NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16, Ahmadu Bello Way, Victoria Island

SCHOOL OF SCIENCE AND TECHNOLOGY
October, 2013 Examination

COURSE CODE: BIO 301
COURSE TITLE: GENETICS II
TIME ALLOWED: 2 HOURS
INSTRUCTION: ANSWER ANY FOUR QUESTIONS

1ai. Define population cytogenetics.
ii. Discuss the genetic significance of deletion.
bi. Mention the goals of population genetics.
ii. Describe the different types of duplications, and list their effects.

2ai.Enumerate the role of structural chromosomal aberrations in plant breeding
ii. Describe the mode of occurrence of the different types of inversions you know.
b. Polyploids are of significant effects, Discuss

3ai.How do genes determine sex?
ii. Describe the structure of protein.
b. What are the components of a ribosome?
ii. Describe the various stages involved in transcription.

4ai. What do you understand by the term pedigree?
ii. Write short notes on the following:
(i) Karyotype (ii) Codominance (iii) dosage compensation.
b. Explain why sickle cell anemia is regarded as a heritable disease.

5ai. What do you understand by the term paralogous?
ii. Briefly discuss the origin of polyploidy.
bi. List the characteristics of X-linked traits
ii. Write short notes on the following:
(i)silent mutation (ii)missence mutation (iii)point mutation

6ai. What do you understand by the term mutagens?
ii. Describe the mode of action of the following mutagens:
(i) Nitrous acid (ii) A base Analog (iii)UV light
bi. Define genetic transfer.
ii. How can you tell if there are any mutant colonies in a culture?