

LAIKIPIA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

FIRST YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN AGRICULTURAL
EDUCATION AND EXTENSION

**AGE 111: INTRODUCTION TO AGRICULTURAL
ECONOMICS**

STREAM: *BSC AGED*

TIME: 2 HRS

DAY: *TUESDAY [8.30 A.M-10.30 A.M]* **DATE:** *3/02/2026*

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

Vision: *Nurture and Transform for the World*

Mission: *To Contribute to the World through Education, Research, Training, Consultancy, Innovation, Outreach and Collaboration*

INSTRUCTIONS:**ANSWER QUESTION ONE & ANY OTHER TWO QUESTIONS.****QUESTION ONE: 30 MARKS**

- a) Explain why agricultural economics is an important discipline in agricultural science studies **(8 marks)**
- b) Discuss how consumer preferences, income, and prices of related goods influence the demand for staple foods in Kenya. **(6 marks)**
- c) Giving relevant example, explain why the supply of most agricultural products is relatively inelastic in the short run **(4 marks)**
- d) i) At which stage of production is elasticity of production equal to one? Give reasons for your answer **(2 marks)**
 ii) Why is the stage of production where elasticity of production equals one considered the most efficient stage for producers? **(4 marks)**
- e) Explain why most agricultural commodity markets in Kenya tend to operate under conditions close to perfect competition. **(6 marks)**

QUESTION TWO: 20 MARKS

- a) Using a well-labeled diagram, differentiate between the substitution effect and the income effect of a change in the price of a good. **(10 marks)**
- b) The demand and supply functions for maize in a local market are given as:

$$Q_d = 120 - 5P$$

$$Q_s = 20 + 3P$$

Where Q_d and Q_s represent quantity demanded and supplied in kilograms, and P is the price per kg in KES

Required:

- i) Determine the equilibrium price and equilibrium quantity. **(5 marks)**
- ii) Illustrate your result using a well-labeled diagram showing the demand and supply curves and their point of intersection. **(5 marks)**

QUESTION THREE: 20 MARKS

- a) Given a production function of the form:
 $Y = 4X + 0.8X^2 - 0.05X^3$

Where, X ranges from 0 to 12, the price of input $P_x = \text{KES } 250$, and total fixed costs $\text{TFC} = \text{KES } 1200$

Required:

- i) For various levels of X in a table compute, Y, TVC, TC, AFC, AVC, ATC, and MC **(14 marks)**
- ii) Plot the cost curves (ATC, AVC, and MC) on a well-labeled diagram and identify the point of minimum cost **(6 marks)**

QUESTION FOUR: 20 MARKS

- a) Critically analyze how the market structure of agricultural marketing determine farmers' market participation **(10 marks)**
- b) Explain FIVE importance of agricultural marketing to Kenyan economy **(10 marks)**

QUESTION FIVE: 20 MARKS

- a) Given the following information

Input X	Output Y
0	0
10	75
20	245
30	435
40	560
50	648
60	710
70	753
80	782
90	800
100	810
110	808

- i) Calculate the marginal product **(2 marks)**
- ii) Calculate the Average product **(2 marks)**
- iii) Clearly show the boundaries of each stage of production **(2 marks)**
- iv) Which is the rational stage of operation and why? **(2 marks)**

- b) Describe the main properties of an isoquant and explain how each characteristic guides farmers in choosing the most efficient combination of inputs. **(8 marks)**
- c) Using relevant examples, differentiate between complementary and supplementary products **(4 marks)**