



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA**  
**FACULTY OF SCIENCE**  
**Department of Biological Sciences**  
**2023\_1 POP EXAMINATION.**

**BIO309: PLANT BREEDING**

**TIME: 1½ HOURS**

**CREDIT UNIT: 1**

**INSTRUCTIONS: ANSWER THREE QUESTIONS ONLY. QUESTION 1 IS COMPULSORY**

- 1a Write briefly on the significance of Plant breeding to the farmer (6 marks)
- 1b. Based on the affinity to basic dyes, state the differences between the darkly stained regions chromatin and the lightly stained regions of chromatin (16 marks).
- 1c. Explain the term self-incompatibility (8 marks)
  
- 2a. State 3 features of female sterility (3marks)
- 2b. Plant breeders have found that some plants are unable to produce functional male gametes. Explain the occurrence of this phenomenon (12 marks)
- 2c. Expatriate on the use of cytoplasmic male sterility in hybrid seed production. (5marks)
  
3. Describe the following features of the chromosome:
  - a. The number (12marks)
  - b. The size (8 marks)
  
4. Give an account of the significant occurrences in the evolution of Plant breeding (20 marks)
  
- 5a. Justify the process of selection in Asexual plants (9 marks)
- 5b. List the components for plant breeding for disease resistance. (5 marks)
- 5c. List 6 solutions to the susceptibility of modern agriculture to disease epidemics. (6 marks)