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 5 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.
April 15, 2004

Econ 100A
First Midterm Exam

1. F  If there are two goods with positive prices and the price of one good is reduced, while income and other prices remain constant, then the size of the budget set is reduced.

2. F  If good 1 is measured on the horizontal axis and good 2 is measured on the vertical axis, and if the price of good 1 is \( p_1 \) and the price of good 2 is \( p_2 \), then the slope of the budget line is \(-p_2/p_1\).

3. T  If someone has the utility function \( U=1000+2\min\{x,y\} \) then \( x \) and \( y \) are perfect complements for that person.

4. T  A consumer has preferences represented by the utility function \( U(x_1,x_2)=10(x_1^2+2x_1x_2+x_2^2)-50 \). For this consumer, goods 1 and 2 are perfect substitutes.

5. T  Sharon spends all of her income on peaches and strawberries. Peaches are a normal good for her. Her income increased by 20 percent and prices did not change. Her consumption of strawberries could not have increased by more than 20 percent.

6. C  If she spends all of her income on grapes and lemons, Katerina can just afford 9 grapes and 10 lemons per day. She could also use her entire budget to buy 3 grapes and 12 lemons per day. The price of grapes is 5 piastres each. How much is Katerina's income per day?

(a) 196 piastres  
(b) 200 piastres  
(c) 195 piastres  
(d) 186 piastres  
(e) None of the above.
7. A Matt lives on popcorn and seafood salads. The price of popcorn is 1 dollar per bag and the price of seafood salads is 3 dollars each. Matt allows himself to spend no more than 22 dollars a day on food. He also restricts his consumption to 7,200 calories per day. There are 1,200 calories in a bag of popcorn and 400 calories in a seafood salad. If he spends his entire money budget each day and consumes no more calories than his calorie limit:

(a) he can consume up to 4 bags of popcorn per day, but no more.
(b) he can consume up to 2 bags of popcorn per day, but no more.
(c) he can consume up to 6 seafood salads per day, but no more.
(d) he can consume up to 5 bags of popcorn per day, but no more.
(e) None of the above.

8. B Fanny consumes goods x and y. Her indifference curves are described by the formula $y = k/(x+2)$. Higher values of k correspond to better indifference curves. Which of the following is true?

(a) Fanny likes good y and hates good x.
(b) Fanny prefers bundle (7,8) to bundle (8,7).
(c) Fanny prefers bundle (8,5) to bundle (5,8).
(d) Fanny likes good x and hates good y.
(e) More than one of the above statements are true.

9. E If two goods are both desirable and preferences are convex, then:

(a) there must be a kink in the indifference curves.
(b) indifference "curves" must be straight lines.
(c) if two bundles are indifferent, then an average of the two bundles is worse than either one.
(d) the marginal rate of substitution is constant along indifference curves
(e) None of the above.

10. D Josephine's utility function is $U(x,y) = y + 5x^2$. She has one unit of x and two units of y. If her consumption of x is reduced to zero, how much y must she have in order to be exactly as well off as before?

(a) 14 units.
(b) 9 units.
(c) 11 units.
(d) 7 units.
(e) None of the above.
11. C Tim has preferences represented by the utility function:
\[ U(x,y) = \min\{6x+y, x+2y\}. \] If \( x \) is on the horizontal axis and \( y \) is on the vertical axis, what is the slope of his indifference curve at the point \((8,9)\)?

(a) The slope is -6.
(b) The slope is -2/6.
(c) The slope is -1/2.
(d) The slope is -1/6.
(e) The slope is -8/9.

12. B Peter consumes no commodities other than Miller Lite and Bud Light. His annual budget for these two commodities is described by the equation \( 5x + 20y = 300 \) where \( x \) is sixpacks of Miller Lite and \( y \) is cases of Bud Light. Peter considers 2 cases of Bud Light to be perfect substitutes for 10 sixpacks of Miller Lite. Which of the following is true?

(a) He will consume 60 sixpacks of Miller Lite per year.
(b) He will consume 15 cases of Bud Light per year.
(c) He will consume 19 cases of Bud Light per year.
(d) He will consume 12 sixpacks of Miller Lite per year.
(e) He is indifferent between any two bundles that use up his entire income.

13. A Ollie has a utility function \( U(x,y) = (x+4)(y+4) \). The price of \( x \) is 1 and the price of \( y \) is 1. When he maximizes his utility subject to his budget constraint, he consumes positive amounts of both goods.

(a) Ollie consumes exactly as much \( x \) as \( y \).
(b) Ollie consumes one more unit of \( x \) than he consumes of \( y \).
(c) Ollie consumes one more unit of \( y \) than he consumes of \( x \).
(d) Ollie consumes two more units of \( x \) than he consumes of \( y \).
(e) None of the above.

14. A Isobel consumes positive quantities of both jam and and juice. The price of jam is 5 cents per unit and the price of juice is 10 cents per unit. Her marginal utility of jam is 10 and her marginal utility of juice is 5.

(a) Without changing her total expenditures, she could increase her utility by consuming more jam and less juice.
(b) Without changing her total expenditures, she could increase her utility by consuming more juice and less jam.
(c) Without changing her total expenditures on jam and juice, she could not increase her utility.
(d) We can't tell whether any of the other statements are true or false without knowing the quantities she consumes.
(e) She should spend more money on both jam and juice.
15. If there are only two goods, if more of good 1 is always preferred to less, and if less of good 2 is always preferred to more, then:

(a) indifference curves slope downwards.
(b) indifference curves slope upwards.
(c) indifference curves may cross.
(d) indifference curves could take the form of ellipses.
(e) None of the above.