

# UGANDA MARTYRS UNIVERSITY

## NKOZI

### UNIVERSITY EXAMINATIONS

#### END OF SEMESTER TWO FINAL ASSESSMENT 2021/2022

Bachelors of Science in Economics & Natural Resource Management

#### INTRODUCTION TO NATURAL RESOURCES MANAGEMENT

DATE: Tuesday 19 July 2022

TIME: 09:30AM – 12:30PM

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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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5marks)  
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#### Question Four

- a) Explain the following concepts as used in environmental valuation (10marks)
- i) Use value
  - ii) Existence value
  - iii) Option value
  - iv) Quasi option value
- b) Uganda is in preparations of extracting her new discovered oil. Suppose the initial estimates (stock) of oil resources is 300 billion barrels and the cumulative use of oil through period t is 150 billion barrels. If the annual use rate is 3 billion barrels per year;
- (i) Find the current reserves available. (2marks)
  - (ii) How long (years) will the reserves last give an annual use rate of 3 billion? (3marks)
  - (iii) If the discoveries of oil revise the initial estimate of the oil resource upwards say to 1000 billion barrels and the current use rate remains unchanged;
    - (a) Calculate the current reserves available (5marks)
    - (b) How long (years) will the reserves last? (5marks)

#### Question Five

- a) With appropriate illustration, explain the following concepts as used in environmental valuation methods (10marks)
- i) Willingness to Pay (WTP)
  - ii) Willingness to Accept (WTA)
- b) Clearly describe the Travel cost technique as used in environmental valuation (15marks)

#### Question six

- a) Write brief notes on the following as used in resource management. (3marks each)
- i) Open Access Resource,
  - ii) Common Property Resource,
  - iii) State Property Resource,
  - iv) Private Property Resource
- b) Explain the characteristics of efficient property rights (6marks)
- c) Examine the causes of inefficiencies in forestry management (7marks)

#### Question seven

- a) Define the following terms (9marks)
- i) Externalities
  - ii) Adverse selection
  - iii) Moral hazard
- b) With relevant examples explain the different types of externality (8marks)
- c) Examine the different ways government can intervene in controlling negative externalities (8marks)

### Question One

- a) Explain the role of economics in studying natural resource management (5marks)
- b) With relevant examples, explain the difference between renewable and non-renewable resources (4marks)
- c) As a student of natural resource management, describe the role of natural resources in the development of your country. (6marks)
- d) Uganda like any other country in the world today, is concerned with the problem of climate change and to solve this problem, it is shifting to the use of renewable resources, as a student of Natural resource management, explain the policies that can be adopted for efficient use of the renewable resource. (10marks)

### Question Two

Municipal solid waste has become a serious issue to be worried of within developing countries. This is because most municipalities in the developing countries are handicap in financial and technologically in handling municipal waste management problems. Long time ago, the management of solid waste was practiced through collection, land disposal and incineration of household waste. Today, the situation has improved due to increasing awareness of the dangers of environmental degradation caused by human activities (Cole and Sinclair 2002).

- a) Define the following concepts (6marks)
  - i) Environmental degradation
  - ii) Integrated Waste Management
  - iii) Recycling
- b) As a student of Natural Resource Management, explain the causes of land degradation in your country (9marks)
- c) Describe the policies that can be used to reduce Natural resource degradation such as land degradation (10marks)

### Question Three

- a) Suppose that as result of a Dam construction project, the relevant environment benefits affect the consumer's utility function. Clearly explain how the following can be used as monetary measures of the change in utility. (15marks)
  - i) Consumer surplus
  - ii) Compensating variations
  - iii) Equivalent variation
- b) Land is efficiently utilized when the Net social benefit is utilized and this occurs at equilibrium quantity, and at equilibrium price, suppose the demand and supply of land is given as follows  $P_d = 50 - 0.5Q_d$  and  $P_s = 5 + 0.5Q_s$ . Find the maximum Net Social Benefit (NBS) (10marks)