



“Investing in Africa’s future”

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES**

**NANR 409: ENVIRONMENTAL AND NATURAL RESOURCE
ECONOMICS**

END OF SECOND SEMESTER FINAL EXAMINATIONS

APRIL 2022

LECTURER: G. MANDEWO

DURATION: 3 HOURS

INSTRUCTIONS

Answer Question number 1 and any other 3 Questions

Total possible mark is 100

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

Use of non-programmable calculator is permitted

Best wishes!!

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

- 1 (a) Answer the following, you may need to illustrate concepts diagrammatically where necessary.

- (i) Make a clear distinction between Contemporaneous externality and inter-generational externality. [5]
 - (ii) Taxes and subsidies enhance internalisation of externality. Explain how. [5]
 - (iii) What contribution does the Coase theorem have to the problem of externalities? [5]
 - (b) The following are emerging trends in environmental management;
 - (i) Environmental management agencies/authorities. [5]
 - (ii) Global warming. [5]

Write brief notes on each of the above.
 - (c) Discuss areas of mismanagement of replenishable but depletable resources such as fisheries. [5]
 - (d) Why are common property resources subjected to over-exploitation? [5]
 - (e) Suggest practical measures a community may adopt to ensure sustainable use of a common property resource. [5]
2. (a) The environment affords the economic system with resources. Economists are interested in the efficient allocation of these resources. Explain in detail how efficient allocation of the following THREE resources can be attained;
- (i) Depletable but replenishable resources [4]
 - (ii) Recyclable resources [4]
 - (iii) Depletable resources [4]
 - (iv) Common property resources [4]
 - (v) Renewable resources [4]
3. (a) What are the fundamental problems of common property resources? [4]
- (b) With reference to fisheries is there a difference in the biological and economic allocative efficiency? [8]
 - (c) The natural environment cannot be separated from the economy and economic activity
 - i. Draw a well labelled diagram that shows the fundamental balance between the environment and the economy. [4]
 - ii. 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. [4]
4. (a) Efficient allocation of surface water is not necessarily the same as the efficient allocation of ground water. Explain and give detailed illustrations. [12]

- (b) Discuss the following sources of inefficiency in the allocation of water.
- (i) Water pricing [4]
 - (ii) Restrictions of transfer [4]
5. (a) Discuss the major factors that affect recycling? [10]
- (b) Demonstrate the efficient level of recycling. [10]

End of Examination Paper