



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 AEE

KRM 204: PRINCIPLES OF ANIMAL BREEDING

DATE: 23/7/2019

TIME: 2.00-4.00 PM

INSTRUCTIONS:

Answer ALL questions in SECTION A and any other TWO questions in SECTION B

SECTION A: 30 MARKS

QUESTION ONE:

- a)
 - i Explain Mendels Laws of inheritance (3 marks)
 - ii With the aid of illustrations demonstrate crosses between polled and horned animals and state which of Mendels Law's is demonstrated (3 marks)
- b) Explain the following terminologies
 - i. Dominance (1 mark)
 - ii. Sex linked genes (2 marks)
 - iii. Phenotype (1 mark)
 - iv. Homozygote (1 mark)
- c)
 - i Explain the meaning of variation (1 mark)
 - ii Name the sources of variation in animals (2 marks)
 - iii Explain the components of the phenotypic and genotypic variation (4 marks)
- d) Define the following
 - i. Inbreeding (2 marks)
 - ii. Heterosis (2 marks)

iii. Inbreeding depression (2 marks)

e) Explain **THREE** disadvantages of Inbreeding (6 marks)

SECTION B: 40 MARKS

QUESTION TWO

- a) Distinguish between natural and artificial selection (4 marks)
- b) Describe the **FOUR** methods used for selection of animals with desirable traits (16 marks)

QUESTION THREE

- a) Explain **THREE** causes of change in gene frequency in populations (4 marks)
- b) Explain the characteristics of the following domestic fowl breeds
- i. Layer breeds (5 marks)
 - ii. Dual purpose (6 marks)

QUESTION FOUR

- a) Explain the major constraints for the improvement of livestock production in Kenya under Breeding programmes and genetic gain (10 marks)
- b) Explain the biotechnological gains in animal genetic improvement through
- i. Artificial insemination (6 marks)
 - ii. Multiple ovulation and embryo transfer (4 marks)

QUESTION FIVE

- a) Explain the meaning of Maternal environment (5 marks)
- b) Explain the reasons for cross breeding (15 marks)