

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY
DEPARTMENT OF FISHERIES AND AQUACULTURE TECHNOLOGY (FAT)
HARMATTAN SEMESTER EXAMINATIONS FAT 305: LIMNOLOGY (2 credits)

Time and date: 9am-12noon, Monday, 30th April, 2018.

Instructions: (i) Answer FOUR QUESTIONS only with at least one from each section (ii) Begin each question on a separate sheet of your answer booklet (iii) Write your registration Number very legibly on each page of your Answer booklet.

Questions:

Section A.

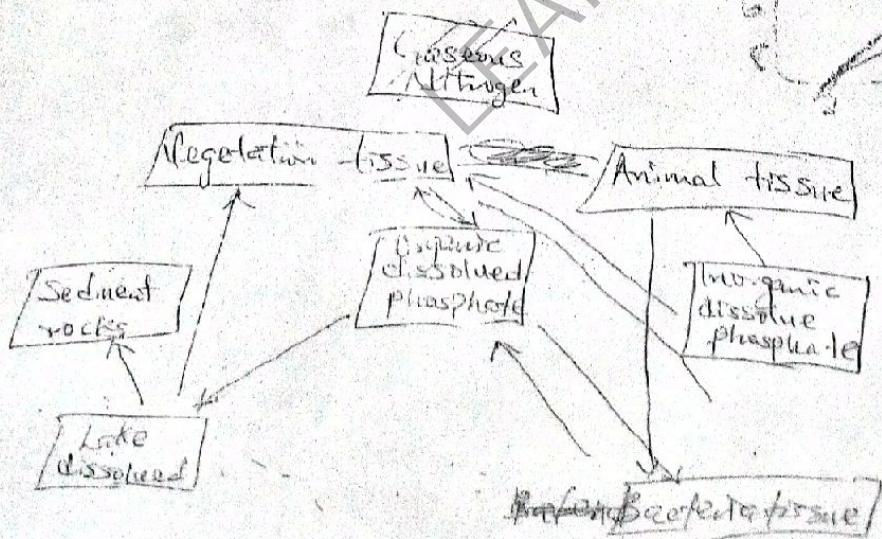
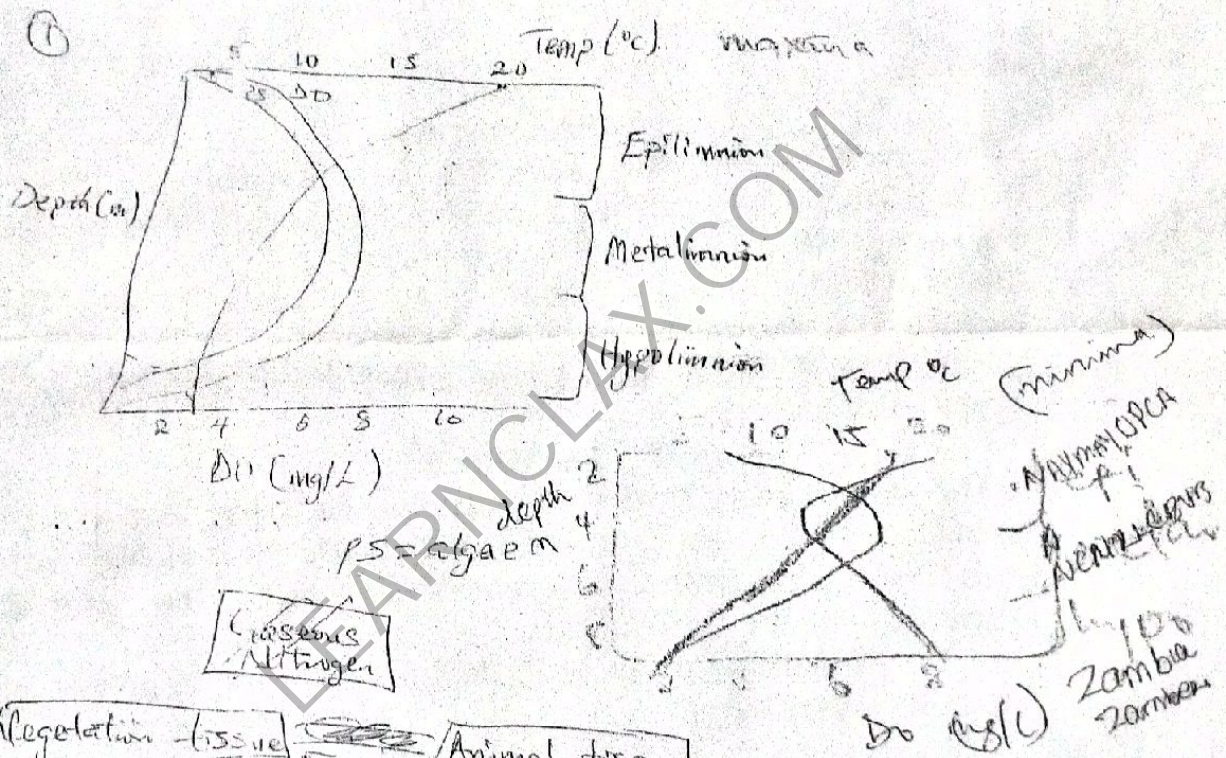
1. a. With well annotated and labeled diagrams, differentiate between the phenomena of metalimnetic dissolved oxygen maxima and minima in a typical lake.
b. State and discuss the factors responsible for the development of each phenomenon
2. Using clear illustrations, describe two different nutrient cycles a water body

Section B:

3. Comprehensively and exhaustively describe and discuss the various strategies that can be used to sample water for analysis, storage and preservation *in situ* and in the laboratory prior to analysis.
4. Define the following limnological terms with examples:
 - (i) Lotic ecosystems
 - (ii) Lentic
 - (iii) Waterfalls
 - (iv) Groundwater
 - (v) Spring
 - (vi) Pool
 - (vii) Puddle
 - (viii) Acquifer
 - (ix) Floodplain
 - (x) Hypolimnion

Section C:

- 5a list 10 African rivers, and 10 Nigerian rivers of importance with their locations
- b. Simply catalogue 10 World lakes, 10 Nigerian lakes (natural/floodplain or man-made reservoirs)
- 6a Define the term "Eutrophication" AND discuss point-by-point the causes of the phenomenon.
- b. Itemize the various categories/forms in which the nutrient "phosphorus" occur in natural freshwaters.



→ Major processes

phosphorus cycle

→ Minor process

Priscilla

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HARMATTAN SEMESTER EXAMINATIONS 2018/2019 SESSION.
COURSE: FAT 305: LIMNOLOGY

Date: Tuesday June 11, 2019. **Time** 2-5pm.

Instructions: Answer FOUR QUESTIONS with at least one from each section. Start each question on a separate sheet of the answer booklet.

Questions:

Section A.

- 1a. Compounds of nitrogen occur in natural waters and are of considerable interest to limnologists and environmentalists. Discuss the validity or otherwise of this statement.
- b. Itemize the different forms in which nitrogen compounds occur in the aquatic ecosystems.
- 2a. Phosphorus is another nutrient element that occurs in waters in different chemical configurations AND with those of Nitrogen, can constitute a threat to the aquatic environment: Discuss.
- b. Enumerate the various forms in which phosphorus occurs in natural waters.

Section B:

3. Explain the following concepts in limnology.
 - i Thermal stratification, illustrating the phenomenon with an annotated diagram.
 - ii Productivity
 - iii Classification/typology of lakes based on thermal stratification and productivity.
- 4.a Enumerate the properties of dissolved gases in natural waters AND their dynamics

- b Using well annotated diagrams only, show the occurrence of orthograde and clinograde dissolved oxygen profile in a lake

Section C:

- 5 Write a concise essay on the origin/geomorphological inception of rivers.
6. List five rivers AND five lakes known to you in Nigeria and African, with mention of their location eg Oguta Lake, Oguta, Imo State, Nigeria. River Nworie, Owerri, Imo State, Nigeria.
NB: total 20, and no repetition of names.