

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

**SUPPLEMENTARY EXAMINATION PAPER : JULY 2018**

**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) Write short explanatory notes on the following concepts:
- Economies of scope
  - Law of Diminishing Returns to a factor input
  - Consumer Surplus (illustrate on a graph) [4 Marks Each]
- b) Discuss three (3) properties/features of indifference curves and link each one of them to the characteristics of a rational consumer. [6 marks]
- c) Illustrate and explain the effect (substitution and income) of a price decrease for an inferior good. [7 Marks]

**Question 2****(Total Marks = 25)**

The production function for a Vusi's Pap and Meat company is:  $Q = 100K^{0.5}L^{0.5}$

Where  $Q$  = Pap and Meat units produced,  $K$  = number of braai stands, and  $L$  = number of workers. Let the price of braai stands ( $K$ ), be denoted by  $r$ , and the price of labour ( $L$ ), be denoted by  $w$ . The total expenditure on braai stands and labour is denoted by  $C$ .

- Illustrate graphically how the optimum combination of inputs is determined to yield maximum output at the least cost for the firm. [5 Marks]
- Set up a Lagrangian function for the optimisation problem. [2 Marks]
- Obtain the first order conditions for maximisation of output subject to the expenditure constraint and find the optimum functions for braai stands and number of workers. [10 Marks]
- If the price of a braai stands per unit is  $r = E200$ , the price of labour (wage per day)  $w = E80$ , and the total expenditure amount available to the firm is  $C = E4000$ , find the input mix that will maximise output. [5 Marks]
- How many pap and meat units would Vusi's Pap and Meat Company supply per day? [3 Marks]

**Question 3****(Total Marks = 25)**

- a) Complete the table below (provide the formulas used to obtain the figures) [5 Marks]

OUTPUT(Q)	TFC	MC	TVC	TC	AVC
0	50	-			
1		70			
2		60			
3		70			

Where TFC is total fixed cost, MC is marginal costs, TVC is total variable costs, TC is total cost, and AVC is average variable cost. (Note that these are costs in the short run)

- b) There is an inverse relationship between productivity and costs of production. Show this relationship both diagrammatically and algebraically. [12 Marks]
- c) "Short run average costs of production will always exceed long run average costs." Using an appropriate diagram, illustrate and explain to prove that this statement is true.

[8 Marks]

**SECTION B - (ANSWER ANY TWO (2) QUESTIONS FROM THIS SECTION)****Question 4****(Total Marks = 25)**

- a) Briefly explain why is the perfectly competitive firm's demand curve horizontal? [5 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. [20 Marks]

**Question 5****(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]

**Question 6**

**(Total Marks = 25)**

- a) Using suitable graphs, determine how price and output is determined in a Cournot Oligopoly model. (Assume a duopoly market) [10marks]
- b) Algebraically derive the Cournot equilibrium price and quantity. Assume that both firms have zero marginal costs. [15 marks]