



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: 24/9/2019

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)