

**UNIVERSITY OF SWAZILAND**  
**DEPARTMENT OF ECONOMICS**  
**FINAL EXAMINATION 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 EACH**

**TIME ALLOWED: THREE HOURS**

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

### Question 1(Compulsory)

(a) If the manufacturer of cut glass has a production function given by

$Q = 15K^{0.3} L^{0.6}$ , find the marginal product of labour and capital. If the current levels of labour and capital are 12 and 30, respectively, determine the effect on output of an additional unit of labour.

[10 marks]

(b) A firm's isoquant curve is given by

$$Q = L^{1/5} K^{2/5}$$

Where  $Q$  = level of output

$L$  = labour input

$K$  = capital input

Assume  $P_L = 2$ ,  $P_K = 4$

Where  $P_L$  = price of labour

$P_K$  = price of capital

Use the Lagrangian Method to calculate the minimum level of costs that is necessary to produce  $Q = 40$ . [15 marks]

### Question 2

With the aid of diagrams, demonstrate the effectiveness of the following in regulating a monopoly:

i) Price Regulation

ii) Lump Sum Tax

iii) Per-unit Tax

### Question 3

a) Using a suitable model, explain how pricing and output determination is undertaken in an oligopolistic industry characterized by independent action. How does price rigidity occur in this model? [25 marks]

**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)

a) For the following data showing different levels of employment of a resource input and the corresponding Total Product of Labour, use the marginal productivity theory to:

| Labour | TP <sub>L</sub> |
|--------|-----------------|
| 4      | 28              |
| 5      | 35              |
| 6      | 41              |
| 7      | 46              |
| 8      | 50              |

(i) Determine the optimum level of employment of labour given that the firm behaves as a perfect competitor in the sale of the finished product, the product price ( $P_x$ ) = E10 and that the factor input is paid a wage rate  $w = E60.00/\text{man days}$

[10 marks]

(ii) Assume a constant wage rate at  $w = E50.6/\text{man days}$  determine the optimum level of employment of labour given that the firm has a monopoly in the market for its finished product and price changes as follows:

| Labour | TP <sub>L</sub> | Price ( $P_x$ ) (E) |
|--------|-----------------|---------------------|
| 4      | 28              | 10                  |
| 5      | 35              | 9.8                 |
| 6      | 41              | 9.6                 |
| 7      | 46              | 9.4                 |
| 8      | 50              | 9.2                 |

[10 marks]

(iii) Determine the level of monopolistic exploitation of the resource and explain what this concept means using a sketch from the above example.

[ 5 marks]

### Question 6

(a) When Average cost (AC) is declining, show mathematically that the Marginal cost(MC) curve lies below the AC curve.

[9 marks]

(b) 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]

### 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]