



"Investing in Africa's Future"

**COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND
GOVERNANCE**

MEC 404: RESOURCE AND ENVIRONMENTAL ECONOMICS EXAM 2

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2018

LECTURER: G Mandewo

DURATION: (3 HRS)

INSTRUCTIONS

Choose and answer **All Questions in Section A and Only Two Questions in Section B.**

Total possible mark is 100

Start each question on a new page in your answer Booklet. Credit will be awarded for logical, systematic and neat presentations

There is a total of six (6) questions, and 6 pages (including this cover sheet). Marks for each question are in parenthesis.

Use of non-programmable calculator is permitted

Best wishes!!

**DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO BEGIN
THE EXAM**

SECTION A

1. Write brief notes on the following (Hint: ensure that the concept is explicit by using algebra and diagrams)
 - (a) Coase theorem [5 marks]
 - (b) Aquaculture [5 marks]
 - (c) Emission charges [5 marks]
 - (d) Pollutant taxonomy [5 marks]
 - (e) Resource accounting [5 marks]
2. The natural environment cannot be separated from the economy and economic activity
 - (a) Draw a well labeled diagram that shows the fundamental balance between the environment and the economy. [5 marks]
 - (b) State and relate the two laws of thermodynamics to maintenance of equilibrium between the extraction of materials and energy from the natural environment and the residuals being discharged back in the environment. [5 marks]
3. (a) What are the fundamental problems of common property resources? [5 marks]
(b) With reference to fisheries is there a difference in the biological and economic allocative efficiency? [5 marks]
4. (a) What is market failure? [5 marks]
(b) Explain why economic agents are said to be overproducing or under producing in the presence of externalities. [5 marks]
(c) What is AC Pigou's contribution in terms of solutions to externalities? [5 marks]

SECTION B

5. (a) Illustrate Cost benefit analysis that factors time and risk. [10 marks]
(b) In what way do cost effective analysis and impact analysis and improvisation that enables project appraisal when CBA is not viable? [10 marks]
6. Explicitly illustrate the efficient allocation of surface water and ground water. [20 marks]

7. (a) Oil is a depletable and non recyclable energy resource. Critically discuss the cartel problem. **[10 marks]**

(b) Explain in detail cost effective policies for non uniformly mixed surface pollutants. **[10 marks]**

10. There is market allocation of resources and economists optimize resource use. Demonstrate economic allocation for the following resource categories

- (a) Renewable resource **[5 marks]**
- (b) Depletable resource **[5 marks]**
- (c) Renewable but Depletable resource **[5 marks]**
- (d) Recyclable resource **[5 marks]**

8. Write brief notes on the following environmental concepts

- (a) 200 mile rule **[5 marks]**
- (b) EMA Act **[5 marks]**
- (c) Climate change **[5 marks]**
- (d) Recycling **[5 marks]**

9. (a) What are common property resources? **[5 marks]**

(b) The major problems of common property resources are contemporaneous externality and inter-generational externality. Explain the two concepts relating to a depletable but renewable resource such as fisheries **[5 marks]**

(c) Differentiate between biological and market allocations of a depletable resource such as fisheries. **[5 marks]**

(d) Suggest practical solutions to resolve the problem of common property resources. **[5 marks]**

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