CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

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

WIEM 311: VERTEBRATES POPULATION DYNAMICS

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

DAY/DATE: MONDAY 4/12/2017   **11.30 A.M – 1.30 P.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(30MARKS)

1.   Define the following terms.   [4marks]

   (a) Natality

   (b) Fecundity

   (c) Death rate

   (d) Population ecology

2.   Describe how the per capita rate of increase (r) influences population growth. [4marks]

3.   State the advantages and disadvantages of clumped distribution in wildlife populations.
                [4marks]

4.   Citing a specific example briefly explain the importance of migration in species persistence.   [4marks]

5.   Describe the application of source sink dynamics in the management of wildlife populations.   [4marks]

6.   Briefly explain the four categories of population models .   [4marks]

7.   Distinguish between the following terms.   [6marks]

        (a) Fundamental niche and realized niche

        (b) Contest competition and scramble competition

        (c) Niche shift and character displacement

SECTION B (40 MARKS)

8.   Discuss the factors that influence wildlife population growth.   [20marks]

9.   (a) Given that r = 0.05 and N= 1000. Calculate the population size from the initial
        population up to the 10th generation.   [12marks]

        (b) Discuss the underlying assumptions in the logistic growth curve.   [8marks]

10.   (a) Calculate the blank columns in the life table below.   [10marks]

x	nx	lx	dx	qx	ex	Lx	Tx
0	128		41			107.5	
1	87		26			74	
2	61		18			52	
3	43		12			37	
4	31		8			27	
5	23		5			20.5	
6	18		4			16	
7	14		3			12.5	
8	11		2			10	
9	9		1			8.5	
10	8		-			-	

        (b) Draw a survivorship curve from the above table and name a species likely to show it
        giving reasons.   [5marks]

        (c) Discuss the various types of data used in the construction of a life table. [5marks]