

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF ECONOMICS
AND STATISTICS, ECONOMICS AND SOCIOLOGY AND ECONOMICS AND
MATHEMATICS**

ECON 448: NATURAL RESOURCE ECONOMICS

STREAMS:

TIME: 2 HOURS

DAY/DATE: THURSDAY 23/09/2021

11.30 A.M – 1.30 P.M.

INSTRUCTIONS:

- **Answer question ONE and any other TWO questions.**

QUESTION ONE (30 MARKS)

- (a) Distinguish between the following pair of terms as used in resource economics. (10 marks)
- (i) Open access and common property resources
 - (ii) Weak sustainability and strong sustainability
 - (iii) Current reserves and potential reserves of natural resources
 - (iv) Community based and integrated natural resource management approaches
 - (v) Static efficiency and dynamic efficiency
- (b) What is intergenerational equity in resource use? Explain the main principles that guide intergenerational equity. (8 marks)
- (c) A firm producing good X and located in an urban city is one of the two firms operating in that industry. Its production activities are being associated with emission of dangerous chemicals into the atmosphere. What are the options and constraints available to the environmental protection agency in addressing this problem? (6 marks)
- (d) Property rights have some distinct characteristics that guarantee efficient allocation of resources. Outline these characteristics. (6 marks)

QUESTION TWO (20 MARKS)

- (a) Explain the Hotelling's rule and show its relevance to the optimal and sustainable management of a non-renewable resource. (8 marks)
- (b) Discuss the role of imperfect information in market and government failure with an application to natural resource conservation. (6 marks)
- (c) Over the past 50 years it has become increasingly apparent that the world is facing a resource management crisis. Discuss the main reasons behind government failure in resource conservation. (6 marks)

QUESTION THREE (20 MARKS)

- (a) Explain and differentiate between the concepts of efficiency, optimality and sustainability and their roles in natural resource economics. (8 marks)
- (b) Examine the conditions necessary for the proper functioning of markets and their roles in leading markets to an efficient allocation of natural resources. (6 marks)
- (c) Distinguish between market and non-market valuation of natural resources by giving an example for each. (4 marks)

QUESTION FOUR (20 MARKS)

- (a) (i) Provide a discussion of the second-best theory using an example drawn from your community and involving a natural resource conservation problem. (5 marks)
 - (ii) Assess the relevance of the second-best theory in the context of sub-Saharan countries. (5 marks)
 - (b) Discuss the relationship between resource endowment, use and management and economic development. (10 marks)
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