

UNIVERSITY OF SWAZILAND
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
MAIN EXAMINATION PAPER : DECEMBER 2017

TITLE OF PAPER : MICROECONOMICS

COURSE CODE : 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)

Uminatsi, an IDE-ECON 201 student's utility function from the consumption of two goods, Cola (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 Cola, P_B is the price of a loaf of bread, and I is the income of Uminatsi.

- a) Derive Uminatsi's demand functions for Cola and Bread using the Lagrangian method. [15 Marks]
- b) If the price of Cola is $E8$ per litre, the price of bread is $E4$ per loaf, and the Uminatsi's income is $E400$, find the utility maximizing levels of Cola 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 $Q = 200 - 4P$. 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 5

(Total Marks = 25)

- a) Under First Degree Price Discrimination the entire consumer surplus is eliminated. Explain and graphically illustrate. [10 Marks]
- b) "In the short run the perfectly competitive firm will continue with production even though it cannot cover all its average costs". Graphically illustrate and explain the conditions under which this statement is true. [15 Marks]

Question 5

(Total Marks = 25)

- a) Briefly explain how output is determined in a Stackelberg Oligopoly model. (No graphs required). [5 Marks]
- b) A duopoly faces a market demand of $P = 120 - Q$. Firm 1 has a marginal cost of 20 and Firm 2 has a marginal cost of 40.

Calculate the Stackelberg equilibrium for this market if Firm 1 is the leader. [20 Marks]

Question 6

(Total Marks = 25)

A market segmenting Monopoly firm has the following demand functions for the different markets:

$$Q_1 = 32 - 0.4P_1$$

$$Q_2 = 18 - 0.1P_2$$

Assume that the total cost function is $C = 50 + 40Q$, where $Q = Q_1 + Q_2$

- a) Find the profit maximizing levels of output and prices under price discrimination. [10 Marks]
- b) Suppose the firm could not practice price discrimination, what would be the profit maximizing price and quantity levels? [10 Marks]
- c) In which situation is the company better – off? [5 Marks]