



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER

MAIN EXAMINATION

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN
AGRICULTURAL ECONOMICS AND RESOURCES MANAGEMENT**

COURSE CODE: IAE 285

COURSE TITLE: PRODUCTION ECONOMICS

DATE: 1ST AUGUST 2018

TIME: 2 PM – 4 PM

INSTRUCTIONS TO CANDIDATES

Answer question ONE any other TWO questions.

TIME: 2 Hours

This paper consists of THREE printed pages. Please Turn Over. ►

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) Describe how you can arrive at the optimal product combination using the graphical 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) Explain why the elasticity of production varies along a classical production function. (6 marks)
- (e) Describe the effect of varying technology on a firm's production function. (2 marks)
- (f) Describe the attitudes of different persons towards risk. (6 marks)
2. Describe how fruit tree producers can counteract the risks and uncertainties that confront them. (20 marks)
3. (a) With the aid of suitable examples describe the following relationships between products:
 - (i) Supplementary products (2 marks)
 - (ii) Complementary products (2 marks)
- (b) Explain the relationship between average cost, marginal cost and marginal revenue for a classical production function. (3 marks)
- (c) The following is the production function of a small firm:

$$Q = 3K^{0.45}L^{0.55}$$

- (i) Compute the MP_L and the AP_L functions. (4 marks)
- (ii) Compute the MP_K and the AP_K functions. (4 marks)
- (iii) Calculate the values of the $MP_L, AP_L,$ and MP_K, AP_K if $K=35$ and $L=15$. Total Product, (5 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				