



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**Plot 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**  
**DEPARTMENT OF SCIENCE EDUCATION**

**EXAMINATION: 2021\_2**

**COURSE CODE: SED321**

**COURSE TITLE: BIOLOGY FOR INTEGRATED SCIENCE 111**

**CREDIT UNIT: 2**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: ANSWER THREE QUESTIONS FROM FOUR, ALL QUESTIONS CARRY EQUAL MARKS**

**ONE Mark will be awarded for orderly presentation of answers**

**1a. Identify and describe salient characteristics of six (6) out of the different types of range land in the world. 18MARKS**

**b. List five (5) out of many uses of Rangeland. 5MARKS**

**2a. Examine five (5) major features of the range lands in each of the following North America countries.**

**1. Canada. 5MARKS**

**a. United States of America. 5MARKS**

**b. Suggest two (2) out of the characteristics of a good pesticide 2MARKS**

**c. i. State the logistic growth equation 2MARKS**

**ii. Identify the four (4) key components of logistic growth equation. 4MARKS**

**iii. Examine five (5) major effects of logistic growth equation on intra specific competition in any biological system in Chronological order. 5MARKS**

**3ai. Identify any three (3) different kinds of association found in Mycorrhiza. 3MARKS**

**ii. Discuss the processes involved in the relationship between the silver birch. (Betula pendula) and the fly agaric fungus (Amanita muscaria). 10MARKS**

**bi. Suggest three (3) out of the reasons why the transgenic technique seemingly preferred to the traditional methods of plant and animal breeding. 3MARKS**

**ii. Examine seven (7) out of the aims of plant and animal breeding which are subject of transgenic that are not so different from those of the traditional methods of breeding. 7MARKS**

**4a. Explain the term Rhesus factor as found in antibody/antigens relationship in the blood groups of human being. 10MARKS**

**b. Give the meaning of any six (6) out of the following genetic terms:**

- i. Gene
- ii. Chromosome
- iii. Allele
- iv. Homozygous
- v. Heterozygous
- vi. Locus
- vii. Phenotype. **6 MARKS**

**c.** Describe seven (7) out of the processes that occurred in Prophase I of Mitotic cell division.  
**7MARKS**