



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**  
**SCHOOL OF SCIENCE AND TECHNOLOGY**  
**MAY/JUNE 2012 EXAMINATION**

ANP 310: GENETICS AND BREEDING  
TIME ALLOWED: 2HOURS

ANSWER FOUR QUESTIONS ONLY

1.
  - i. List the different components of the cell.
  - ii. State the functions of any five components of the cell.
  - iii. What are the chemical components of the cell?
  - iv. What is the major role of nucleic acids in the transmission of traits.
2.
  - i. Define the term mitosis and meiosis.
  - ii. What is cytokinesis?
  - iii. What are the basic laws of inheritance?
  - iv. Briefly explain the practical significance of the laws of Mendel.
3.
  - i. What is Mutation?
  - ii. Name the various types of Mutation.
  - iii. What are the different methods used in breeding self-pollinated plants?
  - iv. Give two advantages and limitations of the methods used in breeding self-pollinated plants.
4.
  - i. What methods are used by breeders to breed cross-pollinated crops.
  - ii. What are the advantages and limitation of the various methods used in breeding cross-pollinated crops?
  - iii. Give five examples of crops that are cross-pollinated.
  - iv. What is heterosis?
5.
  - i. What are the major methods used by breeders for multiplying asexually propagated crops?
  - ii. What are the steps involved in artificial insemination?
  - iii. What is the major limitation of clone selection method?
  - iv. Give five examples of asexually propagated crops.
6.
  - i. What are the major aims of Animal Improvement Programmes?
  - ii. Briefly discuss the various methods of Selection
  - iii. What is the major advantage of cross breeding?

iv. List four factors that militate against the effective use of artificial insemination in Nigeria.