CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN NATURAL RESOURCE MANAGEMENT

NARE 324: AQUATIC ECOLOGY

STREAMS: BSC(NARE,ENSC,WIEM,ECOT)   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 13/12/2018   **8.30 A.M – 10.30 A.M**

 INSTRUCTIONS
- **Answer all questions in section A and any other two questions in section B**
- **Do not write on the question paper**

SECTION A: (30 MARKS)

1.   (a) Define the following terms as used in aquatic ecology.

   (i) Marsh   [2 marks]

   (ii) Periphyton   [2 marks]

   (iii) Bog   [2 marks]

   (b) Using examples describe the following terms

   (i) Chemosynthetic bacteria   [2 marks]

   (ii) Aerenchyma tissue   [2 marks]

2.   Algal blooms can create high dissolved oxygen in the water due to photosynthesis.

   (a) Explain why these blooms are sometimes blamed for the death of aquatic organisms

   in water.   [3 marks]

   (b) Explain why algal blooms exploit most aquatic ecosystems.   [3 marks]

   (c) Highlight FOUR functional benefits of River Tana.   [4 marks]

3.   (a) Explain why there are variations in biological productivity between temperate and

   tropical marine ecosystems.   [5 marks]

   (b) Describe the role of papyrus vegetation on the ecology of Lake Victoria wetlands.

   [5 marks]

SECTION B (40 MARKS)

4.   (a) Explain how aquatic organisms are functionally classified.   [12 marks]

        (b) Discuss the physical, chemical and biological distresses that impact on aquatic

        organisms.   [8 marks]

5.   Using examples, explain the statement 'plants have defied the scientific law of gravity

         since they are able to move water from their roots to the leaves to perform biological

        functions'   [20 marks]

6.   (a) Discuss he natural and anthropogenic challenges facing fresh water ecosystems in

        Kenya.   [10 marks]

        (b) Using an illustration, describe zonation in the marine ecosystem.   [10 marks]