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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BSc. in Agricultural Economics and Agribusiness
Management Year IV
BSc. in Land and Water Management Year IV

COURSE CODE: AEM 405

TITLE OF PAPER: Environmental and Natural Resource
Economics

TIME ALLOWED: 2:00 Hours

INSTRUCTION: 1.ANSWER ANY FOUR QUESTIONS
2. Each question carries 25 marks.

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Question 1

a. Explain briefly the three basic criteria for an ideal resource scarcity indicator. [12 marks]

b. What is meant by a polluter-pays-principle? How can it be implemented in practice? [13 marks]

Question 2

a. What is the relevance of the natural environment to an economic system? [7 marks]

b. What is meant by pareto-efficiency and how is it useful in natural resource allocation? [6 marks]

c. Briefly explain the four main conservation strategies appropriate in resource utilization and management. [12 marks]

Question 3

a. Derive a profit maximization model from harvesting a resource. [10 marks]

b. Given the following data for a Copper mine in Zambia:

Extraction rate $(C_0) = 15$, demand growth rate $(k) = 20\%$, stock size $(S) = 10\ 000$

i.   Estimate the time to exhaustion for this mineral. [9 marks]

ii.   What policy advice would you give on the resource management? [6 marks]

Question 4

a. What is steady-state equilibrium? How is it useful in environmental and natural resource economics? [15 marks]

b. Differentiate between static and dynamic models in resource economics. [10 marks]

Question 5

Using examples, what is a 'model'? How is it useful in environmental and natural resource economics? [25 marks]