

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 $P = \text{E}120$. (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