

NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF AGRICULTURE

B.Sc. AGRICULTURE

CPS: 316 RESEARCH METHODOLOGY

DECEMBER 2018

MARKS: 100

TIME: 3HRS

INSTRUCTIONS: ANSWER ALL THE QUESTIONS

QUESTION 1 [30 marks]

State clearly the following;

- a) Objectives of conducting the research (7)
- b) Motivation behind the research (8)
- c) Significance of research (5)
- d) Properties of quality data (10)

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, futuristic and empirical research (3)
- f) inductive, deductive and syllogistic reasoning (3)
- g) reliability and validity of data (2)
- h) replication, randomization and control in experimental design (3)

QUESTION 3 [20 marks]

Explain the importance of the following in research;

- a) literature review (5)
- b) materials and methods (5)
- c) statement of the problem (5)
- d) hypothesis (5)

QUESTION 4 [20 marks]

Perform analysis of variance with data given below and indicate if there is a significant difference in replications and treatments. Use least significant difference to interpret the results.

Cultivars	Yield of maize per 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

QUESTION 5 [10 marks]

Calculate correlation coefficient between fertilizer rate and yield, and interpret it accordingly.

Entry	Fertilizer (kg/ha)	Yield /ton
1	0	2.3
2	10	2.7
3	15	2.9
4	20	2.8
5	25	2.6
6	30	3.0
7	35	3.4
8	40	3.2
9	45	3.1
10	50	3.3
11	55	3.5