CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DOCTOR OF PHILOSOPHY DEGREE IN WILDLIFE MANAGEMENT

WIEM 951: QUANTITATIVE RESEARCH AND ANALYSIS

STREAMS: Ph.D (WIEM) Y1S1

TIME: 3 HOURS

DAY/DATE: TUESDAY 6 /07/ 2021 **2.30 PM – 5.30 PM**

INSTRUCTIONS:

- Answer ALL Questions in Section A and any other TWO Questions in Section B.
- Do not write anything on the question paper

SECTION A: ANSWER ALL QUESTIONS (20 MARKS)

1. Explain the utility of any TWO analytical scales used in wildlife studies. [5 Marks]
2. Examine any two quantitative data presentation techniques that you can apply in wildlife migration analysis. [5 Marks]
3. State the multiple regression model and explain its respective components. [5 Marks]
4. Examine applicability of the one-way analysis of variance (ANOVA) test in wildlife management studies. [5 Marks]

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

5. Critically explain the considerations you'd be expected to make in the process of designing an impact study in climate change implications on wildlife management. [20 Marks]
6. Table 1. Distribution of wildlife numbers involved in incursions at different times of year 2020 in 106 farms neighboring Mt.Kenya Forest and National Park.

Number of animals involved in an incursions	Frequency
10 - 19	10
20 – 29	10
30 - 39	20
40 - 49	15
50 - 59	15
60 – 69	20
70 – 79	10
80 - 89	10
80 - 89	5
90 - 99	1

Using the data shown in table 2:-

a) Draw a frequency polygon to represent the data shown in table 1. [6 Marks]

b) Calculate the mean and the mean deviation of the trends in animal incursions in farms in the neighborhoods of Mt.Kenya Forest and National Park. [6 Marks]

c) Calculate the variance and standard deviation of the data distribution and comment on your findings mean, in respect of human-wildlife conflict occurrence in the neighborhoods of Mt. Kenya Forest and National Park. [8 Marks]

7. The Senior warden of the Tsavo East National Park decided to study the relationship between the cost of animal treatment (in Ksh) and related medical supply volume. His objective was to predict the required medical supply volumes from the predetermined cost of animal treatment.

Table 2. The cost of animals treatment and corresponding medical supply volumes.

Observation	Amount spent on animal treatment (Ksh in 000)	Medical Supply (100 units)
1	20	10
2	10	5
3	5	6
4	10	10
5	4	6
6	10	14
7	15	10
8	4	15
9	6	10
10	1	18
11	10	5
12	8	9

a. Using the Pearson's product moment correlation coefficient method, compute the relationship between the two variables. [10 Marks]

b. Interpret the usefulness of the result in (a) in relation to the cost of animal treatment and the volume of medical supplies. [4 Marks]

c. Discuss the pros and cons of using this correlation method in the analysis of medical supply requirements in relation to the costs of treating affected animals in Tsavo National park. [6 Marks]

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