



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND  
TECHNOLOGY SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF  
SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION &  
BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT  
FOURTH YEAR SECOND SEMESTER 2024/2025 ACADEMIC YEAR**

**SIAYA**

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**COURSE CODE: AEB 1410**

**COURSE TITLE: Environmental and Natural Resource Economics**

**EXAM VENUE:**

**STREAM: BSc (Agricultural education and extension) & BSc (Agribusiness  
Management)**

**DATE: April                      EXAM SESSION:**

**TIME: 2.00 HOURS**

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**Instructions:**

- 1. Answer ALL questions in Section A (compulsory) and ANY other 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.**

## **Part A (30 Marks)**

**Answer all six questions. Each question carries 5 marks.**

1. Explain sustainability and the two contrasting views regarding it. [5 Marks]
2. Explain the concept of market failure and its relevance to environmental and natural resource economics. [5 Marks]
3. Describe the key characteristics of an efficient property rights system and how they contribute to optimal resource allocation. [5 Marks]
4. Differentiate between static and dynamic efficiency in resource allocation. [5 Marks]
5. Discuss the concept of externalities and provide two examples of environmental externalities. [5 Marks]
6. What is the significance of cost-benefit analysis in environmental policy formulation? [5 Marks]

## **Part B (40 Marks)**

**Answer any two questions. Each question has two parts, with each part carrying 10 marks.**

7.
  - (a) Using the Hartwick Rule, explain how sustainability can be maintained in the extraction of non-renewable resources. [10 Marks]
  - (b) Illustrate the economic implications of the over-extraction of common property resources such as fisheries and forests. [10 Marks]
8.
  - (a) Explain the role of government policies in addressing environmental problems, with reference to at least two policy instruments. [10 Marks]
  - (b) Discuss how environmental valuation techniques can be used to assess the economic value of natural resources. [10 Marks]
9.
  - (a) Examine the role of international environmental agreements in addressing global environmental challenges. [10 Marks]
  - (b) Discuss the impact of price controls on the efficient allocation of depletable energy resources, using the case of natural gas or oil. [10 Marks]