



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
Department of Pure and Applied Sciences
2021_1 EXAMINATION

COURSE CODE: BIO402

COURSE TITLE: CYTOGENETIS OF PLANTS

CREDIT UNIT: 2

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER THREE QUESTIONS

- 1a. Outline the importance of chromosomes packaging (5 marks)
- b. Write a detailed note on Autopolyploidy in plants (5 marks)
- c. Explain with clear examples the term Allopolyploidy (5 marks)
- d. List the causes of Aneuploidy (5 marks)
- e. Discuss the contribution of Theodore Boveri's experiment to chromosome theory of inheritance (5 marks)
- 2a. Explain the four principles laid down by Edmund Beecher Willson as the foundation of the chromosome theory of inheritance (4 marks)
- b. Outline the conclusions of Edmund Beecher Wilson's Principle of Chromosome Theory of Inheritance (4 marks)
- c. Categorize variations in chromosome number with reference to Aneuploidy and Euploidy (7 marks)
- 3a. Briefly explain the occurrence of polyploidy in plants as compared to animals (5 marks)
- b. Discuss the shapes of chromosomes during anaphase cell division (10 marks)
- 4a. Explain how DNA is organized into chromatin (2 marks)
- b. Account for the application of chromosome morphology (3 marks)
- ci. What do you understand by variation? (2 marks)
- ii. Briefly describe the four types of structural mutation (8 marks)
- 5a. Explain why inversion is sometimes regarded as crossover suppressor (2 marks)
- b. Write a comprehensive note on satellite chromosomes (13 marks)