

ECON 102/100

February 17, 2004

| Section | Day | Time | Location | GSI |
|---------|-----|---------|-----------|--------|
| 101 | F | 2:30-4 | B239 EH | Jan |
| 102 | W | 11:30-1 | 373 Lorch | Justin |
| 103 | W | 1-2:30 | B239 EH | Naomi |
| 104 | W | 4-5:30 | B239 EH | Mato |
| 105 | W | 2:30-4 | B239 EH | Mato |
| 106 | W | 4-5:30 | 1068 EH | Naomi |
| 107 | F | 1-2:30 | 1372 EH | Nalin |
| 108 | W | 8:30-10 | 330 DENN | Justin |
| 109 | F | 11:30-1 | 205 DENN | Nalin |

- 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 60 minutes to complete. However, you'll have approximately 80 minutes. Check that you have all 10 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 3 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 #: _____

Signature: _____

Multiple Choice: (26 questions, 3 pts each = 78 pts)

Pick the best answer among the given choices.

| YEAR | 2000 | | 2001 | | 2002 | | 2003 | |
|--------------------------|----------|-------|----------|--------|----------|--------|----------|--------|
| | Quantity | Price | Quantity | Price | Quantity | Price | Quantity | Price |
| Coffee | 180 | \$2 | 200 | \$3 | 250 | \$3.25 | 300 | \$3.25 |
| Jelly Belly® Jelly Beans | 95 | \$5 | 100 | \$5.50 | 150 | \$5.75 | 180 | \$6 |
| Economics Textbooks | 8 | \$30 | 8 | \$30 | 10 | \$32 | 10 | \$40 |
| Wireless Internet Setup | - | - | - | - | 1 | \$150 | 1 | \$120 |

The next 4 questions refer to the table above. The consumption basket for the CPI exactly mirrors the quantities produced in the year 2001. Take 2001 to be the base year. For Wireless Internet Setup, take its 2002 price as the base year price. All four goods are consumption goods and all four goods have been produced in the U.S.

1. What was the cost of the consumption basket in 2001?
 - a) \$1075
 - b) \$1140
 - c) \$1302.50
 - d) \$1390**
 - e) I do not have the necessary information to answer this question.

2. What is the CPI in 2002?
 - a) 106.5**
 - b) 145.7
 - c) 143.5
 - d) 117.3
 - e) None of the above

3. What is the GDP deflator in 2000?
 - a) 77.3
 - b) 82.5**
 - c) 100
 - d) 121.2
 - e) None of the above

4. By how much did the cost of living increase between 2002 and 2003?
- a) 5.7 %
 - b) 6.0 %**
 - c) 6.3 %
 - d) The cost of living decreased due to the drop in price of Wireless Internet Setup.
 - e) None of the above
5. In 2004, a Ford plant in southeast Michigan buys \$5,000 worth of Canadian parts made in 2004, \$6,000 worth of American parts made in 2003, and \$14,000 worth of American parts made in 2004, and assembles a Lincoln Town Car which it sells to an airport taxi service for \$42,000. What is the increase in US GDP in 2004?
- a) \$31,000.**
 - b) \$37,000.
 - c) \$42,000.
 - d) \$56,000.
 - e) \$62,000.
6. The president of Macronesia has announced that the government will be implementing the following policies:
- I. Subsidizing college tuition.
 - II. Lowering the tax rates on profits of foreign firms who decide to build plants in Macronesia.
 - III. Give monetary rewards to each person who makes an invention.
- Which of the above policies will lead to a long run (i.e. permanent) increase in the growth rate of GDP per capita? (Assume that Macronesia has a production function with constant returns to scale and that diminishing returns are present in capital, labor, human capital and natural resources.)
- a) only I
 - b) only II
 - c) only III**
 - d) I and II
 - e) II and III.

7. Consider an economy made up of 200 people, 90 of whom hold jobs, 10 of whom are looking for work, 10 of whom are discouraged workers, and 15 of whom are retired. The unemployment rate is approximately
- a) 5 percent
 - b) 9 percent
 - c) 10 percent**
 - d) 18 percent
 - e) 55 percent
8. Suppose that current real GDP per capita in the country of Orcam is \$8,000, whereas it is \$32,000 in the country of McBusiness. The long term growth rates of real GDP per capita of Orcam and McBusiness are 4% and 2.5%, respectively. Then Orcam's real GDP per capita will catch up with McBusiness' in approximately
- a) 35 years
 - b) 46 years
 - c) 70 years
 - d) 93 years**
 - e) never
9. A firm may pay efficiency wages because:
- a) the marginal revenue product equals the wage rate.
 - b) it has monopsony power.
 - c) lower wages mean lower labor costs.
 - d) it wishes to discourage shirking.**
 - e) there is a minimum wage in the market.
10. Which of the following is **false**?
- a) the sale of stock is called equity finance; the sale of bonds is called debt finance.
 - b) long term bonds usually pay higher rates of interest than short-term bonds.
 - c) holding bonds is riskier than owning stocks.**
 - d) if stock prices follow a random walk, then changes in stock prices are impossible to predict from available information.
 - e) if the efficient markets hypothesis is correct, then the best you can do is buy a diversified portfolio.

11. As part of his tax cut proposal in 2001, President Bush asked for an increase in the child credit to \$1,000. If this change were enacted, it would return a sizeable amount of tax money to the nation's parents. According to the market for loanable funds theory, what would this do to the country's interest rate and investment, respectively?
- a) no change; no change
 - b) rises; falls**
 - c) falls; rises
 - d) falls; falls
 - e) rises; rises
12. According to the market for loanable funds model, when government purchases and taxes increase by equal amounts, the equilibrium levels of ...
- a) both national saving and investment stay the same.
 - b) national saving and investment both increase by the same amount as the tax increase.
 - c) national saving and investment both decrease by the same amount as the tax increase.
 - d) national saving and investment both decrease by less than the amount of the tax increase.**
 - e) national saving and investment both decrease by more than the amount of the tax increase.
13. Suppose that 1/4 of all unemployed find a job within a year, and that 1/12 of the employed either lose or quit their jobs in that same time period. If the current unemployment rate for the year is 45%, then the cyclical unemployment rate is ...
- a) +20%**
 - b) -20%
 - c) -30%
 - d) +25%
 - e) none of the above.
14. If the annual interest rate is 10 percent, the present value of a payment of \$400 to be received two years from now is
- a) \$400 multiplied by $(1 + .10)^2$
 - b) \$400 divided by $(1 + .10)^2$**
 - c) \$400 divided by $(1 + .20)$
 - d) \$400 divided by 2
 - e) \$400 multiplied by 2

15. For the insurance market, the concept of moral hazard refers to
- a) **the incentive for insurance holders to engage in more risky activities than they would if they were not insured.**
 - b) the high rejection rates faced by insurance applicants.
 - c) the tendency, for example, for those who are least likely to have an accident to choose not to buy insurance.
 - d) the negative effects on the quality of the pool of insurance applicants when insurance companies try to charge a single premium to cover expected overall costs.
 - e) the possibility that a corrupt insurance company will refuse to pay a legitimate claim.
16. Suppose Nicaragua suffers a massive earthquake that destroys 10% of its stock of physical capital. Its productivity will initially fall by _____, and over the next few years its productivity growth rate should be _____ it was before the earthquake.
- a) 10%; higher than
 - b) 10%; lower than
 - c) 10%; the same as
 - d) less than 10%; lower than
 - e) **less than 10%; higher than**
17. Suppose Moe owns only one stock: Springfield Power and Light, which has a relatively low level of risk. If he buys some shares of Duff beer, a relatively risky stock, what will happen to the overall level of risk in his stock portfolio?
- a) It will fall, because diversifying the portfolio always reduces risk.
 - b) It will rise, because Duff is riskier than SP&L.
 - c) It will fall as long as the total value of his SP&L shares equals or exceeds the total value of his Duff shares.
 - d) **It could rise or fall, depending on whether the stocks' prices tend to move together.**
 - e) None of the above.

18. Which of the following would we expect to reduce the level of **structural** unemployment?
- a) Improved Internet job-search sites reduce the search time for people looking for new jobs.
 - b) An improved economic climate draws a lot of discouraged workers back into the labor force.
 - c) An improved economic climate spurs a building boom that creates nearly a million new construction jobs.
 - d) People become more willing to move to where the jobs are, instead of staying close to home and waiting for conditions to improve.**
 - e) None of the above.
19. In Germany, workers get up to 4 weeks of paid vacation time. In addition, there are many more public holidays than in the U.S. However, Germany's GDP per capita is about 2/3 of that of the U.S. Which of the following statements is a valid conclusion from the information given?
- a) Germany's technology is inferior to U.S. technology.
 - b) Germany has fewer inputs, therefore its output is less.
 - c) Germans are better off than Americans, because they work a lot less.
 - d) Americans are better off than Germans, because their income is much higher.
 - e) It is not clear which nation is better off.**
20. If I have to pay a fixed interest rate of 5% on my student loans, then an increase in inflation will make me better off. This statement is...
- a) true, because I will repay my loan with less valuable dollars, but my repayment does not increase.**
 - b) true, because inflation increases my purchasing power.
 - c) uncertain, because it depends whether inflation is more or less than 5%.
 - d) false, because a 5% interest rate is a good deal, no matter what the inflation rate is.
 - e) false, because inflation decreases my purchasing power.

21. What is an “index of leading economic indicators”?
- a) One of several financial contracts available on organized exchanges permitting investors to bet on future changes in the stock market.
 - b) An index constructed from current economic data designed to predict future economic activity.**
 - c) An average forecast of GDP for the coming year produced by economists at major banks and academic institutions.
 - d) The NASDAQ.
 - e) The website maintained by the US Bureau of Economic Analysis listing all economic data produced by it and by other agencies of the US government.
22. What happened to labor costs and to real wages in the U.S. economy in the last quarter of 2003?
- a) Labor costs and real wages both rose because of a fall in unemployment.
 - b) Labor costs and real wages both fell because of an increase in inflation.
 - c) Labor costs rose and real wages fell, which is possible because workers were being called back from layoffs.
 - d) Labor costs fell and real wages rose, which is possible because productivity was increasing.**
 - e) Real wages remained unchanged because of the indexing of union wages to inflation, and as a result, labor costs also remained unchanged.
23. In his assigned article on the U.S. economic outlook, Saul Hymans argued that the number of jobs in the U.S. had expanded in November by substantially more than had been reported in the press. Why?
- a) Workers are more productive than they used to be, so each job today is equivalent to more than one job from earlier years.
 - b) Discouraged workers are not counted as employed even when they have jobs.
 - c) The government employees who measure employment were shirking and simply reported the same number of employed as the previous month.
 - d) An unusually large number of workers was on strike during that month.**
 - e) The US Labor Department reported the numbers correctly, but the press was biased against providing a favorable view of the economy.

24. Who of the following lowered taxes?
- a) President Roosevelt in the 1940s, to stimulate production so as to fight World War II.
 - b) President Eisenhower in the 1950s, to shrink the size of government.
 - c) President Johnson in the 1960s, to raise revenue needed to fight the Viet Nam war.
 - d) President Reagan in the 1980s, to improve the incentives to work, save, and invest.**
 - e) President Bush (Sr.) in the 1990s to stimulate the economy during a recession.
25. Suppose that the price of building materials drops sharply, and at the same time people get the idea that conspicuous consumption is uncool and that the responsible thing to do is to save for the future. We should expect the interest rate to _____ and the overall level of investment to _____.
- a) fall; rise
 - b) fall; rise or fall
 - c) rise; rise
 - d) rise; rise or fall
 - e) rise or fall; rise**
26. Which of the following is **not** part of the component of United States GDP that is called “investment”?
- a) The Ford Motor Company builds a new factory in Michigan.
 - b) An American professor buys 100 shares of stock in the American company, Google.**
 - c) A Dominos Pizza store in Ann Arbor restocks its storeroom with 1000 cardboard boxes for its pizzas.
 - d) A commercial farmer in southern Michigan builds a new silo to store his grain.
 - e) A German pharmaceutical company adds new machinery to its plant in Ohio.

Short Answer: (20pts)

Write a solution to each of the following problems.

1. Suppose your GSI earned \$1800 per month for teaching last year. Now a new union contract raises the monthly pay to \$1845 this year, the GDP deflator rises from 124 last year to 126 this year, and the consumer price index rises from 136 last year to 140 this year.

- Calculate the real wage for both years, in terms of base year dollars, using the GDP deflator. By this measure, in what year is the GSI better off? (3 points)

Based on GDP deflator:

$$\text{Real wage 2003 in base year dollars} = 100 \times \$1800/124 = \$1451.61$$

$$\text{Real wage 2004 in base year dollars} = 100 \times \$1845/126 = \$1464.29$$

=> better off in 2004

- Calculate the real wage for both years, in terms of base year dollars, using the CPI. By this measure, in what year is the GSI better off? (3 points)

Based on CPI:

$$\text{Real wage 2003 in base year dollars} = 100 \times \$1800/136 = \$1323.50$$

$$\text{Real wage 2004 in base year dollars} = 100 \times \$1845/140 = \$1317.86$$

=> better off in 2003

- Which of these measures of the price level is more appropriate for determining the well-being of the GSI? Justify briefly. (2 points)

The CPI is a better measure of inflation for this purpose, because it reflects the prices of consumer goods, rather than investment goods and other things that enter GDP. It therefore reflects the GSI's spending better than does the GDP deflator.

- What reasons can you think of why your GSI's true economic well-being in 2004 (based on his real income) might be either higher or lower than was indicated by these numbers for wages and prices? (2 points)

The CPI tends to overstate inflation for several reasons.

- *substitution (consumers can substitute toward relatively lower-priced goods)*
- *new goods (are missing from the indexes, but tend to fall in price)*
- *quality improvement (means consumers get more for their money)*

These biases mean that the GSI may be better off in 2004 than the real income based on the CPI would suggest.

Another reason could be that the GSI consumes different goods than are in the CPI basket, the same goods but in different proportions.

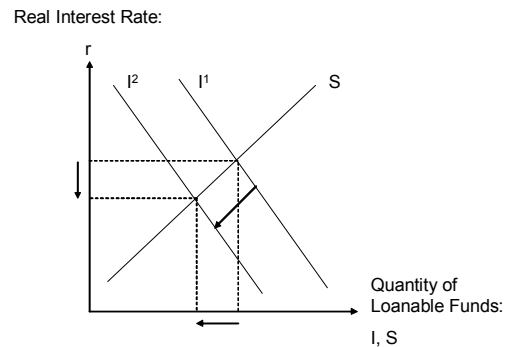
2.

Suppose there are two types of investment in the economy: business investment and residential investment. Suppose also that communities all over the country are shifting from taxes on income to taxes on residential properties to finance their activities. That is, local governments are continuing to collect the same total amount of taxes, but they are raising more of these taxes from owners of old and new residential properties.

- In a well labeled diagram, draw the economy's supply and demand for loanable funds. In the same diagram, show how the switch of taxation affects the supply and/or demand for loanable funds. Explain, in a sentence, the reason for each change in the diagram that you introduce. Then state clearly what happens to the equilibrium interest rate and to the total quantity of investment in the economy. (6 points)

The increased taxation of residential property reduces the incentive to own it, and thus to build it, so that for any given interest rate the amount of residential investment decreases. Thus the curve showing the demand for loanable funds shifts to the left.

As a result, and as shown in the figure, the equilibrium interest rate falls, and the total quantity of investment also falls.



- How does this policy affect the quantity of business investment? The quantity of residential investment? (4 points)

Business investment increases, because it responds to the decrease in the real interest rate. Residential investment decreases, because the initial leftward shift of the demand curve for residential investment outweighs the increase in residential investment due to the decrease in the real interest rate. (We know this since total investment falls while business investment increases, which must mean that residential investment falls.)