MACHAKOS UNIVERSITY

(University Examinations for 2016/2017 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF DEPARTMENT OF ENVIRONMENTAL STUDIES

FIRST SEMESTER SECOND SEMESTER EXAMINATION FOR
BACHELOR OF ENVIRONMENTAL RESOURCE CONSERVATION
BACHELOR OF SCIENCE IN COMMUNITY DEVELOPMENT

ESU 305: ENVIRONMENTAL ECONOMICS

DATE: 30/11/2016 **TIME: 2.00-4.00 PM**

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

QUESTION ONE (30 MARKS)

(a) Distinguish between the following terms:

(i) Market Failure and Government Failure (5 marks)

(ii) Normative Economics and Positive Economics (5 marks)

(iii) External Economy and External Diseconomy (5 marks)

(iv) Hedonic Property Values and Hedonic Wage Values (5 marks)

b) Assume Nairobi County government is trying to decide how many kilometres of scenic Athi River it should preserve. There are 1500 people in the community, each of whom has an identical inverse demand function given by $P = 10 - 0.2q$, where q is the number of kilometres preserved and P is the per-kilometre price he/she is willing to pay for q kilometres of preserved river.

(i) If the marginal cost of preservation is Ksh.3000 per kilometre, how many kilometres of Athi River would be preserved in an efficient allocation? (5 marks)

(ii) How large is the economic surplus? (5 marks)

QUESTION TWO (20 MARKS)

(a) Describe the main characteristics of efficient property rights structures. (5 marks)

(b) Explain why negative externalities can be described as inefficient allocations. (15 marks)

QUESTION THREE (20 MARKS)

(a) Describe the Pareto Optimality concept. (5 marks)

(b) Suppose that emissions abatement strategy for Sulphur Dioxide (SO_4) in Kenya would result in a Ksh.500 billion reduction in damages 50 years into the future. How would the maximum amount spent now to eliminate those damages change if the discount rate is 5 percent, rather than 10 percent? (15 marks)

QUESTION FOUR (20 MARKS)

(a) What is the basis for environmental valuation? (5 marks)

(b) Describe different types of values that are important in total economic valuation of the environment in Kenya. (15 marks)

QUESTION FIVE (20 MARKS)

(a) Describe the different types of potential bias in contingent valuation. (5 marks)

(b) Describe the Travel Cost Method of valuing recreational resources. (10 marks)