



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

FOURTH YEAR SPECIAL/ SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

**AEE 430: STATISTICAL AND RESEARCH METHODS IN AGRICULTURAL
EDUCATION AND EXTENSION**

DATE: 26/3/2021

TIME: 2.00-4.00 PM

INSTRUCTIONS:

Answer question one and any other two questions

QUESTION ONE

- a) Differentiate between the following as used in research methods
- i. independent variable and dependent variable (4 marks)
 - ii. Continuous variable and discrete variable (4 marks)
- b) Differentiate between the following
- i. Hypothesis and research question (4 marks)
 - ii. Scope of the study and limitation of the study (4 marks)
 - iii. Interval scale and ratio scales of measurements (4 marks)
 - iv. Class limit and class boundary (4 marks)
 - v. Size of class interval and class mark (4 marks)
- c) In an agriculture test, students obtained marks ranging from 60% to 74%. The frequency distribution of the marks is as shown in the table below.

Student score	Frequency
60-62	6
63-65	18
66-68	42
69-71	24
72-74	10

Calculate the

- i. Mean mark of the class (6 marks)
- ii. Variance of the scores (4 marks)
- iii. Standard deviation of the scores (2 marks)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

QUESTION TWO

- a) State the meaning of literature review (2 marks)
- b) Describe the components of a research proposal in the following sections
 - i. Appendices (8 marks)
 - ii. Research methodology (10 marks)

QUESTION THREE

- a) Describe four designs that can be used to conduct research (10 marks)
- b) The following table shows class intervals of farmers' ages collected during a survey.

Farmer's age	Frequency
60-62	5
63-65	18
66-68	42
69-71	27
72-74	8

Draw a histogram and a cumulative frequency curve that can be used to present this data graphically (10 marks)

QUESTION FOUR

- a) Explain THREE sources of research problems (6 marks)
- b) Giving one example in each case, describe the three ways of classifying research (14 marks)

QUESTION FIVE

- a) State five NON- RANDOM sampling methods used in research methodology (5 marks)
- b) Using one example in each case, describe the data processing in research (15 marks)