



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2013/2014

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR
THE DEGREE OF MASTER OF SCIENCE IN
AGRICULTURAL ECONOMICS AND RURAL
DEVELOPMENT
(HOMA BAY CAMPUS)**

AEG 861: ADVANCED RESOURCE ECONOMICS

Date: 26th July, 2014

Time: 2.00 – 5.00 p.m.

INSTRUCTIONS:

- Answer ANY FIVE questions.



TIME 3 HOURS

INSTRUCTIONS Answer Five Questions.

Question ONE is compulsory

QUESTION ONE

- a. Discuss in details the conflicts arising from the exploitation of natural resources (10 MARKS)
- b. Explain the actions that can allow the use and maintenance of a high degree of ecological integrity. Use suitable illustrations (10 MARKS)

QUESTION TWO

- a. Using a suitable illustration, describe the intertemporal fairness in sustainable use of resources between the present and the future generations. (6 MARKS)
- b. Briefly explain the effects of an increase in discount rate during period two on efficient allocation of resources between two generations. (10 MARKS)
- c. Explain the "Hartwick" rule on sustainability criterion for resources between the two generations (4 MARKS)

QUESTION THREE

- a. Kenya proven oil reserves for the year 2014 was found to be 475 billion barrels. Assuming a consumption rate of 9 million barrels and 330 business days in a year.
 - i. Determine Kenya's strategic reserve index (3 MARKS)
 - ii. Determine Kenya's exponential reserve index (3 MARKS)
 - iii. What are the limitations of SRI and ERI (3 MARKS)
- c. Describe the efficient resource allocation for constant MEC of a depletable resource assuming constant cost and availability of a substitute. (11 MARKS)

QUESTION FOUR

- a. Using a suitable illustration, explain the phases of biological growth of a forest stand (8 marks)

- b. Assuming a tree has survived for 10 years and has a volume of 692 cubic feet. Determine its mean annual increment.

(4 Marks)

- c. Explain how efficient harvesting of timber can be obtained. (4Marks)
- d. What are the shortcomings of MAI criterion (4 Marks)

QUESTION FIVE

- a. Describe the use of travel cost method as a technique of valuing the environment. (14 Marks)
- b. What are the limitations of using TCM technique? (6 MARKS)

QUESTION SIX

- a. The demand curve $D_1 P_1=100-Q$ and Demand Curve $D_2 P_2= 200-Q$. Suppose the marginal cost of public good is 240/-. Determine the efficient level of production of the public good algebraically. (6 MARKS)
- b. Suppose the marginal cost of the public good is 50/-. Determine the efficient level of production of public good algebraically. Give a graphic impression of the production . (7 MARKS)
- c. If the marginal cost of the public good is 400/-. Determine the production level of the public good. Give a graphic impression of the production. (7 MARKS)