

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**FACULTY OF APPLIED SCIENCES  
DEPARTMENT OF FOREST RESOURCES AND WILDLIFE MANAGEMENT  
BACHELOR OF SCIENCE HONOURS DEGREE  
MAIN EXAMINATION**

**ANIMAL ECOLOGY: EFW 4103**

**January 2013**

**Time Allowed: 3 Hours**

**Total Marks: 100**

**INSTRUCTIONS TO CANDIDATES:**

Answer **QUESTION ONE** and any **THREE** others. Each question carries **25 marks**.

1. Citing specific examples describe the nature of disturbance caused by elephants on tropical savannah woodland ecosystem and explain how that affects animal dynamics.
2. Write short notes on the following:
  - (a) Interspecific competition **[8 marks]**
  - (b) Huchinson's concept of the ecological niche **[9 marks]**
  - (c) The 'Competitive Exclusion Principle' **[8 marks]**
3. (a) Define "resource partitioning" in relation to animal interactions **[5 marks]**  
  
(b) With named examples, discuss the various ways by which co-existing carnivores compete and minimize overlaps in resource use. **[20 marks]**
4. Using the Lotka and Volterra model of competition, explain the relationship between niche overlap and carrying capacity that leads to competitive exclusion, stable and unstable co-existence.
5. Establishment of transfrontier game parks improves the conservation of wildlife in African landscapes. Discuss.
6. Discuss how the knowledge on functional responses of predators to prey availability enable wildlife managers to manage population dynamics of the prey population.

**\*\*\*END OF PAPER\*\*\***

