



# **MASENO UNIVERSITY**

## **UNIVERSITY EXAMINATIONS 2017/2018**

### **SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE WITH INFORMATION TECHNOLOGY**

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#### **MAIN CAMPUS**

#### **NES 202: ELEMENTS OF ECOLOGY**

Date: 14<sup>th</sup> February, 2018

Time: 3.30 - 6.30pm

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#### **INSTRUCTIONS:**

- Answer Question ONE and any other TWO.
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1. a) Explain the meaning of the following terms:

- i. Net primary productivity [2 marks]
- ii. Ecological niche [2 marks]
- iii. Biome [2 marks]
- iv. Population [2 marks]
- v. Keystone species [2 marks]

b) Describe the FIVE common features of intraspecific competition. [10 marks]

c) Account for the loss of energy from one trophic level to another in a food chain. [6marks]

d) Explain TWO forms of plant community structure. [4 marks]

2. Explain how the environmental factors determine the plant growth form and leaf size. [20 marks]

3. a) Using an illustration, describe the nitrogen cycle. [10 marks]

b) Explain the factors influencing the cycling of nutrients in the ecosystem. [10 marks]

4. a) Account for the variation of species diversity in the ecosystem. [10 marks]

b) Describe the basic patterns of population growth forms. [10 marks]

5. Explain the physiological and anatomical adaptation of plants to variation in water availability. [20 marks]