



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF NATURAL AND APPLIED SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE HONOURS	
QUALIFICATION CODE: 08BOSH	LEVEL: 8
COURSE CODE: EBM811S	COURSE NAME: ENVIRONMENTAL BIOLOGY AND AQUATIC ECOSYSTEM MANAGEMENT
SESSION: JUNE 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER (S):	Prof. Edosa Omoregie
MODERATOR:	Dr. Sem T. Shikongo

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer any 5 (five) questions2. Write clearly and neatly3. Number your answers clearly

PERMISSIBLE MATERIAL

Scientific Calculator

THIS QUESTION PAPER CONSISTS OF 2 PAGES
(Including this front page)

Question 1 [20]

- a) With reference to physical and biological properties, discuss the erosional and depositional ecological habitat types of the river system. (10)
- b) Critically review the environmental effects of dams on the biodiversity of the river system. (10)

Question 2 [20]

- a) What is cultural eutrophication? Discuss the effect of cultural eutrophication on the aquatic ecosystem. (10)
- b) With the aid of graphic illustration and suitable examples, discuss the effects of the introduction of raw sewage on the biology and chemistry of a river system. (10)

Question 3 [20]

- a) With reference to solid removal, mineralization of organic materials and deactivation of pathogens, discuss the treatment of wastewater and organic sewage. (10)
- b) With the aid of illustrations, critically review the roles of chlorofluorocarbon (CFC) and carbon dioxide as a greenhouse gas. (10)

Question 4 [20]

- a) Explain the concept of the protection of wetlands based on US EPA (2007) definition? (5)
- b) What is a wetland buffer zone. Explain the key considerations in setting up a buffer zone for the protection of wetlands. (5)
- c) In a tabular form, explain the factors guiding the selection and prioritizing in creating reserve systems for the protection of wetlands. (10)

Question 5 [20]

- a) What is remote sensing? Briefly explain the application and benefits of geographic information system in natural resource management. (10)
- b) As a manager in a government protected wetland establishment, discuss any five (5) of the principles and their management strategies involved in the restoration of a protected wetland. (10)

Question 6 [20]

- a) As a manager in an aquaculture establishment, critical review the various factors to be considered when setting up a new mariculture venture. (10)
- b) Explain the term aquaponic and its ecological importance. Briefly discuss the benefits of aquaponic to the sustenance of the environment. (10)