), ii), and iii)  
e) Congress needs to come up with something else, because none of the above options would accomplish this goal.
8. Suppose that out of patriotism, American workers and unions accept a cut in their nominal wages. Using the AD/AS diagram, determine the main impact on the economy in the short run.
- a) The AD curve shifts to the right, because real wages rise.
  - b) Unemployment increases, because fewer people want to work at these lower real wages.
  - c) Aggregate demand decreases, because firms have lower profits.
  - d) Desired investment decreases, because firms anticipate higher wage demands in the far future.
  - e) This shock stimulates the economy as it lowers firms' marginal costs of production.
9. In the open economy model, a higher real interest rate raises the quantity of
- a) loanable funds supplied.
  - b) loanable funds demanded.
  - c) domestic investment.
  - d) NFI.
  - e) NX.
10. In the open economy model, a higher US government budget deficit will
- a) lower the interest rate.
  - b) decrease domestic investment.
  - c) cause the dollar to depreciate.
  - d) increase NX.
  - e) All of above.

11. Suppose banks have a 20 percent reserve ratio and hold no excess reserves, while the public holds no cash. The banks' loans equal \$400,000, while their deposits equal \$500,000. Suppose that Fed now decreases the reserve ratio to 5 percent. Then the money supply will \_\_\_\_\_
- a) decrease by \$1,500,000.
  - b) increase by \$1,500,000.
  - c) increase by \$75,000.
  - d) decrease by \$75,000.
  - e) increase by \$1,425,000.
12. Which of the following would a macroeconomist consider an investment (the component I in GDP)?
- a) The purchase of a bond issued by Kellogg.
  - b) The purchase of a stock issued by IBM.
  - c) The purchase of a new sewing machine for one's tailoring business.
  - d) The purchase of a mutual fund share.
  - e) All of the above.
13. Becky, the CEO of a corporation operating in Ethiopia, reads Mankiw's textbook and decides to raise the wages of her workers even though she faces an excess supply of labor. Her decision
- a) might increase profits if it means that the wage is high enough for her workers to eat a nutritious diet that makes them more productive.
  - b) will help eliminate the excess supply of labor if she raises it sufficiently.
  - c) though humanitarian, will certainly cause her profits to fall.
  - d) None of the above.
  - e) Both b) and c).
14. A company produces 500 units of an intermediate good on the last day of the year. In order for those 500 units to be included in GDP for that year,
- a) The firm must sell the goods that day.
  - b) The firm must not sell the goods that day.
  - c) It does not matter whether it sells the goods that day.
  - d) The firm must increase the level of its inventories.
  - e) Some firm must use these 500 units to produce a final good that day.
15. At its meetings in late January and late March that were reported in assigned articles from the Wall Street Journal, the Fed signaled that the greatest dangers for the US economy were \_\_\_\_\_ in January and \_\_\_\_\_ in March.
- a) inflation; recession
  - b) inflation and recession equally; inflation
  - c) inflation and recession equally; impossible to say due to uncertainty
  - d) recession; recession
  - e) inflation; impossible to say due to uncertainty

16. The Alternative Minimum Tax
- a) is the special tax on those who earn only the minimum wage.
  - b) is designed to exempt those with very high incomes from paying income taxes.
  - c) is a tax on wealth, in addition to income.
  - d) is intended to limit the use of tax shelters.
  - e) has ceased to collect any tax revenues, because it was not fully indexed to inflation.
17. Which of the following is defined as US Foreign Investment?
- a) An American company builds a factory in Detroit to produce goods for export.
  - b) An Italian company builds a store in downtown Ann Arbor to sell Italian shirts to American college students.
  - c) Microsoft (an American company) sells shares of stock to a widow in Finland.
  - d) The Bank of Japan sells U.S. government bonds, which it previously held, to a wealthy businessperson in Hong Kong.
  - e) A rich American buys a controlling share in a Swiss bank.
18. From 1961 to 1969, the US rate of unemployment fell steadily, and the rate of inflation increased, convincing many that a tradeoff existed between unemployment and inflation. What happened then, when unemployment increased in the early 1970s?
- a) The high rate of inflation was viewed as unsustainable, and the rate of inflation therefore dropped close to what it had been in 1961.
  - b) Higher prices were needed to keep workers unemployed, and the rate of inflation increased as a result.
  - c) Wages fell, as workers competed for jobs, and the rate of inflation declined.
  - d) People learned to expect the inflation that they had recently experienced, and the rise in unemployment was therefore accompanied by continued high inflation.
  - e) The increased pool of available labor permitted output and employment to expand faster than before without increasing the rate of inflation.
19. Along the aggregate supply curves, a rise in the price level
- a) causes short-run aggregate supply to remain unchanged because producers respond to demand, not prices.
  - b) causes short-run aggregate supply to increase because consumers feel wealthier.
  - c) causes long-run aggregate supply to remain unchanged because costs of production rise the same amount as prices.
  - d) causes long-run aggregate supply to increase because firms believe that their own prices have risen relative to others.
  - e) causes short- and long-run aggregate supply to change equally by an amount that depends on the rate of unemployment.

20. Money velocity in New Caledonia is constant. The money supply grows at 10% annually, the population grows at 2% every year, and the inflation rate is always 3%. The growth rate of nominal GDP per capita is \_\_\_\_\_ %, and the growth rate of real GDP per capita is \_\_\_\_\_ %.

- a) 5; 5
- b) 8; 5
- c) 8; 7
- d) 10; 7
- e) 10; 5

21. According to the Fischer equation as well as the information in the table below, the real rate of interest from 2002 to 2003 was.

	2002	2003
Real GDP	5000	5125
Nominal interest rate	10%	10%
M1	100,000	102,500
Velocity of Money	5	6

- a) -20%.
- b) -10%.
- c) 0%.
- d) 10%.
- e) 20%.

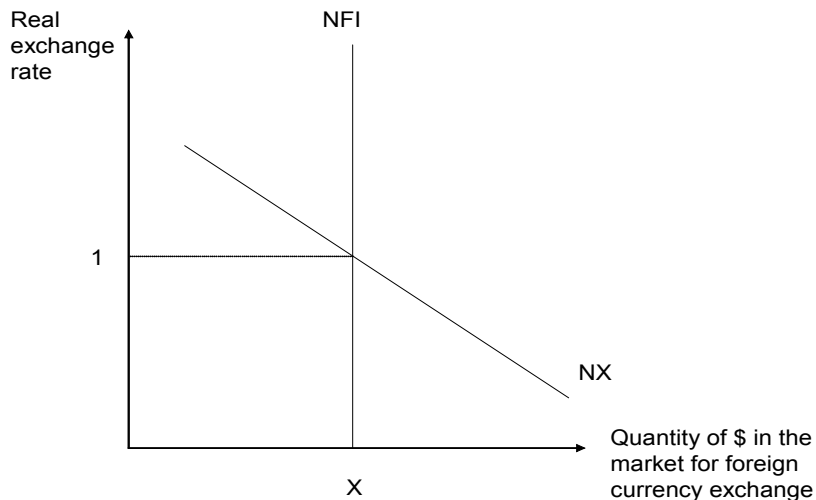
22. Consider the AD/AS model, starting at a long-run equilibrium. Suppose that there is an increase in the money supply. When the economy reaches a new *long-run* equilibrium, the change in I will be \_\_\_\_\_, and the change in NX will be \_\_\_\_\_.

- a) negative; negative.
- b) positive; negative.
- c) negative; positive.
- d) positive; positive.
- e) None of the above alternatives is correct.

23. Economists have suggested all of the following as possible causes of the Great Depression EXCEPT

- a) A dramatic decline in the money supply due to instability in the banking system.
- b) A 90 percent decline in the stock market decreased household wealth, and thereby consumer spending.
- c) The weak banking system prevented firms from obtaining the financing they wanted for investment projects.
- d) A sharp increase in the natural rate of unemployment owing to minimum wage laws.
- e) None of the above; that is, all of the above *have* been suggested as possible causes of the Great Depression.

24. Suppose that the Fed wishes to reduce the economy's rate of inflation to zero. Which of the following would tend to make this goal more costly to achieve?
- The Short Run Phillips Curve is very close to vertical.
  - Consumers fully account for the effect of the Fed's policies when making inflationary forecasts.
  - The natural rate of unemployment is expected to decline over the next few years.
  - The sacrifice ratio is close to zero.
  - None of the above.
25. In lecture, Professor Deardorff offered all of the following as reasons why Alan Greenspan's job as the Federal Reserve Governor is complicated, EXCEPT
- in practice, the exact size of the money supply is not easy to control since banks sometimes hold excess reserves, and the public varies its holdings of cash.
  - uncertainty about technological changes in the economy can make it difficult to discern appropriate policy.
  - relevant economic data is seldom easy to obtain in a timely manner.
  - oil shocks are difficult to forecast, and have important effects.
  - members of the US Congress constantly interfere with monetary policy because they don't agree with the Fed's policy decisions.
26. According to the graph below,



- PPP holds, because the real exchange rate is always equal to 1.
- PPP holds, because NFI is perfectly inelastic with respect to the real interest rate.
- I cannot determine whether PPP holds, because the information given is insufficient (I don't know the value of X).
- PPP does not hold, because NX would be vertical if PPP held.
- PPP does not hold, because NX would be horizontal if PPP held.



27. Suppose that you find the coolest summer job around: substituting for Alan Greenspan at the Fed! Judging from your friends' recent job market experiences, you are a bit worried about finding a job once you graduate from the University of Michigan. How can you use your summer job most effectively to improve your chances of finding a job in the next couple of years?
- a) Vote to increase government spending.
  - b) Convince foreigners to increase their foreign direct investment in the U.S.
  - c) Print lots of money and keep it in the vault at the Fed.
  - d) Talk to your relatives and friends to convince them to hold more cash.
  - e) Buy bonds through open market operations.
28. In the open economy model, the equilibrium value of NX equals to the equilibrium value of
- a) national saving.
  - b) public saving.
  - c) domestic investment.
  - d) the excess of national saving over domestic investment.
  - e) None of above.
29. According to the open economy model, which of the following will decrease US NFI?
- a) The US government decreases the budget deficit.
  - b) Capital flight from the US.
  - c) The US imposes quotas on steel imports .
  - d) Americans decide to spend a smaller fraction of their income.
  - e) None of the above.
30. The Fed can increase the price level by \_\_\_\_\_ bonds, \_\_\_\_\_ the discount rate and \_\_\_\_\_ the reserve requirement.
- a) selling; raising; raising
  - b) selling; lowering; lowering
  - c) buying; lowering; lowering
  - d) buying; raising; raising
  - e) buying; raising; lowering
31. Which of the following is correct?
- a) In a fractional reserve banking system, banks can create money.
  - b) The Fed can change the money supply.
  - c) US dollars have no intrinsic value.
  - d) US dollars are fiat money.
  - e) All of the above.

32. Which of the following will increase the equilibrium amount of loanable funds in the closed economy?
- a) An investment tax credit.
  - b) An increase in government purchases.
  - c) A decrease in income taxes.
  - d) Both a) and c).
  - e) All of a), b) and c).
33. If an unemployed person stops looking for work before they find a job, then all else the same,
- a) the unemployment rate decreases.
  - b) the unemployment rate increases.
  - c) the size of the labor force falls.
  - d) the person becomes structurally unemployed.
  - e) Both a) and c).
34. An American company owns a fast-food store in Lima, Peru. It buys its inputs from local farmers in Peru. The value of the goods and services produced in the store
- a) are included in the levels of both the Peruvian and the US GDP.
  - b) are included partly in the level of the Peruvian and partly in the level of the US GDP.
  - c) are included in the level of the US GDP, but not in the level of the Peruvian GDP.
  - d) are included in the level of the Peruvian GDP, but not in the level of the US GDP.
  - e) None of the above.
35. In a recent report, the IMF criticized the Bush administration's proposed tax cut on the grounds that it would
- a) push the US economy back into recession.
  - b) be procyclical, because the stimulus it would provide would come too late.
  - c) be countercyclical, discouraging the investment needed to provide cyclical adjustment.
  - d) reduce economic efficiency by taxing dividends.
  - e) encourage consumers to delay spending and thus reduce aggregate demand.
36. "Disinflation" is caused by
- a) expanding the money supply less rapidly than money demand.
  - b) falling prices.
  - c) a rate of unemployment that is higher than the natural rate of unemployment.
  - d) a real rate of interest that is higher than the nominal rate of interest.
  - e) taxation of dividends.

37. Which of the following is greater in the long run than in the short run?
- a) The effect of an increase in government purchases on GDP.
  - b) The effect of a tax cut on unemployment.
  - c) The effect of an open market purchase of bonds on the price level.
  - d) The effect of an increase in the preferences to holding money on investment.
  - e) The effect of an increased preference for imports on the trade deficit.
38. Which of the following is one of the reasons why, along the aggregate demand curve, a rise in the price level causes a fall in aggregate demand? A rise in the price level
- a) increases the demand for money, raises the interest rate, attracts investment from abroad, appreciates the currency, and thus reduces net exports.
  - b) increases the real value of monetary wealth causing increased spending on monetary assets and reduce aggregate demand for goods.
  - c) reduces the demand for money, reduces the interest rate, and discourages investment.
  - d) causes consumers to substitute towards cheaper domestically produced goods.
  - e) raises the expectation of inflation, leading consumers to consume more now rather than in the future.
39. Which of the following is a feature of the US tax system that discourages saving?
- a) The income tax on the interest income from saving greatly reduces the benefit from saving.
  - b) If saving is used to buy corporate stock, seeking profits, the income is taxed twice, first through the corporate income tax and second through the personal income tax on dividends.
  - c) The inheritance tax discourages those who would save the most in order to pass on wealth to their children.
  - d) All of the above.
  - e) None of the above; that is, statements (a), (b), and (c) are all false.

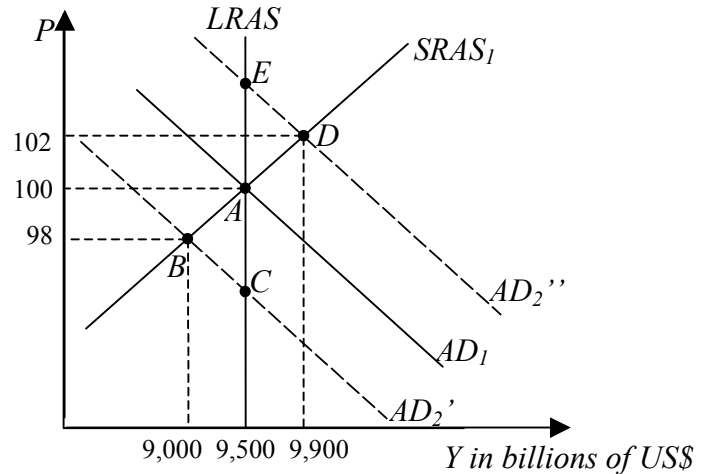
**Short Answer: (20pts Total)**

Write a solution to each of the following problems.

- I. Suppose that the US economy is initially, in the year 2002, in long-run equilibrium with zero inflation and the natural rate of unemployment, as shown at point A in the figure. Assume that the labor force in the US totals 100 million people. Assume further the following aggregate production function:

$$Y = 100,000L$$

where  $Y$  is real GDP in US\$, and  $L$  is the number of employed workers.



- (2 pts.) Find the natural rate of unemployment at point A.
- (3 pts.) Suppose now that in the year 2003 the Congress enacts an investment tax credit that shifts aggregate demand to one of the new locations shown ( $AD_2'$  or  $AD_2''$ ). Where is the new short-run equilibrium? Calculate, for the new short-run equilibrium, the unemployment rate and the inflation rate from 2002 to 2003.
- (1pt.) What was the expected inflation rate in the initial long-run equilibrium at point A above?
- (2 pts.) The Fed's chairman, Alan Greenspan, is unhappy about the new equilibrium that would be reached after the Congress has enacted the investment tax credit if he does nothing. In exactly one sentence describe what he should do instead to return the economy back its initial equilibrium point A.
- (2 pts.) If Greenspan does *not* do what you described in part (d), where will be the new long-run equilibrium in the presence of the investment tax credit? What will be the rate of unemployment in this new long-run equilibrium?

- II. Suppose that the Fed has been increasing the money supply in the US economy at a constant rate of 5% per year for as long as anybody in the economy can remember. Everybody in the economy believes that the Fed will continue this policy forever. Suppose also that the economy has experienced no growth in real GDP, that both technology and the economy's endowments of factors of production remain constant, and that the velocity of money is also constant.
- a) (1 pts.) The rate of price inflation in this economy is \_\_\_\_\_.
  - b) (1 pts.) The rate of wage inflation in this economy is \_\_\_\_\_.
  - c) (1 pts.) In exactly **one** sentence, explain what is happening to the unemployment level.
  - d) (2 pts.) Suppose now that the Fed unexpectedly decides at the beginning of the year 2003 that it wants to try to *decrease* unemployment. In exactly **one** sentence, explain what must happen to the rate of growth of the money supply in order for the Fed to be able to achieve this goal in the short run?
  - e) (5 pts.) Illustrate the short run effect of the policy that the Fed undertakes in part d) in *both* an AD/AS diagram and a Phillips curve diagram.