



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
Department of Biological Sciences
2023_1 POP EXAMINATION.

COURSE CODE: BIO405

COURSE TITLE: Hydrobiology

CREDIT: 2 UNITS

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER NUMBER ONE (1) AND ANY OTHER TWO (2) QUESTIONS

- 1a. Outline any three (3) Importance of benthic invertebrates as prime indicators of environmental conditions. **(3 marks)**
- b. List the techniques used in measuring primary productivity in freshwater ecosystem. **(4 marks)**
- c. Discuss the sources of freshwater ecosystem **(5marks)**
- d. Elucidate the four (4) macrophytes in freshwater system that inhabits in both benthic and pelagic zones. **(6 marks)**
- e. Outline the problems of eutrophication on human societies **(6 marks)**
- f. Discuss the best management practices on how to control eutrophication. **(6 marks)**

- 2a. Enumerate the causes of water pollution in aquatic ecosystem. **(5 marks)**
- b. Explain the factors that affects water quality. **(7 marks)**
- c. Enumerate how difference the following water parameters are being determined: **(8 marks)**
 - i. pH
 - ii. Dissolved Oxygen
 - iii. Chemical Oxygen Demand
 - iv. water current
 - v. Total Suspended Solid
 - vi. Total Dissolved Solid
 - vii. Nitrite level
 - viii. Phosphate level

- 3a. Describe any four (4) major natural vegetation types of the Lake Chilwa wetland. **(4 marks)**
- b. Write concisely on the montane freshwater **(2 marks)**
- c. Distinguished between primary productivity and secondary productivity. **(4 marks)**
- d. Describe the five (5) major natural vegetation types of the Lake Chilwa wetland. **(10 marks)**

4. Write short notes on the following in respect to freshwater:
 - i. Colour and Turbidity **(5 marks)**
 - ii. Organic constituents **(5 marks)**
 - iii. Heavy metals **(5 marks)**
 - iv. Nitrogen **(5 marks)**

- 5a. Explain briefly how Carbon dioxide affect the quality of water **(5 marks)**
- b. Differentiate point source and non-point source of pollution. **(5 marks)**
- c. Highlight the symptoms and impact of eutrophication. **(10 marks)**