



SOUTH EASTERN KENYA UNIVERSITY
UNIVERSITY EXAMINATIONS 2018/2019

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

AEC 302: PRODUCTION ECONOMICS AND FIRM MANAGEMENT

DATE: 7TH DECEMBER, 2018

TIME: 8.00-10.00 PM

Instructions

1. Answer all questions in section A
2. Answer any two questions from section B

Section A

Answer all questions 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 production a production function (6marks)
- c) Given the following production function:
- $$Y=8X+ 3.5X^2 - 3X^3$$
- Compute:
- i) Average product (AP) f 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

Answer any two questions from this section

- Q2 a) State the reasons behind product-product relationship (4 marks)
- 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 courses 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)