



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER

SPECIAL/SUPPLEMENTARY EXAMINATION

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

COURSE CODE: IAE 285

COURSE TITLE: PRODUCTION ECONOMICS

DATE: 12TH OCTOBER 2018

TIME: 8 – 10 AM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO questions.

TIME: 2 Hours

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

1. a) Describe the three stages of classical production functions. (3 marks)
- (a). Explain any **FOUR** factors that determine the product combination. (4 marks)
- (b). Explain **FIVE** factors that influence the value of land in an area. (5 marks)
- (c). (i) Define the term Isoproduct Curve (2 marks)
- (ii) Explain four characteristics of isoproduct curves. (4 marks)
- (d). Explain the following types of functions return relationships.
- (i) Constant Marginal Rate of returns (2 marks)
- (ii) Increasing Marginal Rate of returns (2 marks)
- (iii) Decreasing Marginal Rate of returns (2 marks)
- (e). Consider a cost function $TC \text{ (Total Cost)} = 200 + 12Y - 0.08Y^2 + 0.12Y^3$.
- Compute:
- (i) Total Fixed Cost & Average Fixed Cost functions. (2 marks)
- (ii) Total Variable Costs & Average Variable Cost functions. (2 marks)
- (iii) Marginal Cost function. (2 marks)

2. The following table shows the number of units produced (Q), total revenue (TR), and the total cost (TC) of a product in a small firm.

| Q (Kg) | TR (Kes) | TC (Kes) |
|--------|----------|----------|
| 100 | 1000 | 900 |
| 200 | 1800 | 1100 |
| 300 | 2400 | 1400 |
| 400 | 2800 | 1800 |
| 500 | 3000 | 2300 |
| 600 | 3000 | 2900 |
| 700 | 2800 | 3600 |
| 800 | 2400 | 4400 |

- (a). From the above data, determine the firm's optimal size of production. (10 marks)
- (b). Determine the firm's profit at the optimal level of production. (10 marks)
3. a) Explain any **FIVE** types of risks and uncertainties in smallholding dairy farming in Kenya. (10 marks)
- b) Explain how smallholding dairy farmers can manage the risks named in 3 (a) above (10 marks)

4. (i) With the aid of a diagram, explain the concept of a firm's least cost factor combination. (5 marks)

(ii). Explain the following relationship in production economics:

a) Factor – product relationship (5 marks)

b) Factor - factor relationship (5 marks)

c) Product –Product relationship (5 marks)