



SOUTH EASTERN KENYA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE, AGRICULTURE AND BACHELOR OF EDUCATION

AEC 302: PRODUCTION ECONOMICS AND FIRM MANAGEMENT

Main & Kitui

DATE: 14TH DECEMBER, 2017

TIME: 10.30 -12.30 PM

Instructions

Answer question one in section A and any other two from section B

Section A (30marks) Answer question one in this section

Q1 a) i) Explain the meaning of a production function (2 marks)

ii) State the law of diminishing returns (2marks)

iii) Explain why the law of diminishing returns is common in agriculture (6 marks)

b) With the help of an illustration briefly discuss the three (3) stages of a production function (6marks)

c) Given the following production function:

$$Y=8X+ 3.5X^2 - 3X^3$$

compute:

i) Average product (AP) if $x=4$ (2marks)

ii) Marginal product (mp) if $x=4$ (3 marks)

iii) Elasticity of production(EP) if $x=4$ (3 marks)

iv) The end point of stage 1 (3 marks)

v) The end point of stage II (3 marks)

Section B (40 marks) Answer any two questions from this section

- Q2 a) State the reasons behind product-product relationship (4marks)
b) With Help of illustrations discuss any four types of product relationships (16 marks)

Q3 a) Using relevant agriculture examples explain what you understand by the terms

- i. Risks (2 marks)
ii. Uncertainty (2marks)

b) Discuss the major causes of risks to farmers (risks in production decisions) (6 marks)

c) List and explain ways that a farmer may use to reduce risks (12 marks)

4 a) Briefly discuss the following terms :

- i. Opportunity cost (2 marks)
ii. Variable costs (2 marks)
iii. Marginal costs (2 marks)

b) If a farmer faces a function of the following form:

$$ATC=100/Y + 5.5Y + 0.5Y^2$$

Where Y is the output measured in kilograms (kgs) and ATC is average total cost in Kenya Shillings (Kshs)

Calculate:

- i) The total variable costs when Y=10 kgs (3marks)
ii) The average variable costs when Y= 10 kgs (3 marks)
iii) The marginal cost when Y=10kgs (4 marks)
iv) The level of fixed costs (4 marks)