

YORK UNIVERSITY

Faculty of LAPS

Final Examination

December 17, 2010

AP/Economics 2300 3.0 FF : Intermediate Microeconomic Theory I

S. Bucovetsky

time=2 hours

This exam consists of two sections. Part A counts for 40 percent of the grade, part B for 60.

Part A : Define any **8** of the following 10 terms. (40 % : 5 % per question)

1. budget set
2. marginal rate of substitution
3. weak axiom of revealed preference
4. income effect of a price decrease
5. no arbitrage condition
6. expected utility function
7. compensating variation to a price decrease
8. constant elasticity demand function
9. competitive market
10. first-price sealed-bid auction

Part B: Do any **6** of the following 10 questions. (60 % : 10 % per question)

1. If a person's preferences over her own food consumption F , and the global average temperature T could be represented by the utility function

$$U(F, T) = 100F - (T - 20)^2$$

are the person's preferences (i) monotonic? (ii) convex? Explain briefly.

2. The following table contains data on a person's consumption of two goods (x and y), and the prices of the two goods (p_x and p_y) in two different years. Can we tell in which year the person was better off? Explain briefly.

year	x	y	p_x	p_y
2005	5	15	2	1
2010	10	8	3	2

3. Suppose that a person regarded consumption when she was young as perfectly complementary to her consumption when old. How would her saving (when young) vary with the interest rate she can earn on her saving?

4. If the cost of extracting and refining a barrel of oil were expected to remain a constant \$20, how should the price of oil vary over time, in a world in which there was no uncertainty?

continued

5. What is the equivalent variation to a fall of \$2 in the price of clothing, if a person's preferences could be represented by the utility function

$$U(F, C) = F + 20C - \frac{1}{2}C^2$$

(where F is her food consumption, C her clothing consumption, and \ln denotes the natural logarithm function), if initially the price of food were \$1, the price of clothing were \$10, and the person's income was \$120?

6. Suppose that a person expects that there is a ten percent probability that she will suffer a financial loss of \$10,000 due to a fire in the next year.

Suppose as well that some insurance company is willing to sell the person insurance, at a price of 15 cents for every dollar of coverage purchased. That is, the person can choose to buy as much or as little insurance as she wishes, from no coverage up to \$10,000 worth of coverage, at a cost equal to 15% of the amount of coverage purchased.

If the person is a risk-averse expected-utility maximizer, what can you say about the amount of insurance which she would choose to purchase?

7. What is the own-price-elasticity of the aggregate demand in a market which consists of 1000 identical consumers, each of whom has an individual demand function with the equation

$$Q = 10\sqrt{p}$$

where p is the price of the good, and Q the quantity demanded?

continued

8. How would the cost of a small tax be shared between buyers and sellers, in a competitive market in which the aggregate quantity demanded was

$$Q^D = 36 - 4P$$

and the aggregate quantity supplied was

$$Q^S = 2p - 12$$

where P is the price paid by buyers and p is the price received by sellers?

9. Illustrate and explain the deadweight loss (also known as the excess burden) of a unit tax on the consumption of a single good.

10. What is the expected revenue from an efficient auction, if there are only 2 bidders, and each bidder's private value for the object being auctioned is an independent draw from the same distribution, in which each bidder's value is \$1 with probability 2/3 and \$10 with probability 1/3?

the end