



MACHAKOS UNIVERSITY

University Examinations for 2016/2017 Academic Year

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN AGRICULTURAL

EDUCATION AND EXTENSION

SPECIAL EXAMINATION

KRM 204: PRINCIPLES OF ANIMAL BREEDING

DATE:

TIME:

INSTRUCTIONS

Answer Question One and Any Other Two Questions

QUESTION ONE

- a) Distinguish between
 - i. Qualitative and quantitative traits (2 marks)
 - ii. Mitosis and meiosis (2 marks)
- b) Explain the following terminologies
 - i. Heterosis (2 marks)
 - ii. Incomplete dominance (2 marks)
 - iii. Genetic death (2 marks)
- c) Explain **TWO** causes of variation in livestock. (4 marks)
- d) Explain the **TWO** negative attributes of inbreeding in livestock. (4 marks)
- e) Explain **FOUR** methods of estimating the breeding value of an animal. (4 marks)
- f) Explain the difference between gene frequency and genotype frequency. (4 marks)
- g) Explain **FOUR** advantages of artificial insemination. (4 marks)

SECTION B: ANSWER QUESTION ONE AND ANY TWO QUESTIONS

QUESTION TWO

- a) In a population of 800 cattle the horned animals were 200.
- i) Calculate the frequency of the polled gene trait in the population. (2 marks)
 - ii) If the individuals homozygous for the polled genes are 200. Calculate the genotypic frequency for the heterozygous individuals. (3 marks)
- b) Explain **FIVE** factors that may change gene frequencies in a population (15 marks)

QUESTION THREE

- a) Explain **Five** constraints facing livestock breeding programs in Kenya (10 marks)
- b) Explain **FIVE** reasons for cross breeding (10 marks)

QUESTION FOUR

- a) Explain Mendel's laws of inheritance. (10 marks)
- b) Partition the genotype and explain the respective components (10 marks)

QUESTION FIVE

- a) Explain **TWO** methods used in multiple trait selection (10 marks)
- b) Explain **FIVE** reasons for cross breeding (10 marks)