



NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
JULY 2017 EXAMINATION

COURSE CODE: BIO301

COURSE TITLE: GENETICS II

CREDIT: 2 units

TIME ALLOWED: 2 Hours

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

1. (a) Define genetic transfer. (2 marks)
(b) Explain how you can determine if there is any mutant colony in a culture. (6 marks)
(c) Polyploids are of significant effects. Discuss. (8 marks)
(d) Describe the mechanisms of balancing selection. (4 marks)
(e) Outline the steps in specialized translocation. (5 marks)
2. (a) Describe the antibodies and blood antigens relationships in ABO blood group. (5 marks)
(b) Write short notes on the following:
(i) Co-dominance. (5 marks)
(ii) Dosage compensation. (5 marks)
3. (a) Enumerate the importance of structural chromosomal aberrations in plant breeding. (5 marks)
(b) As a human geneticist, how will you apply aneuploidy in crop improvement? (10 marks)
4. (a) Explain how genes determine sex. (3 marks)
(b) Write short notes on the following:
i. Genetic recombination (4 marks)
ii. Gene transfer (4 marks)
iii. Frameshift mutation (4 marks)
5. (a) Describe the Lysogenic cycle. (5 marks)
(b) Account for the defects of abundant and structural proteins. (10 marks)