MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF AGRICUTURE AND ENVIRONMENTAL STUDIES

DEPARTMENT OF AGRICULTURE

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

THIRD YEAR **FIRST** SEMESTER EXAMINATION

GAE 302-PRODUCTION ECONOMICS OF FIRM MANAGEMENT

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer question **ONE** and any other **TWO** questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A (30 MARKS)

QUESTION ONE (30 MARKS)

a. Define the following terms as used in production economics
   i. Expanding path (2 marks)
   ii. Economics of scale (2 marks)
   iii. Marginal rate of technical substitution. (2 marks)
   iv. Elasticity of production (2 marks)

b. Explain why firm management in an integral part of production economics (2 marks)

c. Describe two ways in which a firm manager makes decision with imperfect information. (2 marks)

d. Differentiate between log-run and short run production periods. (4 marks)

e. Describe why a firm manager should apply the principle of least cost combination in farm management using a suitable diagram. (4 marks)

f. Using's diagrams describe three types of doquants (6 marks)

SECTION B (40 MARKS) ANSWER ANY TWO QUESTIONS

QUESTION TWO (20 MARKS)

a. Define the production possibilities curve with a diagram. (2 marks)

b. Using suitable diagram, describe 4 types of product relationship that are in line with product transformation functions. (8 marks)

c. A dairy farmer is faced with two choices to switch from raising replacement heifer to purchasing heifer. The heifer calves will be sold at 20,000 each. The cost of raising heifer include pasture maintain ace at ksh5,000, supplementary feeds at Kshs 11,000health cost Kshs 10,000labour ksh8,000and hay feed at Kshs 60,000. The dairy farmer has five calves to raise or replace with purchased calves. The cost of buying one heifer is Kshs 40,000. there will be no reduce income for purchasing heifer
   i. Evaluate the current raising of replacement heifer against the proposed change to purchasing heifer. (4 marks)
   ii. Advice the farmer accordingly. (4 marks)
   iii. Explain two limitations of partial budgeting (2 marks)

QUESTION THREE (20 MARKS)

a. Describe the law of diminishing return. (2 marks)

b. (i) Assuming a neoclassical production function (TPP) average physical product (APP) and marginal physical product (MPP). Use suitable illustration. (8 marks)

(ii) Indicate the product stage of economic relevance. (2 marks)

c. (i) Describe four risk that face agricultural production in Kenya (4marks)

(ii) Identify possible solution to manage ricks mentioned in (i) above. (4 marks)

QUESTION FOUR (20 MARKS)

a. A firm manager observes a gradual decline in farm profitability. Use the decision making process to analyse how the manager should solve the issue. (10 marks)

b. Given the maize production data in the table below, further given that maize is sold at KES 4 per kg and fixed cost in a given at Kshs 75

Maize yield(kg)	**Variable cost**
40	**89**
50	**110**
60	**130**
70	**140**
80	**155**
90	**175**
100	**200**
110	**230**
120	**270**
130	**320**
140	**380**

Calculate and interpret the following

i. Total cost (2 marks)

ii. Average cost (2 marks)

iii. Marginal cost (2 marks)

iv. Profit (2 marks)