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(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018 ACADEMIC YEAR

FOURTH YEAR 1ST SEMESTER MAIN EXAMINATIONS

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

COURSE CODE: IAE 400
COURSE TITLE: NATURAL RESOURCE MANAGEMENT

DATE: 18TH DECEMBER 2017 **TIME:** 8 AM – 10 AM

INSTRUCTIONS TO CANDIDATES

Answer Question and any other two (2) Questions.

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over

Q1.

a) Suppose the inverse demand curve function (expressed in Ksh.) of fish as a depletable resource is given as

$$P=80-q$$

$$MC=q$$

Where p=price of fish and q=is the quantity demanded or supplied, MC=Marginal cost

Required

i) How much will be supplied in static allocation efficiency **(5 Marks)**

ii) Would any other allocation be efficient? **(3 marks)**

iii) Proof your answer in (iii) above **(5 marks)**

b) Write short notes on the following concepts as used in natural resource management

i) Flow resources **(4 marks)**

ii) Stock resources **(5 marks)**

iii) Critical zone renewable **(3 marks)**

iv) Non-critical zone renewable **(3 marks)**

v) Dynamic models **(2 marks)**

Q2.

a) Explain the challenges facing resource economists in Kenya **(10 marks)**

b) Discuss the statement "Resources are dynamic with no known limits" **(10 marks)**

Q3.

a) Explain the sources of inefficiencies in pricing of water **(8 marks)**

b) Explain the remedies for the inefficiencies stated in Q3a above **(12 marks)**

Q4.

a) Given the following inverse demand curve function for a forest resource which is linear and stable over time, its inverse demand function in year *t* can be written as

$$P_t=80-0.4q_t$$

Assume that the marginal cost of extracting the resource is a constant 2 and hence marginal cost is given as,

$$MC=2$$

Where p_t =Price of the product and q=is the quantity demanded or supplied in each period,

Required

i) If 20 units are to be allocated between two periods in a dynamic efficient allocation, how much would be allocated to the first and second period respectively when the discount rate (r) is zero? **(8 Marks)**

ii) What would be the marginal user cost in each period? **(6 Marks)**

iii) What would be the efficient price in the two periods? **(6 marks)**