

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF APPLIED SCIENCES

DEPARTMENT OF ENVIRONMENTAL SCIENCE AND HEALTH

FINAL EXAMINATION

ENVIRONMENTAL ECONOMICS: CBA 1004

January 2013

Time Allowed: 3 hours

Total Marks: 100

INSTRUCTIONS:

Answer Question ONE from section A and any THREE Questions from Section B.
Each question carries 25 marks.

SECTION A

Question 1

The following shows a company's prospective projects:

Project	A	B	C	D	E
Capital Cost \$	20 000	30 000	50 000	80 000	100 000
Net Proceeds	-	-	-	-	-
Year 1	4 000	10 000	50 000	-	30 000
Year 2	6 000	20 000	-	-	30 000
Year 3	10 000	10 000	-	40 000	30 000
Year 4	10 000	-	-	60 000	30 000
Year 5	10 000	-	-	20 000	30 000
Year 6	-	-	-	-	-
Total Income		40 000	50 000	120 000	150 000

a) Apply the Average Rate of Return (ARR) to determine the preferred project.
(10 marks)

b) Apply the Net Present Value (NPV) at 15% interest rate per annum to decide on the preferred project.

(15 marks)

SECTION B

Question 1

Discuss how environmental economics can contribute to sustainable development in Zimbabwe.

Question 2

- (a) With the aid of diagrams, explain price elasticities of demand and supply. **(15 marks)**
- (b) Describe factors that influence these elasticities **(10 marks)**

Question 3

Explain the major causes of market failure and its effects on the environment.

Question 4

Explain 3 groups of economic incentives and elaborate on how they foster environment protection.

Question 5

- (a) With the aid of a diagram explain the relationship between the economic system and the environment. **(15 marks)**
- (b) Briefly discuss why a government should intervene in the economy and why it should not. **(10 marks)**

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SUPPLEMENTARY EXAMINATION

ENVIRONMENTAL ECONOMICS: CBA 1004

Year 2013

Time Allowed: 3 hours

Total Marks: 100

INSTRUCTIONS:

Answer any FOUR questions. Each question carries 25 marks.

Question 1

Demonstrate the way in which environmental economics bridges the gap between policy and the environment.

Question 2

- a) Giving examples, discuss the difference between microeconomics. **(15 marks)**
b) How are these two related? **(10 marks)**

Question 3

Briefly explain the following concepts:

- (a) opportunity cost, **(4 marks)**
(b) elasticity of demand, **(4 marks)**
(c) asymmetric information, **(4 marks)**
(d) tradable pollution rights, **(4 marks)**
(e) public goods and externalities and **(4 marks)**
(f) gross domestic product **(5 marks)**

Question 4

Discuss how economic incentives are used to internalize environmental externalities in an economic system.

Question 5

Table 1 below shows income received from two projects. A total of \$50 000 and \$35 000 was used to start projects A and B in two communities respectively. The money was borrowed from a lending firm at an interest rate of 15% per annum.

Year	Project A cash flow	Project B cash flow
Year 1	16 700	17 600
Year 2	17 800	16 900
Year 3	18 500	15 700

Table 1: Income table

Calculate the following:

- (a) payback period for the two projects **(4 marks)**
- (b) net present value for project B and **(8 marks)**
- (c) internal rate of return for project A. **(13 marks)**

Question 6

- (a) Giving specific examples, explain the linkages between a market economy and the environment. **(18 marks)**

- (b) Briefly explain how a negative externality can be changed into a positive externality. **(7 marks)**

End of paper