



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi, Abuja
Faculty of Agricultural Sciences
October/November, 2016

COURSE CODE: ANP 307
COURSE TITLE: ELEMENTARY TOPICS IN ANIMAL BREEDING (2 Units)
DURATION: 2 HRS

ANSWER ANY 4 QUESTIONS

1. (a) What is genetics?
(b) Briefly explain the application of genetic principles in animal breeding
(c) Define the following terms in relation to animal breeding
 - (i) Genotype
 - (ii) Phenotype
 - (iii) Heterozygous
 - (iv) Homozygous
 - (v) Dominant trait
 - (vi) Recessive trait
(d) State five implications of Mendel's work on heredity
2. (a) Discuss the following approaches in relation to disease resistance (
 - i. Phenotypic selection approach
 - ii. Genomic approach
(b) Identify five challenges in breeding animals for disease resistance
(c) Make a contrast between penetrance and expressivity
3. (a) With the provision of appropriate formulae, explain the components involved in genetic gain from selection
(b) With relevant examples, explain the application of the two Medellian laws of heredity to animal breeding
(c) What is the underlying belief of "Pangenesis" and where does it originate?
4. Explain the following terms in genetics
 - i. Incomplete dominance
 - ii. Co-dominance
 - iii. Linkage
 - iv. Sex-limited genes
5. (a) Discuss the X-Y and the SRY systems of sex determination in mammals
(b) In tabular form, give five contrast between quantitative and qualitative traits
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(c) Make a distinction between additive gene and complimentary gene
6. (a) Clearly explain the two types variations in animals
(b) Briefly discuss the three sources/causes of variation in animals
(c) Distinguish between heritability and repeatability
(d) State four importance of repeatability