National Open University Of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
OCTODER/NOVEMBER 2016 EXAMINATION

COURSE CODE: BIO 301
COURSE TITLE: GENETICS II
TIME ALLOWED: 2 Hours
INTRUCTION: Answer question ONE (1) and any other THREE (3) questions

1. (a) Define the term paralogous (4 marks)
   (b) Outline the general steps of the lytic cycle (5 marks)
   (c) Sickle cell anemia is regarded as a heritable disease- Discuss (8 marks)
   (d) Account for the mode of occurrence of the different inversions (8 marks)

2. (a) what do you understand by the term Pedigree? (2 marks)
   (b) Outline the characteristic features of haploid plants. (6 marks)
   (c) Present an illustrated description of the structure of a virus. (7 marks)

3. (a) Explain how polyploidy can be induced. (5 marks)
   (b) Give a detailed description of the significance of Polyploids (10 marks)

4. As a human geneticist, how will you diagnose the following?
   (a) Huntington's disease (7 marks)
   (b) Sickle cell anemia (8 marks)

5. (a) Describe the role of structural chromosomal aberrations in plant breeding (5 marks)
   (b) Aneuploidy can be applied in crop improvement and genetic studies- Discuss. (10 marks)

6. (a) Explain the defects of abundant and structural proteins (6 marks)
   (b) Write **short notes** on the following:
      (i) Paleopolyploidy (3 marks)
      (ii) Homoeologous (3 marks)
      (iii) Homologous (3 marks)