



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
DEPARTMENT OF PURE AND APPLIED SCIENCES
OCTOBER/NOVEMBER, 2019 EXAMINATION

BIO309: Plant Breeding

Time: 1½ hours

Credit Unit: 1

Instructions: Answer 4 questions only. Question 1 is compulsory

- 1a. List 3 features of female sterility (3 marks)
1b. Differentiate between Heterochromatin and Euchromatin (14 marks)
1c. Discuss the genetic basis of heterosis. (8 marks)

2a. Complete the following table (5marks)

Name of Organism	No of Gametic chromosomes	No of Somatic chromosomes
Man		46
Onion	8	
<i>Drosophila</i>		8
Cotton		52
Garden pea		14
Rice		24
Tomato	12	
Wheat	21	
Maize	10	
<i>Haplopappusgracilis</i>		4

- 2b. Classify and describe the 4 groups of the chromosomes based on the position of the centromeres (10 marks)
- 3a. List 2 practical uses of coefficient of inbreeding (2 marks)
3b. Justify the occurrence inbreeding depression in a population (7 marks)
3c. Write a short note on 'coefficient of inbreeding' (F) (6 marks)
- 4a. List five types of Self-incompatibility (5 marks)
4b. Justify the role of self-incompatibility in the success of angiosperms (10 marks)
- 5a. Explain the term epidemic (5 marks)
5b. List the factors that have been described to stimulate the rise of new epidemics (10 marks)