



SOUTH EASTERN KENYA UNIVERSITY

UNIVERSITY EXAMINATIONS 2014/2015

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (FISHERIES MANAGEMENT AND AQUACULTURE TECHNOLOGY) and BACHELOR OF SCIENCE (ENVIRONMENTAL CONSERVATION)

WFA 306 WETLAND ECOLOGY and ESM 304 WETLAND ECOLOGY AND MANAGEMENT

DATE: 15TH APRIL 2015 TIME: 2 HOURS

INSTRUCTION TO CANDIDATES

Attempt **ALL** questions in **section A** and any **TWO** in **section B**. Support your answers with appropriate examples and diagrams.

SECTION A (Each question carries 5 marks).

1. The amount of a particular form of dissolved carbon dioxide in freshwater depends on water pH: Use a well illustrated diagram to explain this.
2. Explain the importance of an Integrated Water Resource Management (IWRM) approach to wetland management.
3. Explain why phosphorus is often a limiting nutrient in shallow freshwater bodies.
4. Explain the effects of flooding on soils and availability of nutrients.
5. Clearly explain any five environmental services wetlands provide.
6. Describe 5 major challenges faced in conserving Kenya's wetlands.

SECTION B

ATTEMPT ANY TWO QUESTIONS (Each question carries 20 marks).

7. i) Discuss the biogeochemical dynamics of phosphorus and nitrogen in freshwater wetlands and their implications on freshwater productivity **(15 marks)**
- ii) Explain the major causes of eutrophication and how it can be managed **(5marks).**
8. Consider the following scenario:
You have been appointed the County Director of Environment in Siaya County. One of your first tasks is to initiate a process leading to development of Strategic Management Plan for the Yala swamp wetland. You have organized a workshop for environmental officers from the county to discuss with them your plans and conclude that you will need to undertake a situational analysis to begin the process.
- i. Explain to the officers what you mean by Strategic Wetland Management Plan and why it is necessary **(5 marks)**
- ii. Explain to the officers what you mean by situational analysis and how you propose to undertake the process. **(15 marks)**
9. i. Discuss the morphological and behavioural adaptations of wetland plants to waterlogged anoxic environments. **(10 marks)**
- ii. Discuss the major different biochemical pathways between C3 and C4 plants and explain why wetland plants have evolved the C4 pathway **(10 marks).**