



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
PLOT 91 UNIVERSITY VILLAGE, JABI CADASTRAL ZONE, AIRPORT ROAD, JABI, ABUJA

**FACULTY OF SCIENCES**

**2023 2 EXAMINATIONS—**

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**COURSE CODE: BIO301**

**COURSE TITLE: GENETICS II**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: Answer Question ONE (1) and any other THREE (3) Questions**

- 1(a) Enumerate the mechanisms of balancing selection. (4 marks)  
(b) Describe the chemical and structural composition of ribosomes, and relate their functions to protein synthesis. (5 marks)  
(c) Discuss Duffy system in genetics. (7 marks)  
(d) Give a detailed description of transposons. (9 marks)
- 2(a) Explain genetic recombination by transformation. (5 marks)  
(b) Describe the process of Transcription in relation to protein synthesis. (10 mks)
- 3(a) State the relationships between gene frequencies and variability. (5 marks)  
(b) Describe the process by which mRNA nucleotide sequence is converted to amino acid sequence. (10 marks)
4. Give a detailed description of the process of DNA replication in bacteria. (15 marks)
- 5(a) Concisely explain what is population genetics. (7 marks)  
(b) Discuss human taste morphism. (8 marks)