



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
Department of Pure and Applied Sciences

2023 2 EXAMINATIONS

BIO309: PLANT BREEDING

TIME: 1½ HOURS

CREDIT UNIT: 1

INSTRUCTIONS: Answer question ONE (1) and any other THREE (3) questions

- 1a. Explain the nature of Polytene chromosomes (12 marks)
1b. Write on self-fertilization as a form of inbreeding (10mks)
1c. Given that the following organisms have the given number of somatic chromosomes, state the number of gametic chromosomes present in the organisms (3 marks):

Tomato	24
Rice	24
Wheat	42
Onion	16
Maize	20
<i>Drosophila</i>	8

- 2 Using cytological principle of plant breeding, explain the chromosome morphology under the following;
- (i) Centromere (7 marks)
 - (ii) Chromomere (8marks)

- 3a. Discuss the effect of heterosis in domestic animals (10 marks)
3b Outline the Selection process of cross-pollinated crops (5marks)

- 4a. Discuss the use of Clone in plant breeding (9 marks)
4b. Account for the existence of secondary constriction in chromosomes (6 marks)

- 5a. Expatiate on the role of cytoplasmic male sterility in hybrid production (9 marks)
5b. Explain the RNase mechanism of Gametophytic self-incompatibility (6marks)

Question 4a: Strategic Planning is the type of planning that requires tact and timing which sets it apart as unique amongst the various types of planning that exist. Define and discuss Strategic Planning according to Oyedijo (2008) (7 Marks)

Question 4b: The uniqueness of Strategic Planning cannot be overemphasized; these uniqueness has given rise to various core areas of strategy. Write short notes on the three (3) Core Areas of Strategy. (8 Marks)

Question 5a: It has been established through our study that funding, whether start up or expansion, has been the major challenges facing Entrepreneurs and the concept of Entrepreneurship. List and briefly explain the sources of Funds of a Sole Trader. (7 Marks)

Question 5b: Write comprehensive notes on the following concepts:

1. The Product Concept
2. The selling concept
3. The marketing Concept. (8 Marks)

(Wishing you all the very best)