



# **NATIONAL OPEN UNIVERSITY OF NIGERIA**

**University Village, Nnamdi Azikwe Express Way, Plot 91,  
Cadastral Zone,  
Jabi, Abuja**

**Faculty of Agricultural Sciences**

**FIRST SEMESTER EXAMINATION: June/July**

**COURSE CODE: AGR 305**

**COURSE TITLE: ANALYTICAL TECHNIQUES IN ANIMAL  
PRODUCTION (2 CREDIT UNIT)**

**DURATION: 2 HOURS**

## **ANSWER ANY 4 QUESTIONS**

- 1.** Define experimental error (5 marks)
  - (b) Explain the two major types of experimental error (10 marks)
  - (c) Identify five sources of determinate error (5marks)
  - (d) Differentiate between accuracy and precision (5 marks)
  
- 2.** (a) Outline seven important criteria in developing a good sampling plan (7 marks)
  - (b) Make a clear distinction between representative sampling technique and probability sampling technique (5 marks)
  - (c) With a typical example, state five critical steps to achieve systematic random sampling (10 marks)
  - (d) Itemize three advantages of stratified random sampling (3 marks)
  
- 3.** (a) Define the following concepts in experimental design (8 marks)
  - (b) Outline eight sequential steps involved in an experimental design (8 marks)
  - (c) List five requirements for volumetric treatment of sample (5 marks)
  - (d) Identify four methods of determining end point in volumetric analysis (4 marks)

- 4.** (a) With appropriate formula, compute and give interpretation of the relationship between coefficient of correlation of the following variables: (25 marks)

Milk Yield (kg)	5	6	7	3	9
Fat (%)	8	8	7	7	10

- 5.** (a) Name five characteristics of good measure of central tendency (5 marks)  
(b) With relevant formulae, explain classical probability and empirical possibility (10 marks)  
(c) Differentiate between the following: (10 marks)  
i. Research and statistical hypotheses  
ii. Null and alternative hypotheses
- 6.** (a) Concisely explain the basic concept of the following methods of chemical analysis: (25 marks)  
a. Volumetric data analysis  
ii. Gravimetric data analysis  
iii. Thermometric data analysis  
iv. Electrochemical data analysis  
v. Optical Method of Chemical Analysis