



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

SEPTEMBER –DECEMBER 2021

FACULTY OF ARTS AND SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

REGULAR PROGRAMME

ECN 412: ENVIRONMENTAL ECONOMICS

Date: DECEMBER 2021

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any TWO Questions

Q1.

(a) Outline the 5 **economic** and 5 **social** costs associated with environmental degradation. **(10 Marks)**

(b) Define and illustrate the following concepts:

i. Materials Balance Model. **(5 Marks)**

ii. Total Economic Value (TEV) of a forest. **(5 Marks)**

iii. Maintenance Cost Valuation. **(5 Marks)**

iv. Cost Benefit Analysis. **(5 Marks)**

Q2.

(a) How do humans generate pressures, consequently, affecting their own environmental utilization space? **(10 Marks)**

(b) Explain and illustrate the market/monetary valuation of natural capital and asset changes method in environmental valuation **(5 Marks)**

(c) Solutions to negative environmental externalities. **(5 Marks)**

Q3.

- (a) Explain 5 **benefits** and 5 **costs** of cleaning up a river flowing through an industrial city. **(10 Marks)**
- (b) Outline the opportunity cost of preserving a wilderness area for habitat sensitive species. **(5 Marks)**
- (c) How is the problem of market failure addressed in the context of Pareto optimality (efficient outcome)? **(5 Marks)**

Q4.

- (a) Explain and illustrate how the objectives of economic development and sustainable growth are mutually reinforcing. **(10 Marks)**
- (b) Outline any **one** of the following methods of measuring the value of non-marketed environmental goods and services. **(10 Marks)**
- i. Contingent Valuation Method (CVM).
 - ii. Travel Cost Method (TCM).
 - iii. Hedonic Regression/Pricing Method (HRM).
 - iv. Benefits Transfer Method (BTM).

Q5.

- (a) Give 5 **environmental** and 5 **economic** negative impacts associated with rapid urbanization in Africa. **(10 Marks)**
- (b) For a proposed chemical factory in Kajiado County, give 5 possible negative environmental impacts and suggest mitigation measures to deal with each. **(10 Marks)**

END