



NATIONAL OPEN UNIVERSITY OF NIGERIA

Plot 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja

DEPARTMENT OF SCIENCE EDUCATION

EXAMINATION: 2021_1

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. Discuss three (3) methods of birth control measures used in your environment. **6MARKS**

b. Identify and discuss five (5) main external factors of environmental resistance in population growth. **15MARKS**

c. Discuss briefly the internal factors affecting population size **2MARKS**

2a. Discuss five (5) main features of the following important demographic data to biologists in conservation programmes.

i. Life table **5MARKS**

ii. Age structure **5MARKS**

b. With the aid of labelled curves, describe briefly the J (Exponential growth) and S (logistic growth) growth curves. **13MARKS**

3a. What are the five (5) salient features of carrying capacity that makes it a unique factor to be considered in population studies? **5MARKS**

b. Describe the importance of the following terms in the study of population ecology of an organisms in a specified environment

i. Population Density, **2MARKS**

ii. Birth rate (natality), **4MARKS**

iii. Death rate (mortality) **2MARKS**

iv. Survivorship curve **4MARKS**

v. Age structure **2MARKS**

vi. Migration **2MARKS**

c. In two (2) sentences, describe the chronological process of capture-recapture method in order to estimate the population of an organism in a giving community **2MARKS**

4a (i) With the aid of mathematical expression, describe convincingly the term intensity of demands on biological ecosystems. **5MARKS**

(ii) Explain two (2) out of the implications of the formula of intensity of demands on biological ecosystems to the population. **4MARKS**

b. Explain the concept of social system in an ecosystem, using the following processes:

1. Meaning of social system. **4MARKS**

2. Services that ecosystem provides to the social system. **4MARKS**

3. Information movement from ecosystems to social systems. **6MARKS**