

CNATIONAL UNIVERSITY OF LESOTHO
BA SUPPLEMENTARY EXAMINATIONS
EC 4307: ENVIRONMENTAL ECONOMICS

AUGUST 2023

3 HOURS

MARKS=100

INSTRUCTION

Answer any **four** questions.

QUESTION 1

Discuss the different views of economics schools of thought towards environmental paradigms and history of environmental economics. (25)

QUESTION 2

- a) Suppose that government of Lesotho has a problem with pollution in rivers and lakes, from both residential and industrial sources such as Maqalika dam and “Blue River” at Ha-Thetsane. You are asked to advice on appropriate pollution control policies.
- i) How would you decide on which pollution control policy the government of Lesotho should adopt? Explain. (5)
- ii) With the help of diagrams and relevant Lesotho examples, discuss two pollution control policies which will be more appropriate to solve this pollution problem. (14)
- b) Discuss the proposition that marketable emissions permits are more appropriate than emissions taxes for controlling regional and global pollutants because of the much lower transfer costs associated with the former instrument. (6)

QUESTION 3

- a) Define the concept of valuation in environmental economics and why we study environmental valuation. Make examples where possible. (5)
- b) **Write short notes on the Hedonic Pricing Method (HPM) and discuss problems that face both Travel Cost Method (TCM) and HPM.** (10)
- c) Lessons might be learned from the COVID-19 global pandemic that may inform response to other global issues, such as climate change. Do you think people’s behavior will change as a result of COVID-19 pandemic in ways that will impact the environment? Discuss. (10)

QUESTION 4

Suppose that an environmental problem affecting Lesotho and South Africa can be modelled as a **chicken game**. Each country must choose whether or not to act (*act and don't act*). Acting is assumed to be a public good so that acting by either country benefits both. Suppose that each unit of pollution abatement comes at a cost of M7 to the abater and, being a public good, confers benefits of M5 to both countries. However, doing nothing exposes both countries to serious pollution damage, at a cost of M4 to both countries.

- a) Can this kind of a game be used to solve the climate change problem? Support your answer. (5)
- b) What is the non-cooperative solution to this one-shot simultaneous game? (5)
- c) Suppose that Lesotho is committed to acting on environmental problems, how does this affect the non-cooperative solution? (5)
- d) Suppose that the game is played sequentially with South Africa moving first, what solution do you expect? Explain. (5)
- e) What difference would it have if Lesotho was to move first? (5)

QUESTION 5

The United Nations Climate Change Conferences are yearly conferences held in the framework of the United Nations Framework Convention on Climate Change (UNFCCC). They serve as the formal meeting of the UNFCCC parties (Conference of the Parties, COP) to assess progress in dealing with climate change, and beginning in the mid-1990s, to negotiate the Kyoto Protocol to establish legally binding obligations for developed countries to reduce their greenhouse gas emissions. Starting in 2005 the conferences have also served as the "Conference of the Parties Serving as the Meeting of Parties to the Kyoto Protocol" (CMP); also parties to the convention that are not parties to the protocol can participate in protocol-related meetings as observers. From 2011 to 2015 the meetings were used to negotiate the Paris Agreement as part of the Durban platform, which created a general path towards climate action. Any final text of a COP must be agreed by consensus.

Discuss how Lesotho strives to adhere to national commitments under the UNFCCC nationally and regionally. The discussion should cover the role played by private and public actors. **(25)**

GOOD LUCK