

KISII UNIVERSITY  
UNIVERSITY EXAMINATIONS  
FIRST YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE OF  
ANIMAL SCIENCE AND PRODUCTION  
FIRST YEAR SEMESTER 1  
ENSC 00100: ECOLOGY AND ENVIRONMENTAL SCIENCE  
Y1S1

SECTION A: ATTEMPT ALL QUESTIONS IN THIS SECTION (40MKS)

1. Describe the following ecological terms:
  - (a) Producers. (2mks)
  - (b) Food chain. (2mks)
  - (c) Trophic level. (2mks)
  - (d) Food web. (2mks)
  - (e) Ecosystem. (2mks)
2. (a) Differentiate between a pyramid of numbers and a pyramid of biomass. (2mks)
  - (a) Why is a pyramid of biomass a more accurate way of representing the amount of organic matter in each trophic level as compared to a pyramid of numbers? (8mks)
3. Describe how energy flows in an ecosystem. (10mks)
4. Explain the following:
  - (a) Net primary productivity. (5mks)
  - (b) Gross primary productivity. (5mks)

SECTION B: ATTEMPT ANY TWO QUESTIONS IN THIS SECTION (30MKS)

5. Discuss the impacts of human population to the environment. (15mks)
6. Describe the nitrogen cycle under the following:
  - (a) Biological nitrogen fixation. (7mks)
  - (b) Non-biological nitrogen fixation. (8mks)
7. Explain the following processes in the hydrological cycle:
  - (i) Infiltration. (3mks)
  - (ii) Condensation. (3mks)
  - (iii) Transpiration. (3mks)
  - (iv) Precipitation. (3mks)
  - (v) Percolation. (3mks)