



NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, Nnamdi Azikiwe Expressway, Plot 91, Cadastral Zone, Jabi, Abuja
Faculty of Agricultural Sciences
First Semester POP Exam (September, 2020_1)

Course Title: Elementary Topics in Animal Breeding

Course Code: ANP 307

Credit Unit: 2

Time Allowed: .2 Hours

INSTRUCTION:

Answer Compulsory question 1 (25 marks) and any 3 questions (15 marks each)

Question One

- a) Define the following terms:
- Gene
 - Allele
 - Genotype
 - Phenotype
 - Dominant
 - Recessive
 - Hybrid.
 - Homozygote
 - Heterozygote **9 marks**
- b) Highlight three (3) reasons why Robert Bakewell is considered the founder of systematic modern breeding **3 marks**
- c) Outline five (5) challenges in breeding animals for disease resistance **10 marks**
- d) State three (3) advantages of breeding animals for disease resistance **3 marks**

Question Two

- a) Define Genetics and Punnet squares. **2 marks**
- b) State three (3) reasons why Mendel's research work is unique compared to the other early theories. **3 marks**
- c) State four (4) the implications of Mendel's work. **4 marks**
- d) Outline three (3) differences between Monohybrid and Dihybrid crosses. **6 marks**

Question Three

- a) Mention five (5) differences between the X-Y and X-0 systems of sex determination? **10 marks**
- b) Briefly explain five (5) ways to manage lethal genes in a dairy herd. **5 marks**

Question Four

- a) Give six (6) differences between quantitative and qualitative traits. **12 marks**
- b) Define the following terms mean, variance and standard deviation. **3 marks**

Question Five

- a) Define segregation. **1 mark**
- b) Give the meaning of penetrance and expressivity. **4 marks**
- c) Explain the two (2) methods of estimating heritability. **6 marks**
- d) State two (2) properties of heritability. **4 marks**

Question Six

- a) What is the implication of high and low repeatability in animal breeding? **4 marks**
- b) State the explanation of inheritance by
 - i. Hippocrates
 - ii. Aeschylus,
 - iii. Microscopist Anton van Leeuwenhoek **6 marks**
- c) Explain Genetic Source of Variation **5 marks**