

# UGANDA MARTYRS UNIVERSITY

## NKOZI

UNIVERSITY EXAMINATIONS

FACULTY OF BUSINESS ADMINISTRATION

DEPARTMENT OF ECONOMICS

NATURAL RESOURCES ECONOMICS AND POLICY

ENM 2102

BSC. ECONOMICS AND NATURAL RESOURCES MANAGEMENT

DATE: Thursday 15 December 2022

TIME: 02:00 – 05:00PM

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### Instructions:

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1. Attempt any **FOUR (04)** questions
  2. All questions carry equal marks
  3. Do not write anything on the questions paper.
  4. Carefully read through ALL the questions before attempting.
  5. No **names** should be written anywhere on the examination booklet.
  6. Ensure your work is **clear** and **readable**. Untidy work shall be penalized.
  7. Any type of examination Malpractice will lead to automatic disqualification.
  8. Ensure that your **ID number** is indicated on all pages of the examination answer booklet.
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### Question One

- a) The natural world and the economy are not only interrelated, but also interdependent. As a student of natural resource economics and policy, illustrate and use examples to justify this statement (7marks)
- b) Distinguish between a common property, Open Access resource and a public resource (6marks)
- c) Compare and contrast the Ricardian and Malthusian views concerning the natural resources (6marks)
- d) Describe the conditions that must be respected if efficient resource extraction can be realized under multiple period conditions (6marks)

### Question Two

- a) Discuss the different conceptualization of sustainability (12marks)
- b) To what extent are the ecologist's and the economist's concepts of sustainability mutually consistent? (5marks)
- c) Make a distinction between renewable and non-renewable resources. What implications does this have for resource managers? (4marks)
- d) Explain the concepts of weak and strong sustainability. (4marks)

### Question three

- a) Assume an oil reserve to be extracted in two periods. The demand function for oil in the first periods  $P_1 = 20 - 0.4Q_1$  and the demand function for future period is  $P_2 = 30 - 0.5Q_2$  in the second period. Assume further that the marginal cost of extracting oil is \$ 8 and the discount rate is 7%. If the supply for oil is restricted to 90 barrels in the two periods; determine the efficient extraction rates of oil and the net social benefits. (12marks)
- b) Assuming Uganda's oil extraction is already taking place and you are the head of the advisory team for the extraction exercise, explain the grounds upon which you base to tell that the resource is increasingly becoming scarce (13marks)

### Question Four

- a) Provide a distinction between the following as used in nature resource Economics
  - i) Marginal user cost and marginal resource cost (3marks)
  - ii) Maximum sustainable yield and maximum economic yield (3marks)



- b) As a student of Natural Resource Economics and Policy, explain the three fundamental objectives for sustainable development (6marks)
- c) Explain the concept of sustainable development as observed by Collin Clark (6marks)
- d) "Many resource economists argue that proper management of natural resources can better be realized through assignment of property rights over the resources". With the help of the cardinal features of properly designed property rights, justify this argument (7marks)

#### Question Five

- a) Using your lecture knowledge, explain why the task of determining the optimal harvest time for forest resources is very complicated (5marks)
- b) Derive and explain the condition for the optimal rotation of forests. How will increase in the net price of timber, land rent and increased rates affect the future acreage of timber and the optimal harvesting age? (15marks)
- c) How is the concept of Mean annual increment used in determining the optimal age at harvest? (5marks)

#### Question Six

- a) Explain any four (4) reasons why environmental resource accounting should be conducted in your country (8marks)
- b) With your experience, examine any five (5) difficulties that a developing country like Uganda is likely to face when undertaking environmental resource accounting (10marks)
- c) Describe the Norwegian resource accounting system clearly highlighting how it can be applied in Uganda. (7marks)

#### Question Seven

- a) Explain the types of externalities that occur in a fishery (4marks)
- b) Make a distinction between economic and biological overfishing (4marks)
- c) As a student of Economic Policy, assess the efficacy of taxes, individual transferable quotas (ITOs) and fishing licenses in addressing the overfishing problem in your country (17marks)

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