

NATIONAL UNIVERSITY OF LESOTHO
FACULTY OF AGRICULTURE
DEPARTMENT ANIMAL SCIENCE
ANS 3501: ANIMAL EXPERIMENTATION & RESEARCH TECHNIQUES
FIRST SEMESTER FINAL EXAMINATION

JANUARY 2024

MARKS: 100

TIME: 3 HOURS

Instructions:

- Answer all questions
- Begin each question on a new page

QUESTION 1

Differentiate between the following terms as applied in research:

- a. Fundamental research vs Applied research
- b. Independent variable vs Extraneous variable
- c. Randomization vs Replication
- d. Experimental units vs Sampling units
- e. Absolute experiment vs Comparative experiment
- f. Cross-sectional survey vs Longitudinal survey
- g. Treatment vs Control [28]

QUESTION 2

- a) Experimental research study is an important study for use in Animal Science. Describe the most important principles of experimental research and show their significance [15]
- b) The success of data collection process is highly influenced by the choice of proper design of study to minimize errors. Explain any four (4) possible sources of error in taking measurements in research. [16]
- c) Collection of accurate and timely data is very important towards achieving study objectives, and a number of tools can therefore be used for this purpose. Discuss the basic principles of the following data collection tools, and also show the pros and cons for using each of them in agricultural research.
 - Focus group
 - Experiment
 - Questionnaire
 - Interview
 - Observation [15]

QUESTION 3

- a) State at least six (6) important features of a research design [6]
- b) A number of factors can influence the productivity of poultry farming. As an Animal Science student, use an appropriate formal experimental design with **clearly illustrated experimental layout** to assist a poultry farmer to evaluate the effect of a newly developed diet on the performance of his broilers in order to make proper recommendations for future feeding of his birds. [20]