

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

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

ORNITHOLOGY: EFW 2201

May 2013

Time Allowed: 3 Hours

Total Marks: 100

INSTRUCTIONS TO CANDIDATES:

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

1. With specific names (English or Latin), fully describe any FIVE species of birds encountered on the NUST campus.
2. (a) The Bab-al-Mandab strait (Yemen-Djibouti) is one of the 'gateways' into Africa for large birds on migration from Europe. It is 31 km wide. At what heights must a White Pelican and a Honey Buzzard begin their glides over the strait in order to arrive in Africa at 100 m a.s.l.? The glide polars are 13:1 and 10:1, respectively. **[8 marks]**
(b) At a gliding speed of 12 m/second and 8 m/second respectively, calculate the crossing time for the two bird species. **[10 marks]**
(c) Define wing loading and aspect ratio, with their units. **[3 marks]**
(d) What problems and dangers might this pelican face in its migration from Europe to Africa? **[4 marks]**
3. Write an essay on the types of breeding systems of birds other than the commonly encountered monogamous system.
4. (a) With fully labelled diagrams, describe the different types of feathers of a flying bird, stating the functions of each. **[15 marks]**
(b) There are two species of flight-less birds in southern Africa. Name them (English and Latin) and briefly explain their survival strategies. **[10 marks]**
5. (a) The IUCN has made a set of red list categories for living organisms. Define any five in this set. **[10 marks]**
(b) With a NAMED bird example (English only) in each case, briefly discuss internationally (including Zimbabwe) applied methods for the protection of birds. **[15 marks]**

6. Write an essay on Africa's worst pest bird, the Red-billed Quelea, highlighting its biology and control methods.

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