



**NATIONAL OPEN UNIVERSITY OF NIGERIA  
FACULTY OF AGRICULTURAL SCIENCES  
DEPARTMENT OF ANIMAL SCIENCE AND FISHERIES  
2025\_1 EXAMINATION**

**COURSE CODE: ANP 312**

**COURSE TITLE: Introduction to Genetics and Breeding**

**INSTRUCTIONS:** Answer question 1 and any other 2 questions.

**TIME:** 1 ½ hours

- 1 (a) List the four bases that make up the deoxyribonucleic acid. (4 Marks)
- (b) What is Meiosis? (6 Marks)
- (c) List the different stages of Meiosis. (8 Marks)
- (d) Discuss in detail the aims of an ideal Animal Improvement programme. (12 Marks)
  
2. What are the functions of the following components of the cell?
  - i. The Cell wall (5 Marks)
  - ii. Endoplasmic reticulum (5 Marks)
  - iii. Vacuoles (5 Marks)
  - iv. Golgi bodies. (5 Marks)
  
3. (a) List ten types of cells and state the diameter of eight (12 Marks)
- (b) What is the major limitation of the Clone selection method? (8 Marks)
  
4. a) Enumerate the different chemical components of the cell (7 Marks)
- b) What are the functions of Plastids and Microtubules? (10 Marks)
- c) List the four bases that make up the ribonucleic acid. (3 Marks)