



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRIBUSINESS MANAGEMENT AND TRADE

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT

AGB 203: AGRICULTURAL PRODUCTION ECONOMICS

DATE: 25/7/2019

TIME: 11.00-1.00 PM

INSTRUCTIONS:

Answer question one and two other questions

QUESTION ONE (30 MARKS)

- a) Define and illustrate the following economic terms:
 - i. Production possibility curve (2 marks)
 - ii. Economies of Scale (2 marks)
 - iii. Expansion path (2 marks)
- b) Describe the relationship between the total physical product and total value of the product (4 marks)
- c) Describe and illustrate the concept of Least Cost Combination as used in production economics (6 marks)
- d) Describe three properties of isoquants (6 marks)
- e) Describe four context of the production environment that the farmer operates in (8 marks)

QUESTION TWO (20 MARKS)

- a) Differentiate between the marginal rate of input substitution and elasticity of production (5 marks)
- b) Given hypothetical cost data for wheat production in the table below and further given that the price for wheat is Ksh 5 and corresponding fixed cost is given as Ksh. 75.

Yield – Wheat/Kg	Variable costs
40	89
50	110
60	130
70	140
90	175
100	200
110	230
130	320
140	380

In a tabular form, calculate and interpret the following (10 marks)

1. AVC
 2. AFC
 3. MC
 4. MR
 5. Profit
- c) Differentiate between sufficient and necessary conditions in profit maximization (5 marks)

QUESTION THREE (20 MARKS)

- a) Describe five risks that face agricultural production, highlight potential strategies to handle the aforementioned risks (10 marks)
- b) Suppose that the farmer has Ksh 4000 available for the purchase of the two inputs x_1 and x_2 to produce corn. Suppose also that x_1 costs Ksh 100 per unit and x_2 costs Ksh 60 per unit. Find the following
- i. At least four possible combinations of x_1 and x_2 (5 marks)
 - ii. Illustrate the data in a well labeled graph (5 marks)

QUESTION FOUR (20 MARKS)

- a) Describe four types of enterprises that are in line with product transformation functions (8 marks)
- b) Illustrate and describe main types of iso-quant and their possible application in agriculture (10 marks)

QUESTION FIVE (20 MARKS)

- a) Using relevant illustrations and examples, describe four impacts of adoption of technology in agriculture on the production functions under the competitive conditions (10 marks)
- b) Suppose a farmer is faced with FOUR production decisions: 1) Grow maize 2) Grow wheat 3) Keep dairy 4) Grow vegetables. We assume that nature has two states, one producing high yields (high rainfall) and the other producing low yields (low rainfall) and interactions of probability and returns as shown in the table below

Farmers' production decision	High yields $P=0.7$	Low yields $P=0.3$
a. Grow maize	Ksh 4,000	Ksh 900
b. Grow wheat	Ksh 3,100	Ksh 1,800
c. Keep dairy	Ksh 4,200	Ksh 1,500
d. Grow vegetables	Ksh 3,500	Ksh 1,200

Showing step by step, examine which enterprise should the farmer take, citing economic reasons (10 marks)