



(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**FOURTH YEAR 2ND SEMESTER
MAIN EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS &
RESOURCE MANAGEMENT**

COURSE CODE: AEC 425

COURSE TITLE: ENVIRONMENTAL ECONOMICS

DATE: 30th AUGUST 2022

TIME: 9 – 11AM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO (2) Questions

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

Q1.

a) **Pareto Efficiency and Optimality**

Assume the existence of a utopian economy with the following characteristics

- Existence of only two individuals namely:- A and B,
- Production of only two goods:- goods X and Y ,
- Use of only two inputs: - K and L.
- Utility from consumption: $U_A(X_A; Y_A)$ and $U_B(X_B; Y_B)$
- Production function: $X = f(K; L)$ and $Y = g(K; L)$

Required

- i) With the aid of a well labeled edge worth box, illustrate how production efficiency is achieved. **(7 marks)**
- ii) With the aid of a well labeled edge worth box, illustrate how consumption efficiency is achieved. **(7 marks)**
- iii) Using the edge worth box, illustrate how Pareto optimality is attained under perfect competition. **(6 marks)**

b) Explain five solutions to congestible goods **(10 marks)**

Q2.

Case study: solid waste management

Reference: Afroz, R. and Masud, M.M. (2011). Using a contingent valuation approach for improved solid waste management facility: Evidence from Kuala Lumpur, Malaysia. Journal of waste management, Vol. 31, pp 800-808.

Required

- a) One of the problems of urban environment is solid waste management as noted by Afroz and Masud (2011). Explain five major causes of increased solid waste in the city of Kuala Lumpur **(10 marks)**

- b) Explain the problem statement of this study in regard to problems associated with increased solid waste in the city. **(10 marks)**

Q3.

“Environmental degradation is a MUST”. Discuss this statement in relation to environmental economics **(20 marks)**

Q4.

Case study: Property rights

Property Rights Based Instruments attempt to clarify property rights to (environmental and natural resources) goods and services, with the aim of stimulating efficient management of such resources.

Required

- a) Explain any four property rights instruments used to manage such resource **(12 Marks)**
- b) Explain the challenges associated with provision of public goods **(8 marks)**

Q5.

Environmental Pollutants

- a) Using examples, explain the classifications of environmental pollutants in Bungoma County **(10 marks)**
- b) Explain any five environmental problems associated with urbanization in Kenya **(10 marks)**