ECO 300 – MICROECONOMIC THEORY
Fall Term 2005
SAMPLE FINAL EXAMINATION

READ THESE IMPORTANT INSTRUCTIONS FIRST

[1] This is a closed-book examination. No books, handouts, notes, computers, cellular phones, … Put away all of these NOW. Just you, your pencil (or preferably, pen), and your calculator for numerical computations.

[2] The exam has FIVE pages. Make sure you have them all. Question 1 is multiple choice, and you have to write your answers on the exam itself and return it. The other six questions should be answered using the answer books supplied.

[3] PRINT your name clearly at the bottom of this page, and PRINT your name at the top of each subsequent page of the exam for Question 1, and on the cover of each answer book you use. This is very important; if your name on the exam or any answer book is unclear, you will lose the grade for that part.

[4] Do not start writing answers until you are told you can. From that point, you have 180 minutes. Therefore you should plan to spend about 10 minutes reading the exam carefully and planning your answers, and then roughly 20 minutes answering Question 1, and averaging 25 minutes for each of Questions 2-7 (but your actual times may vary widely depending on the objective and subjective difficulties of individual questions). At the end of the 3 hours, time will be called. After that, extra time can be "purchased" at the rate of FOUR points per MINUTE or fraction thereof.

[5] Write clearly, succinctly, and legibly. We prefer you to use a ball-point pen or ink. Writing in pencil may get smudged or unclear; any such unclear answers will be interpreted as wrong. If you change your mind about an answer, make your erasures and corrections VERY CLEARLY and NOT IN PENCIL; any ambiguity will be interpreted as an incorrect answer. You must show the steps of your mathematical arguments and calculations to get credit for them; your prose arguments should be well structured and clearly written.

[6] Sign the honor pledge:
  "I pledge my honor that I have not violated the honor code during this examination."

_____
Your signature

YOUR NAME (PRINTED):

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QUESTION 1: (10 points, 1 each) Multiple choice. Note that two or more answers may be partially correct. Choose the one that fits best. Mark your choice clearly and unambiguously on the exam itself. Return the exam with your other answer books.

1.   Consider a graph on which one good Y is on the vertical axis and the only other good X is on the horizontal axis. On this graph the income-consumption curve has a positive slope for low incomes, then it takes a zero slope for a higher income, and then it takes a negative slope for even higher incomes (the curve looks like an arc, first rising and then falling as income increases). This curve illustrates that, for all income levels,
a.   both X and Y are normal.
b.   only Y is normal.
c.   both X and Y are inferior.
d.   only X is normal.

2.   The magnitude of the slope of an indifference curve is:
a.   called the marginal rate of substitution.
b.   equal to the ratio of the total utility of the goods.
c.   always equal to the ratio of the prices of the goods.
d.   all of the above.
e.   (a) and (c) only.

3.   Consider the following statements:
        I. The numerical labels attached to indifference curves are meaningful only in an ordinal way.
        II. The numerical labels attached to isoquants are meaningful only in an ordinal way.
a.   both I and II are true.
b.   I is true, and II is false.
c.   I is false, and II is true.
d.   both I and II are false.

4.   A price taker is
a.   a firm that accepts different prices from different customers.
b.   a consumer who accepts different prices from different firms.
c.   a firm that accepts the best offers it can get from its customers.
d.   a firm that cannot influence the market price.
e.   Both c and d.

5.   In the exchange Edgworth box,
a.   The core is a subset of the contract curve
b.   The contract curve is a subset of the core
c.   The competitive equilibrium is on the contract curve but not in the core
d.   The competitive equilibrium is off the contract curve

6.   Monopolistically competitive firms set prices above marginal costs because they
a.   face downward sloping demand curves.
b.   are great in number.
c.   have freedom of entry.
d.   are free to advertise.
e.   have high fixed costs.

7.   When the federal government installs a price support program that requires the
       government to purchase all of a good not bought in the private economy at the
       support price, changes in producer surplus
a.   are negative.
b.   are positive, but more than offset by the cost to consumers and the government.
c.   are positive, and not offset by the cost to consumers and the government.
d.   and consumer surplus are both positive.
e.   zero, as the producers simply sell to the government instead of to consumers.

8.   Consider the following game. In each cell, the first number is the Row player's
       payoff, and the second number is the Column player's payoff.

		Column	
		Left	Right
Row	Up	1 , - 1	0 , 0
	Down	0 , 0	2 , - 2

In the Nash equilibrium of this game, Row chooses
a.   Up
b.   Up with probability 1/3, Down with probability 2/3
c.   Up with probability ½, Down with probability ½
d.   Up with probability 2/3, Down with probability 1/3
e.   Down

9.   The completion of a degree or course of study is a good labor market signal
a.   only if what is learned in that educational process relates directly to the job
       the individual is being considered for.
b.   primarily because individuals develop good habits in college that serve them well
       in other areas later on.
c.   because all individuals in the United States have the opportunity to pursue
       higher education.
d.   because people who possess the traits that make them more productive in the
       workplace have an easier time completing an education than those who don't.

10.   Which of the following is a negative externality connected to attending college?
a.   The fact that completion of a college degree acts as a signaling mechanism
       to employers.
b.   The fact that other costs, such as books and materials, are incurred in addition
       to tuition and fees.
c.   The fact that the people in the next room play loud music at hours when you want
       to sleep.
d.   The fact that your college has required that all individuals living in student
       housing either get or show they have already obtained vaccinations against
       all communicable diseases.
e.   The fact that you will get benefits from college that you don't currently anticipate.

QUESTION 2: (15 points)

       (a) What is meant by "expected utility" in the theory of consumer behavior under
risk?
       (b) What kind of utility functions do risk-averse expected-utility-maximizers
have?
       (c) Give an algebraic formula that is an example for such a utility function.

       (d) What is meant by the risk-premium?

       (e) Give an example of another utility function that represents the same
preferences you gave in (c).

       (f) EITHER Outline one criticism of expected utility theory, OR outline one
alternative that has been proposed to that theory.

QUESTION 3: (15 points)

       In the short run, a price-taking firm has a fixed and sunk cost 6, a fixed but
avoidable cost 2, and a variable (therefore also avoidable) cost function $\frac{1}{2} Q^2$, where Q
denotes the quantity of output, and is a continuous variable. In the long run, the fixed and
sunk cost will become fixed but avoidable. Find the equations for its supply curves in the
short run and in the long run.

       What will be the long run industry supply curve if all actual and potential firms in
the industry have the same cost structure and there is free entry and exit?

QUESTION 4: (15 points)

Suppose that rice imports into Japan are totally forbidden. The domestic market is perfectly competitive, the market equilibrium price is 300 yen/kilogram, and the quantity produced by Japanese farmers and consumed by Japanese consumers at this price is 10 million kilograms. If the import restriction is removed, perfectly elastic supply from the rest of the world will become available at the price of 60 yen/kilogram. At this price, Japanese consumers will demand 11 million kilograms of rice. The elasticity of supply of Japanese farmers is constant and equal to 1. Assume that the Japanese demand and supply curves are straight lines.
a. Draw a rough figure to show the supply and demand curves and the equilbria with and without trade.
b. What quantity will domestic producers supply at the new price? What will be the quantity of imports?
c. Calculate the gain in consumer surplus and the loss of producer surplus that will result from the import liberalization.

QUESTION 5: (15 points)

Suppose that the inverse market demand curve for mountain spring water is given by the equation $P = 1200 – Q$, where P is price and Q is quantity. Mountain spring water can be produced at no cost.
a.   What is the profit maximizing level of output and price of a monopolist?
b.   What level of output will be produced by each firm in a Cournot duopoly in the long run? What will the price be?
c.   What will be the level of output and price in the long run if this industry were perfectly competitive?

QUESTION 6: (15 points)

What characteristics define a pure public good? Derive the (Samuelson) condition for the optimal output of such a good. Can this be a practical method of providing and financing a public good? If so, how, and if not, why not?

QUESTION 7: (15 points)

Marx and Engels proclaimed in their Communist Manifesto: "From each according to his ability; to each according to his need." What problems of asymmetric information will confront a government that actually tries to run the country according to this principle? Briefly suggest how they can be tackled, and what compromises of the principle are then required.