

NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF AGRICULTURE

B.Sc. AGRICULTURE

AGR 3502: RESEARCH METHODOLOGY

JANUARY 2023

MARKS: 100

TIME: 3HRS

INSTRUCTIONS: ANSWER ALL THE QUESTIONS

QUESTION 1**[15marks]**

Outline the procedure followed in conducting agricultural research. (15)

QUESTION 2**[20 marks]**

Distinguish the following terms;

- a) research methods and methodology (2)
- b) descriptive and analytical research (2)
- c) applied, basic and adaptive research (3)
- d) quantitative and qualitative research (2)
- e) conceptual and empirical research (3)
- f) inductive, deductive and syllogistic reasoning (3)
- g) Structured, semi-structured and unstructured questionnaire (3)
- h) replication, treatment and parameter (3)

QUESTION 3**[20 marks]**

Perform analysis of variance with data collected from the field where Randomized

Complete Block Design was applied.

Cultivars	Sorghum (yield/ ton)		
	Rep 1	Rep 2	Rep 3
PAN 6413	1.5	1.7	1.4
PAN 5681	3.9	4.2	3.8
Phi 324	2.2	2.7	2.9
CG4141	2.5	2.6	2.4
SNK 465	3.1	3.3	3.2
Cap	4.0	4.2	4.1

Show calculations

QUESTION 4

[15 marks]

- a) Transformation of data (5)
- b) Correlation of variables (5)
- c) Linear regression (5)
- d) Analysis of variance (5)
- e) Objectives of research (5)
- f) Motivation for conducting a research (5)

QUESTION 5

[15 marks]

Explain sampling techniques (random and non-random) used for carrying out a survey research (15)