

**UNIVERSITY OF SWAZILAND  
FACULTY OF SOCIAL SCIENCES  
DEPARTMENT OF ECONOMICS**

**SUPPLEMENTARY EXAMINATION PAPER : JULY 2016**

**TITLE OF PAPER : MICROECONOMICS**

**COURSE CODE : ECON 201/ IDE ECON 201**

**TIME ALLOWED : THREE (3) HOURS**

**INSTRUCTIONS :**

- 1. ANSWER FOUR (4) QUESTIONS; TWO(2) FROM SECTION A AND TWO (2) FROM SECTION B.**
- 2. ALL QUESTIONS CARRY TWENTY FIVE (25) MARKS**

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

**SECTION A - (ANSWER ANY TWO (2) QUESTIONS FROM THIS SECTION)**

**Question 1**

**(Total Marks = 25)**

- a) With the aid of a graph, explain the concept of economies of scale. (Clearly show the different kinds of economies of scale on the graph) **[9 Marks]**
- b) With the aid of a graph, explain the concept of consumer surplus. **[7 Marks]**
- c) Illustrate and explain the effect (substitution and income) of a price decrease for a normal good. **[9 Marks]**

**Question 2**

**(Total Marks = 25)**

Simphiwe, an ECON 201 student's utility function from the consumption of two goods, Coke ( $C$ ) and Bread ( $B$ ) is given by  $U = 3C^{1/4}B^{3/4}$ . Her budget constraint is in the form

$I = P_C C + P_B B$ . Where  $P_C$  is the price of a litre of Coke,  $P_B$  is the price of a loaf of bread, and  $I$  is the income of Simphiwe.

- a) Derive Simphiwe's demand functions for Coke and Bread using the Lagrangian method. **[15 Marks]**
- b) If the price of Coke is  $E2$  per litre, the price of bread is  $E4$  per loaf, and the Simphiwe's income is  $E400$ , find the utility maximizing levels of Coke and Bread. **[4 Marks]**
- c) What is the maximum level of utility? **(2 marks)**
- d) Show this optimal bundle in a graph. **(4 marks)**

**Question 3**

**(Total Marks = 25)**

- a) Graphically illustrate and explain why the Marginal Rate of Technical Substitution (MRTS) is different along an Isoquant curve. **[6 Marks]**
- b) Describe the concept of price elasticity of demand. **[3 Marks]**
- c) For the following demand function of Maize Meal  $Q = 180 - 2P$ . With the aid of a graph and mathematics, prove that this demand function has a constant slope but different elasticities. **[16 Marks]**

**SECTION B - (ANSWER ANY TWO (2) QUESTIONS FROM THIS SECTION)**

**Question 4**

The cost function of a profit maximizing perfectly competitive firm in the short run is given as

$$C = q^3 - 5q^2 + 100q + 180$$

- i) Calculate the profit maximizing output level for this firm when  $P = E120$ . (10)
- ii) Derive the supply function for this firm. (15)

**Question 5**

Assume that two firms in Matsapha produce meali -meal that tastes the same. The first firm is Ingwe Milling and the other firm is Top- Score Milling. The profits of each firm depends on its own output and that of the rival/competitor's firm and these are expressed as:

$$\pi_1 = 24q_1 - q_1^2 - 2q_2^2 - 8$$

$$\pi_2 = 30q_2 - 3q_2^2 - 2q_1 - 9$$

- i) What will be the output level of each firm. (10)
- ii) Derive the profits for each firm. (5)
- iii) Calculate the firm's profit and output levels if instead the two firms collide in order to maximize joint profits. (10)

**Question 6**

Write short explanatory notes on the following concepts: (5 marks each)

- i) Reaction function
- ii) Characteristics of monopolistic Competition
- iii) Equilibrium condition for Perfect Competition
- iv) Stackelberg behavior
- v) Short-run supply curve under perfect completion