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 terminologiess

      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)

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     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 desireable 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)