KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021 ACADEMIC YEAR

FOURTH YEAR 2ND SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE INAGRICULTURAL ECONOMICS & RESOURCE MANAGEMENT

COURSE CODE: IAE 483
COURSE TITLE: ENVIRONMENTAL ECONOMICS
DATE: 20TH JANUARY 2022   **TIME: 2 – 4 PM**

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 ▶

Q1.

Case study: Improved air quality management

Reference: Ndambiri, H.K., Mungatana, E.D., Brouwer, R. (2015). Stated preferences for improved air quality management in the city of Nairobi, Kenya. *European journal of applied economics,* vol. **12**(2), pp 16-26.

Required

a) Explain the contingent valuation methods used to value environmental goods and services
(10 marks)

b) Identify the payment vehicle used and justify why it was used **(6 marks)**

c) Explain how motor vehicles contribute to poor air quality **(4 marks)**

d) Explain the effects of motorized emissions in the city of Nairobi **(4 marks)**

e) Explain how the payment card valuation format was used to elicit data for measuring the willingness to pay for improved air quality **(6 marks)**

Q2.

"Environmental information is necessary but not sufficient in controlling pollution". Explain this statement in relation to environmental economics. **(20 marks)**

Q3.

Case study: The theory of externalities:

Article: *Environmental and Economic Costs of Pesticide Use*

Reference: David Pimentel, H. Acquay, M. Biltonen, P. Rice, M. Silva, J. Nelson, V. Lipner, S. Giordano, A. Horowitz, M. D'Amore (1992). Environmental and Economic Costs of Pesticide Use. *American Institute of Biological Sciences*, Vol. **42**, No. 10, pp. 750-760.

Required

a) Pesticides are classified as a non- point non- source pollutants. Explain the negative externalities caused by pesticide use in the US. **(10 Marks)**

b) One of the limitations of this study is that, it is difficult to place a monetary value on some of the environmental goods. Explain the methods used to value environmental non market goods and services. **(10 Marks)**

Q4.

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.   **(7 marks)**

b) With the aid of a well labeled edge worth box, illustrate how consumption efficiency is achieved.   **(7 marks)**

c) Using the edge worth box, illustrate how Pareto optimality is attained under perfect competition.   **(6 marks)**

Q5.

a) In a quest to promote human safety and health of the riparian habitats, the Kenya national environmental management authority (NEMA), recently embarked on demolition of buildings erected on riparian zones within the city of Nairobi (www.NEMA.co.ke. *Accessed on 3.3.2019, 12.00pm*). Explain the factors affecting/hindering conservation/protection of riparian lands in Kenya.   **(10 marks)**

b) 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)