(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2016/2017 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER

SUPPLEMENTARY /SPECIAL EXAMINATION

FOR THE DEGREE OF B.Sc. IN AGRICULTURAL ECONOMICS AND RESOURCES MANAGEMENT

COURSE CODE: IAE 285

COURSE TITLE: PRODUCTION ECONOMICS

DATE: 22ND SEPT. 2017   TIME: 8 AM – 10 AM

INSTRUCTIONS TO CANDIDATES

Answer question ONE in section A and any TWO in section B.

TIME: 2 Hours

This paper consists of **FOUR** printed pages. Please Turn Over. ▶

SECTION A (30 MARKS)

Answer the compulsory question from this section.

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)   Briefly explain 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)   Describe how the elasticity of production varies along a classical production function.   (6 marks)

    (e)   Expalin the effect of varying technology on a firm's production function.   (2 marks)

    (f)   Describe the attitudes of different persons towards risk.   (6 marks)

SECTION B (40 MARKS)

Answer **ANY TWO** questions from this section.

2. Describe how agricultural producers can manage the risks and uncertainties that face them.   (20 marks)

3. (a) With the aid of suitable examples describe the following relationships between inputs:

(i) Substitutes (2 marks)

(ii) Complements (2 marks)

(b) Explain 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 and tabulate the values of the average product, marginal product and elasticity of production. (13 marks)

4. Suppose total fixed costs for Sukari Company are equal to Kes 100,000 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 mark)

(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 (Kes per unit of output)	Marginal Cost (Kes per unit of output)	Total Cost (Kes)	Average Total Cost (Kes per unit of output)
0				
10				
20				
30				
40				
50				
60				
70				