

**NATIONAL UNIVERSITY OF LESOTHO**

**Faculty of Agriculture**

**Department of Agricultural Economics & Extension**

**AEC 4302-12: Natural Resource and Environmental Economics**

**Final Examination**

**January 2024**

**Marks: 100**

**Time: 3 Hours**

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**Instruction: Answer all questions**

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### QUESTION 1

- a) Describe an agricultural project of your choice causing a negative externality, clearly indicating how it meets the two conditions for an economic externality to prevail. [10]
- b) Use graphical model / coarse theorem model to indicate the optimal level of externality. [05]
- c) Derive a condition for Pareto optimality from the model in b) above. [05]

### QUESTION 2

Use material balance model/circular flow model and example(s) to aid your discussion on the four (4) economic functions of the environment. [20]

### QUESTION 3

One indicator of the extent to which international environmental cooperation has taken place is the number of international agreements that exist. Lesotho like other countries signed the Kyoto Protocol to the United Nations Framework Convention on Climate Change, in response to the challenge of climate change that affect the globe.

Describe 5 major ways in which Lesotho integrates the treaty in its planning and development interventions. [20]

### QUESTION 4

Identify a project of your choice and discuss how it will go through the different stages of environmental impact assessment. [20]

### QUESTION 5

- a) Explain how policy failure can contribute to the misuse and degradation of natural resources and the environment. [05]
- b) Use MSY to portray and explain the rate of change of wild life population at each level of stock. [15]

END