Final Exam
Economics 100 A
June 10, 2004

PLEASE READ INSTRUCTIONS CAREFULLY!

1. IMPORTANT: On your scantron sheet, fill in the bubble for your ‘form type’ exam with the letter A, B, C, or D found at the top of this cover sheet.

2. IMPORTANT: On your scantron sheet, print your name and perm number in the blocks provided and fill in the bubbles underneath them, starting from the left.

3. IMPORTANT: When you turn in your scantron, you must also turn in this front cover page of the exam. Hand them both to the test proctors. These sheets must be checked against your scantron as a part of the grading process. You may keep the remaining pages of your exam to study for the final and as a record of how you answered each question.

4. IMPORTANT: You will get 2; extra points on your score if you follow these instructions without fail.

5. IMPORTANT: You will get 3 points for each correct multiple choice answer, 2 points for each correct true false answer, 1 point for answers left blank, and no points for wrong answers.

6. Put your name, perm number, and section leader at the top of this page in the spaces provided.

7. To mark true/false answers on your scantron: mark “a” for true and “b” for false.

8. Use a number 2 pencil (do not use a ballpoint pen). Be sure to fill in the bubbles completely. The scanner does not reliably read partially filled bubbles.
In general, aggregate demand depends only on prices and total income and not on how total income is distributed among consumers.

There is a positive net consumer surplus when the total amount one pays for something is less than the amount one would be willing to pay rather than do without it altogether.

Supply and demand theory shows us that the burden of a sales tax depends critically upon whether the tax is collected from the sellers or collected from the buyers.

A consumer with convex preferences who is indifferent between the bundles (3,1) and (9,3) will like the bundle (6,2) at least as well as either of the first two bundles.

If the elasticity of demand curve for millet is -0.50 at all prices higher than the current price, we would expect that when bad weather reduces the size of the millet crop, total revenue of millet producers will fall.

If consumer 1 has the demand function \( x_1 = 1000 - 2p \) and consumer 2 has the demand function \( x_2 = 500 - p \), then the aggregate demand function for an economy with just these two consumers would be \( x = 1500 - 3p \) for \( p < 500 \).

Sam’s utility function is \( U(x,y) = 2x + y \) where \( x \) is the number of \( x \)’s he consumes per week and \( y \) is the number of \( y \)’s he consumes per week. Sam has $200 a week to spend. The price of \( x \) is 4. Sam currently doesn’t consume any \( y \). Sam has received an invitation to join a club devoted to consumption of \( y \). If he joins the club, Sam can get a discount on the purchase of \( y \). If he belonged to the club he could buy \( y \) for $1 a unit. How much is the most Sam would be willing to pay to join this club?

(a) $50 a week
(b) $100 a week
(c) $40 a week
(d) nothing
(e) None of the above.
8. D  If a consumer views a unit of consumption in period 1 as a perfect substitute (one-for-one) for a unit of consumption in period 2 and if the real interest rate is positive, the consumer will:

(a) consume more in period 1 than in period 2 if income elasticity exceeds 1; else would consume more in period 2 than in period 1.
(b) consume only in period 1.
(c) consume equal amounts in each period.
(d) consume only in period 2.
(e) equalize expenditures but not consumption in the two periods.

9. E  The inverse demand function for nectarines is described by the equation \( p = 552 - 6q \), where \( p \) is the price in dollars per crate and \( q \) is the number of crates of nectarines demanded per week. When \( p = 18 \) per crate, what is the price elasticity of demand for nectarines?

(a) \(-108/89\)
(b) \(-89/18\)
(c) \(-6/552\)
(d) \(-6/89\)
(e) \(-18/534\)

10. B  Bernice has the utility function \( u(x,y) = \min\{x,y\} \) where \( x \) is the number of pairs of earrings she buys per week and \( y \) is the number of dollars per week she has left to spend on other things. (We allow the possibility that she buys fractional numbers of pairs of earrings per week.) If she originally had an income of $13 per week and was paying a price of $5 per pair of earrings, then if the price of earrings rose to $8, the comp ensating variation of that price change (measured in dollars per w week) would be closest to:

(a) $14.
(b) $6.50.
(c) $13.
(d) $4.33.
(e) $12.

11. E  Reginald is fond of cigars. His utility function is \( U(x,c) = x + 10c - .5c^2 \) where \( c \) is the number of cigars he smokes per week and \( x \) is the money that he spends on consumption of other goods. Reginald has $200 a week to spend. Cigars used to cost him $1 each, but their price went up to $2 each. This price increase was as bad for him as losing the following amount of income:

(a) $8
(b) $9
(c) $5
(d) $7.25
(e) $8.50
12. The inverse demand function for mangos is defined by the equation, $p=91-5q$, where $q$ is the number of crates that are sold. The inverse supply function is defined by $p=3+6q$. In the past there was no tax on mangos but now a tax of $44$ per crate has been imposed. What are the quantities produced before and after the tax was imposed?

(a) 14 crates before and 7 crates after  
(b) 8 crates before and 4 crates after  
(c) 16 crates before and 9 crates after  
(d) 5 crates before and 5 crates after  
(e) None of the above.

13. Miss Muffet insists upon consuming 2 units of whey per unit of curds. If the price of curds is 5 and the price of whey is 3, then if Miss Muffet’s income is $M$, her demand for curds will be:

(a) $3M/5$.  
(b) $M/5$.  
(c) $5c+3w=M$.  
(d) $5M$.  
(e) $M/11$.

14. If the demand function for tickets to a play is $q=1450-145p$, at what price will total revenue be maximized?

(a) 20  
(b) 10  
(c) 5  
(d) 2.50  
(e) None of the above.

15. In a certain kingdom, the demand function for rye bread was $q=232-5p$ and the supply function was $q=6+4p$ where $p$ is the price in zlotys and $q$ is loaves of bread. The king made it illegal to sell rye bread for a price above 18 zlotys per loaf. To avoid shortages, he agreed to pay bakers enough of a subsidy for each loaf of bread so as to make supply equal demand. How much would the subsidy per loaf have to be?

(a) 14 zlotys  
(b) 21 zlotys  
(c) 16 zlotys  
(d) 20 zlotys  
(e) None of the above.
16. Tomoko has preferences represented by the utility function \( U(x,y) = 6x + 3y \). She consumes 10 units of good x and 8 units of good y. If her consumption of good x is lowered to 8, how many units of y must she have in order to be exactly as well off as before?

(a) 14 units of good y
(b) 14 units of good y
(c) 12 units of good y
(d) 10 units of good y
(e) None of the above

17. Without taxes, the inverse demand function for cigars is defined by \( p = 240 - 2q \) and the inverse supply function is defined by \( p = 3 + q \). Suppose, now, that cigars are taxed at $4 per box. Which of the following is true?

(a) The after tax price paid by consumers goes up by less than $2 and the after tax price received by suppliers rises.
(b) Consumers and suppliers share the cost of the tax equally.
(c) The after tax price paid by consumers rises by more than $2 and the after tax price received by suppliers falls by less than $2.
(d) The after tax price paid by consumers rises by $4 and the after tax price received by suppliers stays constant.
(e) The after tax price paid by consumers rises by less than $2 and the after tax price received by suppliers stays constant.

18. The demand function is described by the equation \( q(p) = 190 - p/5 \). The inverse demand function is described by:

(a) \( p(q) = 950 - 5q \).
(b) \( q(p) = 190 - 5p \).
(c) \( p(q) = 1/190 - q/5 \).
(d) \( q(p) = 1/(190 - p/5) \).
(e) \( p(q) = 190 - q/5 \).

19. If the interest rate is \( r \) and will remain \( r \) forever, then a bond that will pay 25 dollars a year forever, starting 1 year from now, is worth how much today?

(a) \( 25/(1+r + r^2 + \ldots + r^n + \ldots) \)
(b) \( 25/(1+r) \)
(c) \( 25/r \)
(d) \( 25(1+r) \)
(e) None of the above.

20. The demand for pickles is given by \( p = 131 - 2q \) and supply is given by \( p = 5 + 7q \). What is the equilibrium quantity?

(a) 19
(b) 14
(c) 11
(d) 103
(e) None of the above.