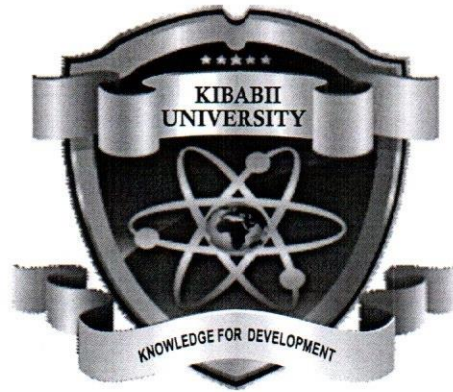


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(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR

FOURTH YEAR 2ND SEMESTER
MAIN EXAMINATIONS

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

COURSE CODE: IAE 483

COURSE TITLE: ENVIRONMENTAL ECONOMICS

DATE: 3RD AUGUST 2018

TIME: 9 – 11 AM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO (2) Questions

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

Q1.

Case study: 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

- a) With the aid of a well labeled edge worth box, illustrate how production efficiency is achieved. **(10 marks)**
- b) With the aid of a well labeled edge worth box, illustrate how consumption efficiency is achieved. **(10 marks)**
- c) Using the edge worth box, illustrate how Pareto optimality is attained under perfect competition. **(10 marks)**

Q2.

“Environmental information is necessary but not sufficient”. Discuss this statement in relation to environmental economics **(20 marks)**

Q3.

- a) Explain the economic criteria used by environmental economists for policy evaluation **(10 marks)**
- b) The following demand and supply information relates to three different markets as follows

$$QD^1 = 23 - 5p_1 + p_2 + p_3$$

$$QS^1 = 8 + 6p_1$$

$$QD^2 = 15 + p_1 - 3p_2 + 2p_3$$

$$QS^2 = -11 + 3p_2$$

$$QD^3 = 19 + p_1 + 2p_2 - 4p_3$$

$$QS^3 = -5 + 3p_3$$

Required

- i) Calculate equilibrium prices in these markets (6 Marks)
- ii) Calculate equilibrium quantities in these markets (4Marks)

Q4.

Write short notes on the following

- i) Pigouvian taxes (4 marks)
- ii) Charges (4 marks)
- iii) Refunded emission payments (4 marks)
- iv) Deposit refund system (4 marks)
- v) Public goods (4 mark)