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. Expatiate 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)