



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2020/2021 ACADEMIC YEAR**

**FOURTH YEAR 2ND SEMESTER**  
**SPECIAL/SUPPLEMENTARY EXAMINATIONS**

FOR THE DEGREE OF BACHELOR OF SCIENCE AGRICULTURE  
AND BIOTECHNOLOGY, BACHELOR OF SCIENCE AGRICULTURE  
ECONOMICS AND RESOURCE MANAGEMENT, BACHELOR OF  
SCIENCE AGRICULTURE EDUCATION AND EXTENSION

**COURSE CODE:** IAE 400

**COURSE TITLE:** NATURAL RESOURCE MANAGEMENT

**DATE:** 19<sup>TH</sup> JANUARY 2022

**TIME:** 2 – 4 PM

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**INSTRUCTIONS TO CANDIDATES**

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

### Question 1

a) There are three consumers of a public good. The demands for the consumers are as follows:

Consumer 1:  $P_1 = 60 - Q$

Consumer 2:  $P_2 = 100 - Q$

Consumer 3:  $P_3 = 140 - Q$

Where  $Q$  measures the number of units of the good and  $P$  is the price in dollars. The Marginal Cost of the public good is \$180. What is the economically efficient level of production of the good? Illustrate your answer on a clearly labelled graph (20 Marks)

b) Explain the indicators of resource scarcity (10 Marks)

### Question 2

Explain the challenges facing the wildlife sector in Kenya (20 Marks)

### Question 3

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

a) Flow resources (4 Marks)

b) Stock resources (4 Marks)

c) Critical zone renewable (4 Marks)

d) Non-critical zone renewable (4 Marks)

e) Externalities (4 Marks)

### Question 4

Assume that the inverse demand function for fish is  $P = 10 - 0.2q$  and the marginal cost of supplying it is \$10.

a) If 45 units are to be allocated between two periods, in a dynamic efficient allocation how much would be allocated to the first period and how much to the second period when the interest rate is 0.10? (8 Marks)

b) What would be the efficient price in the two periods? (6 Marks)

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

### Question 5

Discuss the approaches of natural resource management in your county (20 Marks)