MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR
SECOND YEAR
SCHOOL OF BUSINESS AND ECONOMICS
BSC. ECON, BSC. ECON & STAT, BSC. FIN ECON, BCOM, BSC. PPM, B.Ed., BSc. ENT.

COURSE CODE: ECO 2103-1

COURSE TITLE: INTERMEDIATE MICROECONOMICS

DATE: **1ST APRIL 2022**   **TIME:1430-1630**

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **TWO** questions

This paper consists of 4 printed pages. Please turn over.

QUESTION ONE

a) Clearly distinguish between the following concepts and terms as used in Economics. Use diagrams and formulas where necessary:
   i.   Price Elasticity of Demand and Elasticity of Substitution
   ii.   Change in Supply and Change in Quantity Supplied **(6 marks)**

b) Immaculate and Swabrina own a bakery at Gate D where they are involved in the production of bread. Their demand curve is given as Q= 200 – P where P is the price of bread and Q is the output. The marginal cost of their production is given as MC = $Q2$- 28Q + 211. Further investigation shows that the bakery's cost when not producing output is Ksh. 1,000. Compute:
   i.   The equation for Total Revenue
   ii.   The equation for Total Cost
   iii. The level of output that maximizes the bakery's profit
   iv.   The bakery's profit   **(8 Marks)**

c) *Mutura* exhibits unique characteristic such that its Income Effect opposes and outweighs its Substitution Effect. Using Consumer Equilibrium analysis, explain and illustrate graphically the effect of an increase in the price of *mutura* on an individual's consumption. Based on its characteristic, how would you categorize *mutura*   **(6 Marks)**

QUESTION TWO

Arnold and Kepha Enterprise is a price discriminating monopolist involved in the processing and selling of *Mukombero* in Omutsutswi (X) and Ololulunga (Y). The Enterprise is faced with the following demand functions in the two markets:

$$P_x = 55 - Q_x - Q_y$$

$$P_y = 70 - Q_x - 2Q_y$$

The Total Cost function is

$$C = Q_x^2 + 2Q_y^2 + 20$$

Where Q_x is Quantity of *Mukombero* sold in Market X, Q_y is Quantity sold in Market Y, P_x is Price of *Mukombero* in X and P_y is Price in Y

a) Highlight the conditions necessary for Arnold and Kepha Enterprise to practise price discrimination   **(5 Marks)**

b) Calculate the Enterprise's profit maximizing levels of prices (P_x and P_y) and outputs (Q_x and Q_y)   **(10 Marks)**

QUESTION THREE

Makena Growers Ltd uses only Capital (K) and Labour (L) in its production of Miraa juice in Meru and is faced with the following output maximization problem:

$$\text{Max } Q = 20K^{1/3}L^{2/3}$$

The firm has Ksh. 3000 to spend on the two inputs and it is given that one unit of capital and one unit of labour cost ksh. 30 and ksh. 70 respectively.

a) Using the Lagrangian expression, determine the quantity of capital and labour that the firm should use in order to maximize its output

(8 Marks)

b) What will be the maximum output of Miraa juice by Makena Growers

(2 Marks)

c) Mary's Average Total Cost function for the production of Muratina is given as follows:

$$\text{ATC} = 0.48Q^2 - 0.4Q + 10 + 6Q^{-1}$$

Derive Mary's short run supply function **(5 marks)**

QUESTION FOUR

Neville has the following Cobb-Douglas utility function for the consumption of Bread (X) and Sweet Potatoes (Y)

$$\text{⬚}(⬚, y) = X^{1/4}Y^{3/4}$$

Given that the price of Bread is Ksh. 50, Price of Sweet Potatoes is Ksh 20 and that Neville has Ksh. 2000 to spend on the two goods

a) Using the Marginal Utility approach, compute the optimal consumption bundle.
b) If the price of Bread decreases from Ksh. 50 to Ksh. 30, what will be Neville's new consumption bundle?
c) What will be the Total Effect (TE) of the price change?
d) Calculate the Substitution Effect (SE) and Income Effect (IE) resulting from the reduction in price of Bread
e) Using the sign of the income effect, what can you say about good X? Why? **(15 Marks)**

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