

UNIVERSITY OF SWAZILAND

DEPARTMENT OF ECONOMICS

FINAL EXAMINATION 2007

COURSE TITLE: INTRODUCTION TO MICROECONOMICS

COURSE CODE: ECON 201

INSTRUCTIONS:

1. ANSWER QUESTION 1 IN SECTION A AND ONE OTHER QUESTION.

PLUS

QUESTION 5 IN SECTION B AND ONE OTHER QUESTION.

2. ALL QUESTIONS CARRY 25 MARKS EACH

TIME ALLOWED: THREE HOURS

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Question 1

Use the Lagrangian method to solve the following Consumer's constraint maximization problem:

$$U = XY + X + Y$$

$$\text{s.t. } M = P_x X + P_y Y$$

$$X, Y \geq 0$$

Where:

X and Y are finished goods with prices P_x and P_y . M is the level of income.
 $M = \text{E}100$, $P_x = \text{E}5$, $P_y = \text{E}10$

[13 marks]

- i) Test whether X and Y are normal or inferior goods. [4 marks]
- ii) Test whether the ordinary demand functions are downward sloping. [4 marks]
- iii) Test whether X and Y are substitutes or complements. [4 marks]

Question 2

- (a) With the aid of diagrams, clearly distinguish between the law of variable factor proportions and the laws of returns to scale. [12 marks]
- (b) Using a Cobb Douglas production function, explain homogeneity of the production function and demonstrate the laws of returns to scale. [7 marks]
- (c) Use an isoquant map to demonstrate increasing returns to scale. [6 marks]

Question 3

- (a) With the aid of a diagram, explain how the law of diminishing returns applies to a short run total cost curve. [12 marks]
- [b] With the aid of diagrams, compare and contrast the income and substitution effects of a price change for a normal good and an inferior good which violates the Law of Demand. [12 marks]

- (b) What is the special name given to the inferior good described in (b) above?

[1 mark]

Question 4

With the aid of diagrams, distinguish among the following economic concepts: Compensating Variation, Equivalent Variation and Consumer's Surplus. Comment on their accuracy as measures of welfare change.

[25 marks]

SECTION B

Question 5

For the following classes of Oligopolistic models, using suitable examples describe how prices and output are determined:

- i) Perfect Collusion [8 marks]
ii) Imperfect Collusion [8 marks]
iii) Independent Action [9 marks]

Question 6

Suppose a company sells its product in two markets and has the following demand functions:

$$Q_1 = 55 - 10 P_1 \text{ for market 1}$$

$$Q_2 = 23 - 2 P_2 \text{ for market 2}$$

Where Q = Output per year
 P = price per year

Overall costs of the product are as follows:

$$C = 800 + 1.5 Q$$

Where $Q = Q_1 + Q_2$

- i) Calculate the profit-maximising prices and quantities for markets 1 and 2 [13 marks]
- ii) Would the company be worse off if it stopped using price discrimination? Show your work. [12 marks]

Question 7

With the aid of diagrams explain how Pure Monopoly and monopolistic competition models deviate from the ideal case of Perfect Competition. Discuss the welfare effects of each of these models. [25 marks]

Question 8

With the aid of diagrams evaluate the following statement: ***“A resource input being used by a Monopolist that has a monopsony in the purchase of the input is subjected to more exploitation than an input which is hired by a perfectly competitive firm even if the latter is a monopsonist in the purchase of the resource.”***

[25 marks]