MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 312: LIMNOLOGY

DATE: 23/7/2019 **TIME: 2.00-4.00 PM**

INSTRUCTIONS: answer question one and any other two questions

SECTION A

1. a) Differentiate between Eutrophy and oligotrophy (1 mark)

   b) Explain the cause and significance of the following in aquatic systems:

      i. thermal stratification (3 marks)

      ii. Currents (3 marks)

   c) Describe three (3) factors that explain

      i. High benthic community in estuarine ecosystems (3 marks)

      ii. High numbers of organisms in mid water streams compared to head and down water streams (3 marks)

   d) Describe three (3) adaptations of organisms in the lower reaches of rivers (3 marks)

   e) Explain the significance of riparian vegetation in the functioning of a lotic system (3 marks)

   f) Describe three (3) methods of measuring primary production in aquatic systems (3 marks)

   g) Describe two modes of feeding in benthic organisms (2 marks)

h) Define biological magnification and outline its effect in limnological systems (3 marks)

i) Outline the significance of Phylum Annelida in aquatic systems (3 marks)

SECTION B

2. Describe the role of man in the deteriorating conditions in various aquatic ecosystems (20 marks)
3. Discuss the significance of unique properties of water to aquatic life (20 marks)
4. Describe how physical characteristics in aquatic systems affect the structure of lake ecosystems (20 marks)
5. Describe the structural and functional components of the Tana River Ecosystem (20 marks)