



NATIONAL OPEN UNIVERSITY OF NIGERIA
91 Cadastral zone, Nnamdi Azikiwe Expressway, Jabi, Abuja
FACULTY OF EDUCATION
DEPARTMENT OF SCIENCE EDUCATION
2025_2 EXAMINATIONS

COURSE CODE: SED 321
COURSE TITLE: BIOLOGY FOR INTEGRATED SCIENCE 111
CREDIT UNIT: 2
TIME ALLOWED: 2 HOURS
INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER 2

Question 1:

- Scientists discovered by the end of the nineteenth century that two types of nuclear division occur in the cells of living organisms: Discuss the two types of cell divisions that occur to enable living organisms reproduce?
- The organelles are cells internal organs with specialized functions that contribute to the cells overall functions: List the cell organelles and explain their functions.
- As a biology tutor in training, explain to your students with “O” blood group the different blood types and the reason those with his blood group type are called universal donor.

30 marks

Question 2

- State and explain Mendel’s second law of inheritance
- The most common types of interactions in a habitat are categorized based on their effects on individual species. With relevant examples, Explain 4 of the following types of relationships (i) Parasitism (ii) Mutualism (iii) Predation (iv) Commensalism (v) Competition
- In ecosystems, living organisms vie for limited resources, including food, water, light, space, and mates: by what mechanism does intra specific competition occur?

20marks

Question 3

- Improving crops or domestic animals by traditional methods is a slow process hence the use of scientific method known as transgenic technique; (i) Enumerate five (5) aims of plant and animal breeding which might be subject of transgenic? (ii) Give five reasons the transgenic technique is seemingly preferred to the traditional methods of plant and animal breeding?
- Enumerate five (5) advantages of transgenic technique?

20 marks

Question 4

- Mutation refers to any alteration in the DNA sequence of an organism: i Explain how chromosome mutation occurs and discus their potential benefits?
- Provide details of four diseases caused by chromosomal mutation?

20 mark