



NATIONAL OPEN UNIVERSITY OF NIGERIA

Faculty of Agricultural Sciences

Department of Animal Science and Fisheries

POP Examination 2021_7836

Course: ANP507: Animal Breeding And Livestock Improvement

Credit Unit: 2

Time Allowed: 2 hours.

INSTRUCTIONS: Answer question one (Compulsory: 25 Marks) and any other THREE (15 marks each)

Marking Guide

QUESTION ONE

- | | | |
|------|--|----------|
| i. | Can you distinguish exist between positional cloning and association mapping | 10 marks |
| ii. | Outline the five main steps involved in association studies | 5 marks |
| iii. | What differences exist between the terms linkage and linkage disequilibria | 5 marks |
| iv. | Enumerate the five (5) main types of molecular markers | 5 marks |

QUESTION TWO

- | | | |
|-----|---|----------|
| i. | Enumerate ten (10) factors that affect Linkage Disequilibrium (LD) | 10 marks |
| ii. | Express in your own words the modes of inheritance tested in segregation analyses | 5 marks |

QUESTION THREE

Write short note of the following:

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|------|--|---------|
| i. | The uses of likelihood ratio | 3 marks |
| ii. | Information criterion of Akaike in test statistic | 5 marks |
| iii. | Pedigrees in segregation analysis | 2 marks |
| iv. | Factors that determine the of success in QTL mapping | 5 marks |

QUESTION FOUR

- i. How is performance testing different from progeny testing? 5 marks
- ii. Write out the usefulness of Progeny Testing and their implications 3 marks
- iii. What are the advantages and disadvantages of progeny testing? 7 marks

QUESTION FIVE

- i. Can you distinguish between quantitative trait and quantitative trait locus? 5 marks
- ii. Explain briefly the concept of complex segregation analysis 4 marks
- iii. Outline the theories of genetic mapping population 6 marks

QUESTION SIX

Differentiate between the following the concept in segregation analysis

- i. Sampling scheme and random sampling of population 6 marks
- ii. Complete ascertainment and Incomplete multiple ascertainment 9 marks