



MAASAI MARA UNIVERSITY
REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
SECOND YEAR FIRST SEMESTER

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: 15/12/2023

TIME: 1430-1630 HRS

INSTRUCTIONS TO CANDIDATES

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

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

QUESTION ONE

- a) Using diagrams, clearly differentiate between Inferior giffen good and Inferior non-giffen good **(3 marks)**
- b) Briefly discuss the disadvantages/dangers of monopoly **(4 marks)**
- c) Munene's Marginal Product function for production of Irish Potatoes is given as:

$$MP = 4 + 8X - 0.3X^2 \text{ and a constant } C = 0$$

From the production function, at what level does stage II of production begin **(4 marks)**

- d) Given good Y whose Income Effect opposes and outweighs the Substitution Effect, using Consumer Equilibrium analysis, clearly explain and illustrate graphically the effect of an increase in the price of Y on an individual's consumption. What type of good is Y **(5 Marks)**

- e) A production function is given as:

$$Q = 3K^{0.4}L^{0.6}$$

Determine the Elasticity of Output with respect to Capital

(4 Marks)

QUESTION TWO

Lorna and Ochieng ltd is a price discriminating monopolist with the following demand functions for its product in two markets where Q_1 is quantity sold in market 1, Q_2 is quantity sold in market 2, P_1 is price in market 1 and P_2 is the price in market 2.

$$Q_1 = 35 - \frac{1}{2}P_1$$

$$Q_2 = 50 - P_2$$

If the monopolist's Total Cost function is given as;

$$TC = 20 + 8Q$$

$$\text{But; } Q = Q_1 + Q_2$$

- Find the Selling Prices and Quantities of the product in the two markets
- What is the firm's profit?

- c. What will be the profit maximizing level of output and price in the absence of price discrimination? **(15 Marks)**

QUESTION THREE

David and Eunice Growers Ltd uses Capital (K) and Labour (L) in its production of coffee. The firm is faced with the following output maximization problem:

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

If 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. 40 and ksh. 60 respectively:

- a) Using the Lagrangean 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 coffee by the firm **(2 Marks)**
- c) Given $Q = f(L, Y) = 0.1LY + 3L^2Y + 0.1L^3Y$

Where Q is output, L is variable input and Y is the fixed input.

Assuming that $\bar{Y} = 10$ so that $Q = f(L, 10)$:

- i. Calculate the Marginal Product of Labour (MP_L)
- ii. At what point does MP_L reach maximum
- iii. What is the value of L at the end of stage II of production? **(5 Marks)**

QUESTION FOUR

- a) Sheilah's Average Total Cost function for the production of sweet potatoes is given as follows:

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

Derive her short run supply function **(5 marks)**

- b) Mercy has the desire of minimizing her expenditure subject to a given utility level for consumption of goods X and Y. Her problem is thus stated as:

$$\begin{aligned} \text{Min } & P_x X + P_y Y \\ \text{Subject to } & U = X^a Y^{1-a} \end{aligned}$$

Where P_x is price of good X and P_y is price of Y.

- i. Write the Lagrangean function
- ii. Derive the three First-order-condition equations
- iii. Compute Mercy's optimal demand for X and Y that will minimize her expenditure **(10 marks)**

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