



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2014/2015

DIGITAL SCHOOL OF VIRTUAL AND OPEN LEARNING

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF ARTS

AGE 403: APPLIED BIOGEOGRAPHY

DATE: Sunday, 3rd May 2015

TIME: 11.00 a.m. – 1.00 p.m.

INSTRUCTIONS:

Answer Question ONE and Any Two Questions. Use illustration where appropriate.

- Q1. (a) Describe the following terminologies:
- (i) Preservation (2 marks)
 - (ii) Conservation (2 marks)
 - (iii) Cline (2 marks)
 - (iv) Entropy (2 marks)
 - (v) Peripatric speciation (2 marks)
- (b) Explain why:
- (i) It requires more energy to maintain 1 gram of a mouse compared to a gram of an elephant using the laws of thermodynamics. (5 marks)
 - (ii) The rate of primary productivity may be high, yet the total biomass (standing crop) is very low with an aquatic ecosystem. (5 marks)
- (c) Outline the stochastic factors that promote Allee effects. (10 marks)
- Q2. Describe the components of species diversity and how these are computed using Shannon-Weiner Diversity index. (20 marks)

- Q3. Explain how IUCN redlist is utilized in evaluating the conservation status of species. (20 marks)
- Q4. Explain the demerits and merits of the following designs of nature reserves:
- (a) Single large reserve vs many small isolated reserves. (10 marks)
 - (b) Nature reserves excluding people vs nature reserve including people. (10 marks)
- Q5. Describe why African governments are cynic about embracing Genetically Modified Organisms (GMOs), yet the advantages GMOs accrue may surpass that of green revolution. (20 marks)