Charles Darwin University

Final Examination

Family Name						
Given Name/s						
Student Number						
Teaching Period	Semester 1, 2019					

ENV211 – Aquatic Ecology: Biota and Processes	DURATION
	Reading Time: 10 minutes
	Writing Time: 180 minutes

INSTRUCTIONS TO CANDIDATES

Section A: Suggested Time: 60 mins	Multiple Choice Questions: Answer ALL 50 questions. 1 mark per question. (Total marks = 50)
Section B: Suggested Time: 50 mins	Short Answer Questions: Answer ALL 10 questions. 2 marks per question. (Total marks = 20)
Section C: Suggested Time: 70 mins	Short Essay Questions: Answer EITHER Part A or Part B of each of the 4 questions. 7.5 marks per question. (Total marks = 30)

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.
This is a CLOSED BOOK examination
No calculators are permitted
No handwritten notes are permitted
No dictionaries are permitted

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 16 Page Book 1 x 4-Multiple Choice Answer Sheet 1 x Scrap Paper

THIS EXAMINATION IS PRINTED DOUBLE-SIDED.

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Section A
Multiple Choice Questions
Total No of Marks for this Section: 50

This section should be answered on the Answer Sheet provided. Please ensure that your name and student number have been written on the Answer sheet and placed in the completed Answer Booklet.

Marks for each question are indicated. Suggested time allocation for Section A: 60 mins

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(Marks: 1)

Section B
Short Answer Questions
Total No of Marks for this Section: 20

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated. Suggested time allocation for Section B: 50 mins

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Question 1

Identify the factors which affect a waterbodies likelihood of stratifying. Identify whether each factor increases or decreases the likelihood of stratification.

(Marks: 2)

Question 2

a) Define turbidity.
b) Briefly describe the different factors which contribute to turbidity in natural waters

(Marks: 2)

Question 3

Briefly describe the factors which control or influence the water regime in lotic systems

(Marks: 2)

Question 4

Briefly describe the relationship between permanence and predictability in inland waters. Describe the different levels of permanence and or predictability in inland waters.

(Marks: 2)

Question 5

Using a diagram, describe the location of reducing and oxidising environments within a standing water body. Identify the locations of high and low oxygen concentration.

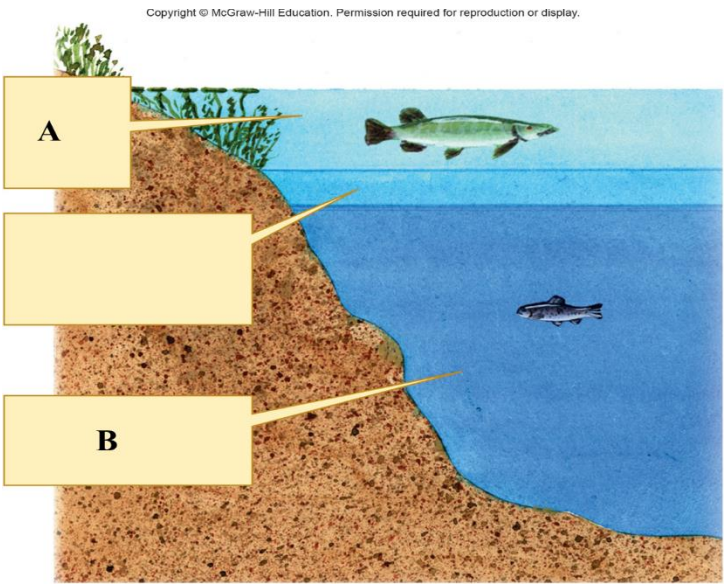
(Marks: 2)

Question 6

a) In rivers, the edge habitat is termed the “riparian zone”. What is the term used for the zone with a similar function and location in a lentic system?
b) Describe at least one of the functions of those zones?

(Marks: 2)

Question 7



Name the zones labelled as A and B in the figure above.

(Marks: 2)

Question 8

Explain what an autotroph and heterotroph are.

(Marks: 2)

Question 9

Name two post -disturbance recolonization processes and briefly describe them.

(Marks: 2)

Question 10

Name two types of transitional environments and briefly describe their main characteristics.

(Marks: 2)

Section C
Short Essay Questions
Total Number of Marks for this Section: 30

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated. Suggested time allocation for Section C: 70 mins

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Question 1

ANSWER ONE OF THE FOLLOWING:

Use text and diagrams as appropriate in your answers

EITHER

Describe the spatial and temporal patterns of connectivity in dryland river on-channel waterholes.

(Marks: 7.5)

OR

Describe the nested hierarchy of river systems.

(Marks: 7.5)

Question 2

ANSWER ONE OF THE FOLLOWING:

Use text and diagrams as appropriate in your answers

EITHER

Produce a pictorial conceptual model describing how physical and chemical characteristics vary through time in an ephemeral lake.

(Marks: 7.5)

OR

Describe the pattern of variation in total dissolved substances (TDS) concentration between the different catchment water stores and sources. Provide explanations for the observed patterns.

(Marks: 7.5)

Question 3

ANSWER ONE OF THE FOLLOWING:

Use text and diagrams as appropriate in your answers

EITHER

Draw an aquatic food web containing **FOUR** trophic levels, label each trophic level (e.g. tertiary consumer) and give an example for each level of either a species or the functional feeding group (e.g. piscivore).

(Marks: 7.5)

OR

Describe **TWO** of the models proposed by ecologists to conceptualize ecosystem processes in running waters and compare them.

(Marks: 7.5)

Question 4

ANSWER ONE OF THE FOLLOWING:

Use text and diagrams as appropriate in your answers

EITHER

Describe how **THREE** different types of aquatic biota respond to 1) re-wetting, 2) drying, damp and 3) completely dry phases in temporary standing waters.

(Marks: 7.5)

OR

Describe how surface waters and groundwaters are a single-connected resource and briefly describe at least **TWO** examples of this connection.

(Marks: 7.5)