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KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016 ACADEMIC YEAR FIRST YEAR SECOND SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF B.ED (SCIENCE) & B.SC. BIOLOGY

COURSE CODE: SZL 123

COURSE TITLE: FUNDAMENTALS OF ECOLOGY


DATE: 10th May 2016

TIME: 2 – 4 p.m.

INSTRUCTIONS TO CANDIDATES

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over 

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Question 1

- a. With respect to ecology, define the following terms: (4 marks)
- i. Regulating factor
 - ii. Deme
 - iii. Biophysical environment
 - iv. Biosphere
- b. Distinguish between *r*-selected species and *k*-selected species (3 marks)
- c. Explain how density-dependent inhibition regulates the population of organisms in an ecosystem (3 marks)
- d. Differentiate between source patches and sink patches (2 marks)
- e. Explain the ecological importance of forests in Kenya (3 marks)
- f. Explain the concept of population carrying capacity (3 marks)
- g. State three ways of collecting data in a botanical garden (3marks)
- h. Explain how rangeland rehabilitation can be achieved in Kenya (3 marks)
- i. State three basic types of plant population distribution within an area (3 marks)
- j. Citing specific examples explain the role of key stone species in an ecosystem (3 marks)
2. Discuss how abiotic factors influences the distribution and abundance of plant species in Kakamega forest (20 marks)
3. Discuss how population carrying capacity is related to ecological resources in an ecosystem (20 marks)
4. Explain the ecological impacts associated with introduction of invasive species in Kakamega forest (20 marks)
5. By use of a well labelled diagram, explain the nitrogen cycle (20 marks)