



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016 ACADEMIC YEAR

SECOND YEAR 2ND SEMESTER MAIN EXAMINATION

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL
ECONOMICS & RESOURCE MANAGEMENT**

COURSE CODE: IAE 285

COURSE TITLE: PRODUCTION ECONOMICS

DATE: 4TH MAY 2016

TIME: 2PM – 4PM

INSTRUCTIONS TO CANDIDATES

Answer all Questions in section A and any other two (2) Questions in section B.

TIME: 2 Hours

This paper consists of 4 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

SECTION A = 30 MARKS

1. a) Define the following terms as used in Production Economics:
 - i. Production (1 Mark)
 - ii. Isoquant (1 Mark)
 - iii. Marginal Rate of Product Transformation (1 Mark)
- b) Outline how you can arrive at the optimal input combination using the arithmetical method. (5 Marks)
- c) Distinguish between the following terms as used in Production Economics:
 - (i) "Fixed" and "variable" costs (2 Marks)
 - (ii) "Marginal cost" and "Marginal revenue" (2 Marks)
 - (iii) "Implicit" and "explicit" costs (2 Marks)
 - (iv) "Technical" and "Economic" efficiency (2 Marks)
- d) Outline how the elasticity of production varies along a classical production function. (6 Marks)
- e) What is the effect of technology on a production function? (2 Marks)
- f) Describe the attitudes of different persons towards risk. (6 Marks)

SECTION B = 40 MARKS

2. a) With the aid of suitable examples describe the following relationships between inputs:
 - (i) Substitutes (2 Marks)
 - (ii) Complements (2 Marks)
- b) Outline the relationship between average cost, average product and marginal product for a classical production function. (3 Marks)

- c) The table below shows the hypothetical relationship the output of maize and the levels of input of potassium.

Input Bags of Potassium (X)	Total Product (Bags of Maize) (Y)	Average Product (AP_x) (Bags of Maize per Bag of Potassium) $\frac{Y}{X}$	Marginal Product (MP_x) (Bags of Maize per Bag of Potassium)	Elasticity of Production
0	0			
1	2			
2	5			
3	9			
4	14			
5	19			
6	23			
7	26			
8	28			
9	29			
10	29			
11	28			
12	26			

Compute the values of the average product, marginal product and elasticity of production in the table. (13 Marks)

3. Suppose total fixed costs for Sukari Company are equal to \$100, and the company's total variable costs are given by the following relationship (where Q = output): $TVC = 60Q - 3Q^2 + 0.10Q^3$.
- (a) Compute the firm's
- (i) Total Cost function. (1 Marks)
 - (ii) Average Variable Cost function. (1 Mark)
 - (iii) Average Fixed Cost function. (1 Mark)
 - (iv) Average Total Cost function (1 Mark)

(b) Compute and tabulate the firm's Average Fixed Cost, Marginal Cost, Average Total Cost and Total Cost for 0 to 70 units of output. (16 Marks)

Units of Output	Average Fixed Cost (\$ per unit of output)	Marginal Cost (\$ per unit of output)	Total Cost (\$)	Average Total Cost (\$ per unit of output)
0				
10				
20				
30				
40				
50				
60				
70				

4. Discuss how risks and uncertainties in agriculture can be managed. (20 Marks)