NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
SEPTEMBER/OCTOBER 2015 EXAMINATION
SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: BIO 309
COURSE TITLE: PLANT BREEDING
TIME ALLOWED: 2 Hours

INTRUCTION: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER THREE QUESTIONS.

1. a. Define Plant Breeding **(2marks).**
   b. Outline five importance of plant breeding **(10marks).**
   c. By definition, differentiate between a Cultigen and a Landrace **(4marks).**
   d. Explain what you understand by Convectional Plant Breeding **(9marks).**

2. a. Itemise the **six** steps or major activities of plant breedin g **(3marks)**.
   b. Based on cytological principles of plant breeding, describe a chromosome under the following:
   i. Chromosome number **(3 marks)**
   ii. Chromosome size **(3 marks)**
   iii. Chromosome morphology (**3 marks)**
   c. In a tabular form, state three differences between a heterochromatin and euchromatin**(3marks)**

3. a. Explain the term: Heterosis **(4marks).**
   b. By definition, differentiate between heterosis and Inbreeding **(2marks).**
   c. State any **four** adverse effects of inbreeding **(4marks).**
   d. Write short notes on (**5marks):**
   i. Inbreeding depression
   ii. Coefficient of Inbreeding

4. Write short notes on the following:
   a. Self Incompatibility in plants **(5marks);**
   b. Gametophytic Self Incompatibility **(5marks);**
   c. Sporophytic Self Incompatibility **(5marks).**;

5. a. Differentiate between cytoplasmic male sterility and cytoplasmic-genetic male sterility **(10marks).**
   b. Outline the role of cytoplasmic-male sterility in hybrid maize breeding **(5marks).**

6. a. Write concise notes on:
      a. Outline the procedure involved in plant breeding for developing a disease resistance plant **(8marks).**
      b. State seven fasctors that have been describe to stimulate the rise of new epidemics **(7marks)**