



MACHAKOS UNIVERSITY
University Examinations for 2022/2023 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES
DEPARTMENT OF AGRICULTURAL SCIENCES
SECOND YEAR SECOND SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)
AEE 430: STATISTICAL AND RESEARCH METHODS IN AGED & EXT

TIME:

DATE:

INSTRUCTION:

Answer question one and any other two

QUESTION ONE: COMPULSORY (30 MARKS)

- a) Differentiate between the following terms
- b) A parameter and a statistic (2 marks)
- c) Priori method and method of authority (4 marks)
- d) Probability and non-probability sampling methods (4 marks)
- e) Describe six qualities of a well stated research hypothesis (3 marks)
- f) Explain four reasons for conducting literature review when writing a research proposal (4 marks)
- g) Explain four advantages of using a sample in a research study (4 marks)
- h) Describe five techniques that are used to organize or classify data in a research study (5 marks)
- i) Below are three sets of data. Find out the set with the largest standard deviation
 - i. 12,14,16, 18,20
 - ii. 20,19,18,17,16,55,14,13,12,
 - iii. 12,16,22,60 (5 marks)

QUESTION TWO (20 MARKS)

a) Explain the meaning of data coding (2 marks)

b) Prepare a data coding scheme for the questionnaire items below 1-3 (18 marks)

QUESTIONNAIRE ITEM 1

What is your gender? 1. Male 2. Female

QUESTIONNAIRE ITEM 2.

What is your age group

1. Less than 15years 2. 16-20 years 3. 21-25years 4. over 25years

QUESTIONNAIRE ITEM 3.

How was your performance in agriculture last term

1. Excellent 2. Very Good 3. Good 4. Fair 5. Poor

QUESTION THREE (20 MARKS)

The Table below shows students' scores in agriculture subject for their mock and KNEC exams

Serial Number	Student	Mock Exam	KNEC Exam
1	A	40	44
2	B	48	56
3	C	70	62
4	D	75	70
5	E	53	52
6	F	60	68
7	G	68	62
8	H	82	76
9	I	94	58
10	J	90	82

Calculate the correlation coefficient between the mock exam and the KNEC exam given that

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Show your working

QUESTION FOUR (20 MARKS)

- a) Giving one example in each case, explain five inconsistencies that are checked for during editing of research data (10 marks)
- b) Describe the components of the main body of a research proposal indicating the importance of each section (10 marks)

QUESTION FIVE (20 MARKS)

- a) Explain four ways of classifying research variables by suitable scales of measurement (8 marks)
- b) Describe three possible criteria that is used in classifying types of research (12 marks)