



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91 UNIVERSITY VILLAGE, JABI CADASTRAL ZONE, AIRPORT ROAD,
JABI, ABUJA
FACULTY OF SCIENCES
Department of Pure and Applied Sciences
2021_1 EXAMINATION

COURSE CODE: BIO301

COURSE TITLE: GENETICS II

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3) QUESTIONS

- 1a. State the two forms of variation with two examples each. **(3mks)**
- b. Mention three effects of polyploidy. **(3mks)**
- c. Present the following chromosomal aberrations in numerical form. **(6mks)**
 - i. Monosomy
 - ii. Nullisomy
 - iii. Tetrasomy
 - iv. Trisomy
 - v. Double trisomy
 - vi. Double monosomy
- d. Explain in detail the four types of mutation **(13mks)**

- 2a. Explain the meaning of transcription **(3mks)**
- b. list two types of mutation known; **(2mks)**
- c. Enumerate the five (5) genetic consequences of inversions. **(5mks)**
- d. In a tabular, form state 5 differences between DNA and RNA **(5mks)**

- 3a. Outline the two (2) characteristics of x-linked traits. **(2mks)**
- b. Give four (4) examples each of the following crops: **(8mks)**
 - i. Triploid
 - ii. Tetraploid
 - iii. Hexaploid
 - iv. Octaploid
- c. Give a detailed explanation of how genes determine sex in humans. **(5mks)**

- 4a. List 4(four) human recessively disorders. **(4mks)**
- b. Outline 4(four) dominant inherited disorders. **(4mks)**
- c. Describe extensively the ABO blood group system. **(7mks)**

- 5a. Explain what you understand by genetic polymorphism? **(3mks)**
- b. Define the following terms. **(6mks)**
 - i. Pleiotropism
 - ii. Gene
 - iii. Allele
- c. Mention six examples of polymorphism. **(6mks)**