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(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY**

**MAIN CAMPUS  
MAIN EXAMINATIONS**

**UNIVERSITY EXAMINATIONS (REGULAR)  
2021/2022 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF MSc. IN: ANIMAL PRODUCTION AND RELATED  
OPTIONS**

**COURSE CODE: AAP 811**

**COURSE TITLE: RESEARCH EXPERIMENTAL DESIGNS AND  
STATISTICAL COMPUTING**

**DATE: 5.7.22**

**TIME: 2-5**

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**INSTRUCTIONS TO CANDIDATES**

**Answer ALL questions in section A and ANY TWO questions in section B**

**TIME: 2 Hours**

**Total marks=70**

*MMUST observes ZERO tolerance to examination cheating*

This Paper Consists of 2 Printed Pages. Please Turn Over.

**SECTION A: ANSWER ALL QUESTIONS(40 Marks)**

**QUESTION ONE**

Briefly discuss the following terms are often used in statistical aspects of research:

- a) Sampling methods (2 Marks)
- b) Parameter (2 Marks)
- c) Confoundment of effects of factors, (2 Marks)
- d) Statistical significance (2 Marks)
- e) Precision of estimates. (2 Marks)

**QUESTION TWO**

In the context of research proposal writing discuss briefly

- i) Reasons for conducting literature review before writing a research project proposal (8 Marks)
- ii) The qualities of a good statement of a research problem (7 Marks)

**QUESTION THREE**

The analysis of variance and the Pearson correlation analysis are parametric statistical analysis methods commonly used in agricultural research studies. Briefly discuss the principles and application of:

- a) Analysis of variance (7 Marks)
- b) Pearson correlation (8 Marks)

**SECTION B ANSWER ANY TWO QUESTIONS(20 Marks)**

**QUESTION FOUR**

List any three research designs and discuss each of them in terms of its:

- a) Internal validity. (5 Marks)
- b) External valid. (5 Marks)
- c) Social validity. (5 Marks)

**QUESTION FIVE**

Nakuru County, Kenya has confirmed that a newly introduced avocado fruit tree is preferred by dairy farmers because when its leaves are fed to their lactating cows it causes an increase in milk quality and yield. Outline the steps a research scientist at the Njoro Kenya Agricultural and Livestock Research Organization station will follow to confirm the above observed impact on lactating dairy cows. (15 Marks)

**QUESTION SIX**

Compare and contrast a Conceptual framework and Theoretical framework in the writing of a research proposal (15 Marks)