



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION
SCHOOL OF AGRICULTURAL SCIENCES

COURSE CODE: ANP307

COURSE TITLE: ELEMENTARY TOPICS IN ANIMAL BREEDING (2 Units)

DURATION: 2 HRS

INSTRUCTION: ANSWER ANY 4 QUESTIONS

1. (a) Define the following terms in animal breeding
(12 marks)
 - (i) Gene
 - (ii) Alleles
 - (iii) Locus
 - (iv) Dominance
 - (v) Hybrid
 - (vi) Segregation
- (b) Briefly explain the concept of animal breeding (3 marks)
- (c) State six basic objectives of animal breeding
(6 marks)
- (d) Give four reasons why Bakewell is considered the founder of modern systematic animal breeding
(4 marks)
2. (a) Define the following concepts (6 marks)
 - (i) Heritability
 - (ii) Selection differential
 - (iii) Generation interval
- (b) Clearly state the major principle of animal breeding for increased productivity
(3 marks)
- (c) Concisely explain 4 major problems associated with the principle stated (8 marks)

(d) Describe the two major approaches involved in breeding animals for disease resistance
(8 marks)

3. (a) State three requirements necessary to carry out marked-assisted selection (MAS) in practice
(6 marks)
- (b) Highlight five challenges of breeding animals for disease resistance
(10 marks)
- (c) What was the postulate of Aristotle about heredity?
(2 marks)
- (d) State four submissions from Mendellian experiment
(4 marks)
- (e) State three reasons that made Mendel's research work unique compared to other early theories
(3 marks)
4. (a) State the Mendellian laws of heredity (5 marks)
- (b) Differentiate between the following concepts
(20 marks)
- i. Complete and incomplete dominance
 - ii. Over-dominance and Co-dominance
 - iii. Epistasis and Pleiotropy
 - iv. Sex-limited genes and sex-linked traits
5. (a) List five characteristics of quantitative inheritances
(5 marks)
- (b) With relevant examples explain four sex determination systems
(20 marks)
6. (a) Define the following terms (8 marks)
- i. Additive gene
 - ii. Complementary gene
 - iii. Penetrance
 - iv. Expressivity
- (b) State three advantages of phenotypic variations due to environment
(3 marks)
- (c) Highlight five ways of controlling lethal genes
(4 marks)

(d) In tabular form, give five contrast between quantitative and qualitative traits
(10 marks)