CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN WILDLIFE ENTERPRISE AND MANAGEMENT

WIEM 311: VERTEBRATE POPULATION DYNAMICS

STREAMS: BSC WIEM Y3S1 **TIME: 2 HOURS**

DAY/DATE: TUESDAY 11/12/2018 **8.30 A.M. – 10.30 A.M.**

INSTRUCTIONS:

- **Answer all questions in section A and any two in section B**
- **Section A carries 30 marks and section B 40 marks**

SECTION A (30 MARKS)

Q1. Explain the following terms

(a) Hemi-population (0.5 marks)

(b) Ecological equivalence (0.5 marks)

(c) Cosmopolitan species (0.5 marks)

(d) Herbivory (0.5 marks)

(e) Population dynamics (1 mark)

Q2. Using a specific example, briefly explain the importance of migration in species persistence. (4 marks)

Q3. Briefly explain how the per capita rate of increase (r) influences population growth. (4 marks)

Q4. State the advantages and disadvantages of clumped distribution in wildlife populations. (4 marks)

Q5. Briefly discuss five stochastic events and their probable impact on wildlife populations. (5 marks)

Q6. Briefly explain source sink dynamics in the management of meta-populations. (4 marks)

Q7. Distinguish between the following terms

(a) Fundamental niche and realized niche

(b) Contest competition and scramble competition

(c) Niche shift and character displacement (6 marks)

SECTION B (40 MARKS)

Q8. Discuss the effect of competition on population growth. (20 marks)

Q9. (a) Given that r = 0.20 and N = 1000. Calculate the population size from the initial population up to the 10^{th} generation. (10 marks)

(b) Discuss exponential and geometric growth in density independent population models. (10 marks)

Q10. Discuss the factors that influence wildlife population growth. (20 marks)
