



**National Open University of Nigeria**  
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**  
**Faculty of Science**  
**September 2020\_1 Examination**

**BIO309: Plant Breeding**

**Time: 1½ hours**

**Credit Unit: 1**

**Instructions: Answer 4 questions only .Question 1 is compulsory**

- 1a. Enumerate four (4) consequences of inbreeding in animals (4 marks)
- 1b. List ten (10) factors that stimulate the rise of new epidemics (10 marks)
- 1c. Write notes on Participatory Plant Breeding (6 marks)
- 1d. Explain Marker Assisted Selection (5 marks)
  
2. Write short notes on the following (15 marks):
  - i. Inbreeding depression (5 marks)
  - ii. Coefficient of inbreeding (5 marks)
  - iii. Effects of inbreeding procedure on plant breeding for disease resistance (5 marks)
  
- 3a. What is self-incompatibility? (2 marks)
- 3b. Discuss the early stage of the S-glycoprotein mechanism of Self-incompatibility (GSI) (10 marks)
- 3c. Enumerate any three (3) ways plant breeding has increased quality and yield of crops (3 marks)
  
- 4a. Define Inbreeding (2 marks)
- 4b. Write notes on Heterosis (5 marks)
- 4c. Explain the term 'Late-acting self-incompatibility' (5 marks)
- 4d. Enumerate the six (6) major activities of plant breeding (3 marks).
  
5. Discuss the following special types of chromosomes (15 marks):
  - i. Accessory types of chromosomes (5 marks)
  - ii. Isochromosomes (5 marks)
  - iii. Allosomes (5 marks)