YORK UNIVERSITY

Faculty of LAPS

Final Examination

April 14, 2011

AP/Economics 2350 3.0 NW & QW: Intermediate Microeconomic Theory II

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time=2 hours

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

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

1. isocost line

2. economic rent

3. monopolistic competition

4. Stackelberg (quantity leadership) model

5. cartel

6. dominant strategy

7. coordination game

8. Pareto optimal allocation

9. production possibilities frontier

10. Benthamite (classical utilitarian) welfare function

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

1. Suppose that a firm's production function can be written

$$y = x_1 + \sqrt{x_1 x_2} + (x_2)^2$$

where x_1 is the quantity employed of input 1, x_2 the quantity employed of input 2, and y the quantity of output produced.

Does this firm's technology have decreasing, constant, or increasing returns to scale? Explain briefly.

2. What is the cost function $c(y, w_1, w_2)$ for a firm with a production function

$$y = \min (x_1, 2x_2)$$

where x_1 and x_2 are the quantities employed of the 2 inputs, and y the quantity of output produced?

3. If a firm's technology has constant returns to scale in the long run, what is the shape of its short–run average cost curve? Explain briefly.

4. If a profit–maximizing single–price monopoly charges a price which is 3 times as high as its marginal cost, what is its own–price elasticity of demand?

continued

5. What are the quantities produced in equilibrium by two firms, producing an identical homogeneous product, for which the demand function has the equation

$$Y = 15 - p$$

where Y is the total quantity demand in the market, and p the price of the good, in the following situation?

Firms choose what **quantities** to produce, with the price determined as the market–clearing price for the overall quantity produced. The firms choose their quantities **simultaneously**. The cost to either firm of producing y units of output is $3y$.

6. Why might both firms in a duopoly want to implement a policy of "lowest price or we'll double the difference", in which each firm promises to refund customers twice the difference in prices, if the other firm charges a lower price?

7. Find all the Nash equilibria to the strategic form game depicted below.

	L	CL	CR	R
t	$(0,0)$	$(0,0)$	$(0,0)$	$(0,0)$
mt	$(0,0)$	$(1,1)$	$(2,0)$	$(2,0)$
mb	$(0,0)$	$(0,2)$	$(1,1)$	$(2,0)$
b	$(0,0)$	$(0,2)$	$(0,2)$	$(0,0)$

continued

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8. Show how cooperation might be an equilibrium outcome in a repeated game, in which the same two players played a Prisoners' Dilemma game against each other several times.

9. Find all the Pareto efficient outcomes in a 2–person, 2–good exchange economy, in which there are 12 units of good 1, 12 units of good 12, and in which the preferences of the two people can be written

$$U_A(x_A^1, x_A^2) = x_A^1 + x_A^2$$

and

$$U_B(x_B^1, x_B^2) = x_B^1 x_B^2$$

where (x_A^1, x_2^A) is person A's consumption bundle, and (x_B^1, x_B^2) is person B's consumption bundle?

10. In an economy with production, would the allocation be Pareto efficient if all purchases of clothing were subject to a 50% tax, with the proceeds of the tax being divided equally among all the people in the economy? Explain briefly.

the end