



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**UNIVERSITY VILLAGE, PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE**  
**EXPRESS WAY, JABI - ABUJA.**  
**FACULTY OF SCIENCE**  
**Department of Biological Sciences**  
**2025\_2 EXAMINATIONS**

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**BIO 313: ANIMAL ECOLOGY**

**TIME: 2Hours**

**CREDIT UNITS: 2**

**INSTRUCTION: Answer THREE (3) questions in all. Question 1 is compulsory**

1a: Define an ecosystem and explain the components and functions of an ecosystem.(10 marks)

1b: Explain how biotic factors influence animal population size, providing specific examples. (10 marks)

1c: Describe how abiotic factors influence animal population dynamics, providing specific examples. (10 marks)

**(TOTAL 30 MARKS)**

2a: Explain the concept of population cycles in a predator-prey system, using the Lotka-Volterra model as a basis. (10 marks)

2b: Discuss the major threats to African Bat populations and their potential impact on ecosystems. (10 marks)

**(TOTAL 20 MARKS)**

3a: Explain the factors that influence the growth rate of animal populations, providing specific examples. (10 marks)

3b: With relevant examples, explain how population growth rates are calculated and what factors can influence these rates. (10 marks)

**(TOTAL 20 MARKS)**

4a: Discuss the adaptations of aquatic animals to their environments, providing specific examples. (10 marks)

4b: Discuss the ecological roles of terrestrial animals in maintaining ecosystem balance, providing specific examples. (10 marks)

**(TOTAL 20 MARKS)**

5a: Explain the concept of competition in animal ecology and distinguish between intraspecific and interspecific competition, providing appropriate examples. (10 marks)

5b: Discuss how key-factor analysis can be used to address conservation issues, including the steps involved and potential challenges. (10 marks)

**(TOTAL 20 MARKS)**