



NATIONAL OPEN UNIVERSITY OF NIGERIA
UNIVERSITY VILLAGE, PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE
EXPRESS WAY, JABI - ABUJA.
FACULTY OF SCIENCE
Department of Biological Science
2025 2 EXAMINATIONS

BIO309: Plant Breeding

Time: 1½ hours

Credit Unit: 1

Instructions: Attempt THREE (3) questions only. Question 1 is compulsory

- 1a. Explain the term: plant breeding and mention the major steps involved in Plant breeding (10marks)
- b. Explain Self-incompatibility and its mechanism (10marks)
- c. Enumerate the factors stimulates new epidemics (10marks)

- 2a. Discuss conventional plant breeding Method or technique (10marks)
- b. List the traits that breeders have tried to incorporate into crop plants (5marks)
- c. Mention the steps in plant breeding (5marks)

- 3a. State the components of plant breeding for disease resistance (5marks)
- b. Discuss how epistatic interaction occurs between different pair of gene (5marks)
- c. Discuss the lamb brush chromosomes (10 marks)

- 4a. Write notes on the following:
 - i. What does an inbreeding coefficient of 0.25 signify? (1marks)
 - ii. Overdominance (2marks)
 - iii. Coefficient of inbreeding (F) (3marks)
 - iv. Epistasis (4marks)
 - v. Inbreeding depression (5marks)

- b. Differentiate between gametophytic and sporophytic self-incompatibility (5marks)

- 5a. Explain the following features of a chromosome:
 - i. Chromosome number (10 marks)
 - ii. Chromosome size (10 marks)