

**UNIVERSITY OF SWAZILAND**

**MAIN EXAMINATION PAPER 2015**

**TITLE OF PAPER : BIOLOGICAL RESOURCES MANAGEMENT**

**COURSE CODE : ERM 611**

**TIME ALLOWED : THREE HOURS**

**INSTRUCTIONS :**

1. ANSWER ANY FOUR QUESTIONS
2. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS
3. WHEREVER POSSIBLE ILLUSTRATE YOUR ANSWERS WITH LARGE CLEARLY LABELLED DIAGRAMS

**SPECIAL REQUIREMENTS:**

1. CALCULATORS (CANDIDATES MAY BRING THEIR OWN)
2. GRAPH PAPER (ORDINARY)

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN  
GRANTED BY THE INVIGILATORS**

**QUESTION 1.**

How does ecological theory relate to conservation biology?

**(25 Marks)**

**QUESTION 2.**

An African country named Kambokia is very rich in flora and fauna and is socially, economically and spiritually dependent on its biodiversity. One of the animals found in this country is the kirong, *Grongus kambokiensis*, a large sized mammal species that provides food, skins for ceremonial dress as well as meat for local use and export to neighbouring countries. It is an important part of Kambokian life and has become a symbol of national unity. The kirong has a gestation period of two years and bears one calf that grows to maturity in three years. Though the country was once teeming with huge populations of kirong it is now faced with numbers that are falling at an alarming rate. The government has put in place a number of initiatives to stem this decline and sustainably use this resource, but the success of these initiatives remains to be seen.

Using the kirong as a discussion point, explore how the various aspects of sustainable use of biological resources can be met in this case. Your discussion should look at the human and ecological aspects of sustainability.

**(25 Marks)**

**QUESTION 3.**

In Swaziland the majority of species are found in protected areas. However, there are a number of species that are only found on Swazi Nation Land, some of which are Red Data List species. Swazi Nation Land suffers from unregulated grazing and utilization of habitats and biological resources. How would you ensure that the Red Data List species found on Swazi Nation Land are maintained and protected?

(25 Marks)

**QUESTION 4.**

*Parthenium hysterophorus* is an alien invasive plant species that has become widespread in Swaziland. Write out a plan to eradicate this plant from the country detailing the rationale behind each of the steps in your plan.

(25 Marks)

**QUESTION 5.**

Biological control methods have had mixed success in the cases where they have been applied. Write out a discussion of the *pros* and *cons* of the use of biological control agents.

(25 Marks)

**QUESTION 6.**

The harvesting of biological resources has an important role to play in their conservation.

Discuss fully using named examples where possible.

**(25 Marks)**