MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

ANS 241/KRM 204: QUANTITATIVE GENETICS AND ANIMAL BREEDING

DATE: 23/9/2019 **TIME: 8.30-10.30 AM**

INSTRUCTIONS;

Answer question one and two other questions

QUESTION ONE

a) Express the meaning of quantitative genetics and outline its influence in animal breeding (5 marks)

b) Describe five characteristics of quantitative inheritance (5 marks)

c) Differentiate between heritability and repeatability and state the importance of heritability in animal breeding (5 marks)

d) Describe genetic correlation and its importance in animal breeding (5 marks)

e) Give the meaning of outbreeding and explain its importance in animal production (5 marks)

f) Outline five signs that show a cow is in heat, hence need for AI service (5 marks)

QUESTION TWO (20 MARKS)

a) Enumerate five benefits of keeping livestock records (10 marks)

b) Explain in detail two factors influencing profitability in animal production (10 marks)

QUESTION THREE (20 MARKS)

a) Describe the following factors in animal breeding and their effect in animal breeding programs

i. Inbreeding (3 marks)

ii. cross breeding (2 marks)

iii. linebreeding (2 marks)

iv. outcrossing (3 marks)

b) i. Explain the application of Bateman's Principle in predicting mating success in animals (2 marks)

ii. State three reasons why a female may prefer certain males for mating (3 marks)

iii. Express the purpose of animal selection and further outline three methods of animal selection (5 marks)

QUESTION FOUR (20 MARKS)

a) In a tabular form, differentiate between quantitative genetics and qualitative genetics (10 marks)

b) An animal breeder wants to select the best animals for breeding. Describe the criteria that the breeder would consider for selection (10 marks)

QUESTION FIVE (20 MARKS)

a) Describe the methods that are available for heat detection by farmers stating the accuracy of each and applicability in farm set ups (10 marks)

b) Outline any five breeding technology methods that are available for a farmer, and outline the advantages and disadvantage s for each method (10 marks)