



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)