



**NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
DEPARTMENT OF ANIMAL SCIENCE & FISHERIES
EXAMINATION QUESTIONS (January, 2018)**

COURSE CODE: AFM 305
COURSE TITLE: LIMNOLOGY (2 CREDIT UNIT)
DURATION: 2 HOURS
INSTRUCTION: Answer COMPULSORY QUESTION 1 (25marks) and any other three (3) questions (15marks each)

QUESTION 1

- a) Define the following terms as it applies to Chemical Constituents of Natural Waters: Specific Conductance (Electrical Conductivity or Conductivity), Total dissolved solids, Total non-volatile solids, Total particulate matter and Total volatile solids. 5 marks
- b) Tabulate the various classifications of Lakes according to their richness and stratification features? 10 marks
- c) With the aid of a well-labeled diagram, show and describe the different zones of a Lake? 10 marks

Question 2

- a) Define the term reservoir (2mks)
- b) Describe the factors that influence the biology of reservoirs (4mks)
- c) Highlight five (5) differences between natural and man-made lakes (5mks)
- d) Explain the residence time of a reservoir (4mks)

Question 3

- a) What are the roles of bacteria in the food chain in a lake (2mks).
- b) Classify the aquatic organisms in the food chain depending on the role they play in the ecosystem and based on their habitats plankton (5mks)
- c) Give three differences between aquatic and terrestrial organisms (3mks)
- d) Describe the following organisms (5mks)
 - (i) Rotifera (ii) phytoplankton (iii) Benthos (iv) Neckton (v) Neuston (vi) Psammon

Question 4

- a) What is the use of paleolimnological techniques (2mks).
- b) List the methods of obtaining paleolimnological records (3mks)

- c) What is sediment coring? (2mks)
- d) Explain the application of paleolimnology in lake management (8mks).

Question 5

- a) Define thermal stratification (2mks)
- b) Explain briefly the different layers produced by thermal stratification? (6marks)
- c) Describe ^{14}C method of estimating algal population (4mks)
- d) Differentiate between oxygen methods and ^{14}C method of estimating algal population (3mks)

Question 6

- (a) Differentiate between marine and freshwater ecosystem? 4marks
- (b) Enumerate the three basic types of freshwater ecosystems. 6marks
- (c) Explain the term residence times of a reservoir and highlight two ways it can be estimated. 5 marks