



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES
UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN
AGRIBUSINESS MANAGEMENT
THIRD YEAR SECOND SEMESTER 2013/2014 ACADEMIC YEAR**

REGULAR

COURSE CODE: AAE 3321

COURSE TITLE: Economics of Crop and Livestock Production

EXAM VENUE:LR 7

STREAM: BSc (Agribusiness Management)

DATE:8/12/14

EXAM SESSION: 2.00 – 4.00PM

TIME: 2.00 HOURS

Instructions:

- 1. Answer ALL question in Section A (compulsory) and ANY TWO questions in Section B.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A **[30 MARKS]**

1. Given the following production function $Y=3x+2x^2-0.1x^3$:
- (a) Calculate the point of diminishing returns. [6 marks]
 - (b) Calculate elasticity of response when $x=10$.
Which stage of production is this? [4 marks]
2. Given the following production function $Y = 2L^{\frac{1}{2}} + 3K^{\frac{1}{2}}$ where L is labour and K is capital, Y is the output and that the price of labor=2, the price of capital=1 and price of output=8. Supposing that the budget is limited to only Ksh. 99, such that the budget line is given by $2L+K=99$, find the optimal units of K and L and the maximum profit. [20 marks]

SECTION B **[40 MARKS]**

3. (a) Using a well labeled diagram, describe the three stages of a classical production function and its relatives. [15 marks]
(b) Using a diagram, explain the properties of an isoquant. [5 marks]
4. (a) Define the following terms:
- i. Production function. [2.5 marks]
 - ii. Law of diminishing returns. [2.5 marks]
- (b). Using a graph, distinguish between economies and diseconomies of size. [7 marks]
(c). Give two agricultural examples of economies and diseconomies of size. [8 marks]
5. (a) What are the salient features of a pure competition market? [6 marks]
(b) Using a graph, describe what is meant by MRTS? [6 marks]
(c) A farm engages in wheat production and the total cost function is given by $TC=100+6Y-0.4Y^2+0.02Y^3$. Given that $Y=5$, calculate:
- i. Average Total Cost (ATC). [2 marks]
 - ii. Average Variable Cost (AVC). [2 marks]
 - iii. Average Fixed Cost (AFC). [2 marks]
 - iv. Marginal Cost (MC). [2 marks]