

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

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

VERTEBRATE POPULATION DYNAMICS: EFW 2205

May 2014

Time Allowed: 3 Hours

Total Marks: 100

INSTRUCTIONS TO CANDIDATES:

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

1. (a) Describe the procedure for conducting aerial transect sampling of large mammals at the Hwange National Park. **[15 marks]**

(b) Distinguish between aerial quadrat and block sampling techniques used in counting large mammals. **[10 marks]**
2. (a) Explain how oestrus influences population growth in vertebrates. **[10 marks]**

(b) Describe the MacArthur & Wilson (1967) selection strategies in mammals. **[15 marks]**
3. Show how the logistic growth model can be used in implementing a sustainable harvesting programme in a population of a named ungulate species.
4. Discuss the factors that regulate vertebrate populations in semi-arid savanna ecosystems.
5. (a) What are the different mating systems recognised in vertebrates? **[10 marks]**

(b) Discuss the importance of studying sex ratios in wildlife populations. **[15 marks]**
6. (a) Describe the very high frequency (VHF) wildlife radio tracking method. **[10 marks]**

(b) Compare and contrast satellite and global positioning system (GPS) wildlife tracking methods. **[15 marks]**

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