

**UNIVERSITY OF SWAZILAND**

**DEPARTMENT OF ECONOMICS**

**SUPPLEMENTARY EXAMINATION**

**JULY 2013**

**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**

**TIME ALLOWED: THREE HOURS**

**TOTAL MARKS: 100**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.**

### Question 1 (Compulsory)

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 (Compulsory)**

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 workings. [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]