MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
THIRD YEAR SECOND SEMESTER

SCHOOL OF TOURISM AND NATURAL RESOURCE MANAGEMENT
BACHELOR OF SCIENCE (ENVIRONMENTAL BIOLOGY AND HEALTH)
& BSC. ZOOLOGY/BOTANY

COURSE CODE: EBH 3226/ZOO 320
COURSE TITLE: FRESHWATER ECOLOGY AND CONSERVATION

DATE: 24TH APRIL, 2019   **TIME: 11:00AM – 1:00PM**

INSTRUCTIONS TO CANDIDATES
ATTEMPT ALL QUESTIONS IN SECTION A AND ANY 3 IN SECTION B

Support your answers with relevant examples and illustrations and clearly show your calculations, where relevant.

This paper consists of 2 printed pages. Please turn over.

SECTION A (25 MARKS)

Attempt ALL questions in this section.

1. State 2 biotic and 3 abiotic factors that influence phytoplankton populations in freshwater   (*5marks*).

2. Explain why over fertilization of fish ponds should be avoided
                                                                                             (*5marks*).

3. State 3 main adaptations of phytoplankton against sinking (*5marks*).

4. Explain why phosphorus is often the limiting nutrient in freshwater
                                                                                             (*5marks*)

5. Explain the differences between;
   i.   Maximum depth (Z_m) and Mean depth (Z)
   ii.   Shore Line (L) and shoreline development (D_L)
   iii.   Allochthonous and Autochthonous sources of nutrients
                                                                                             (*5marks*)

SECTION B (Attempt any THREE questions)

6. Discuss the main factors influencing abundance and distribution of benthic macroinvertebrates in streams and rivers and the adaptations of invertebrates to fast flowing waters   *(15 marks*).

7. i. Explain what you understand by integrated river basin management (IRBM)   (*5 marks*).

   ii. Using a case scenario, explain the process you would go through to implement an IRBM programme in a given basin   (*10 marks*).

8. Lake George, Uganda has a mean depth of about 5M while Lake Windermere, UK has a mean depth of about 8M. Discuss why gross annual primary productivity is higher in Lake George than in Lake Windemere   (*15 marks*).

9. i. Discuss CO_2 dynamics in freshwater ecosystems   (*10 marks*).

   ii. Outline 5 major threats freshwater resources in Kenya face
                                                                                             (*5 marks*).

********* END OF EXAM QUESTIONS*********