



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**FACULTY OF AGRICULTURAL SCIENCES**  
**DEPARTMENT OF ANIMAL SCIENCE AND FISHERIES**  
**2025\_2 EXAMINATIONS**

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**Course Title: Elementary Topics in Animal Breeding**

**Course Code: ANP 307**

**Credit Unit: 2**

**Total Score: 70 Marks**

**Time Allowed: 2 Hours**

**INSTRUCTION:**

**Answer question 1 (30 marks) and any 2 (two) questions (20 marks each)**

- 1a) Bala a livestock owner wants to know more about animal breeding, enlighten him on five (5) major areas he can apply breeding programmes in his business. (5 marks)
- b) What are the vital points to note when breeding for increased production (2 marks)
- c) What are the drawbacks a farmer will likely face when breeding for increased production (3 marks)
- d) Illustrate the monohybrid cross between a heterozygote tall goat (Tt) and a homozygote tall goat (TT) and indicate the phenotype ratio of the F<sub>2</sub> generation (11 marks).
- e) In your own words give the meaning of Over dominance gene expression and complimentary genes (5 marks)
- f) Robert Bakewell is known as the father of systematic animal breeding. What is his contribution? (4 marks)
- 2a) Distinguish between the following systems of sex determination X-Y and X-0. (10 marks)
- b) How will you differentiate between lethal and semi lethal genes (6 marks)
- c) Variation is normally observed among herd of livestock. In your own words explain the Genetic source of variation (4marks).
- 3a) Using a table sort the following traits into quantitative or qualitative: presence of horn in cattle, coat colour, body weight, egg production in chicken, litter size in goats, milk fat, presence of beard in goats, milk yield (10 marks)
- b) Heritability expresses that part of the superiority of the parents which on an average is passed on to the offspring. Explain the two (2) main methods of measuring heritability. (6 marks)
- c) Distinguish between dominant and recessive genes (4 marks)
- 4a) During your industrial attachment in a livestock farm, you observed that individuals of the same breed showed differences for the same trait. Discuss the reasons for this observation and differentiate the two types of this phenomena we have. (12 marks)
- b) Discuss concisely the two (2) basic laws of inheritance put forward by Mendel. (8 marks)