



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF ENVIRONMENTAL SCIENCE

DEPARTMENT OF FOREST RESOURCES AND WILDLIFE MANAGEMENT

BEHAVIOURAL ECOLOGY OF MAMMALS, BIRDS, INSECTS and ARACHNIDS  
(EFW 5203)

MSc in Eco-Tourism and Biodiversity Conservation-Semester 1 (9<sup>th</sup> intake) Examination Paper

November 2024

This examination paper consists of 2 pages

Time Allowed: 3 hours

Total Marks: 100

Special Requirements: NIL

Examiner's Name: Dr. J Maringa, Mr M. Mwanza & Ms B. T. Ngwenya

External Examiner: Prof. E. Chivandi

### INSTRUCTIONS

1. Answer **QUESTION 1** and any **THREE** others
2. Each question carries 25 marks

### MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25
6.	25
<b>TOTAL</b>	<b>100</b>

1. (a) Using named examples describe the different types of social organizations in mammals. **[10 marks]**  
(b) Explain the role of communication in mammals and describe how carnivores communicate. **[15 marks]**
2. (b) Giving named examples of mammalian species, explain the mechanisms of migration. **[13 marks]**  
(b) Discuss the ecological and economic significance of the migratory behaviour. **[12 marks]**
3. (a) Describe the mechanisms of avian navigation during migration, including the roles of celestial navigation, magnetic navigation, and landmark navigation in guiding birds during their long- distance journeys. **[15 marks]**  
(c) Provide the examples of species that utilise these mechanisms and explain the ecological and evolutionary implications. **[10 marks]**
4. (a) Giving specific examples, compare and contrast the mating systems and reproductive strategies of three different avian species found in Zimbabwe. **[15 marks]**  
(b) Highlight how these strategies influence avian population dynamics and conservation needs and the implications for conservation efforts. **[10 marks]**
5. Citing specific examples of insects, present possible methods or techniques you can apply in an attempt to manage their populations to your benefit in both the wild and human modified ecosystems through the manipulation of their behavioural traits.
6. With reference to a named social insect species:  
(a) outline its social organisation. **[10 marks]**  
(b) describe the modes of intraspecific communication. **[15 marks]**