



**PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES

DEPARTMENT OF NATURAL AND APPLIED SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE HONOURS	
QUALIFICATION CODE: 08BOSH	LEVEL: 8
COURSE CODE: EBM811S	COURSE NAME: ENVIRONMENTAL BIOLOGY AND AQUATIC ECOSYSTEM MANAGEMENT
SESSION: JULY 2022	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER (S):	Dr. Edosa Omoregie
MODERATOR:	Dr. Naftal Gabriel

INSTRUCTIONS	
<ol style="list-style-type: none">1. Answer all questions2. Write clearly and neatly3. Number your answers clearly	

PERMISSIBLE MATERIAL

Scientific Calculator

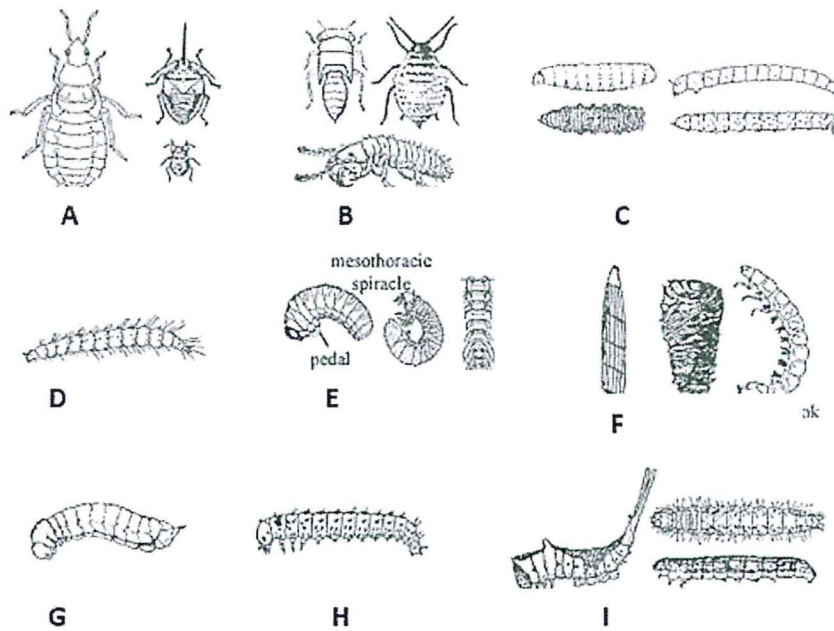
**THIS QUESTION PAPER CONSIST OF 3 PAGES
(Including this front page)**

Question 1

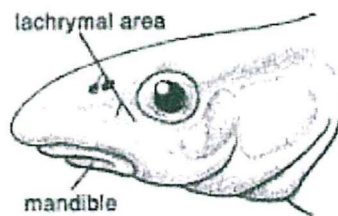
[20]

a) Give the orders of the following aquatic insects.

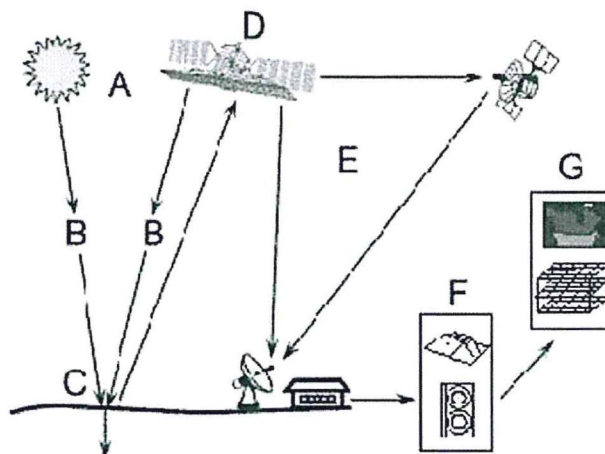
(9)



b) i. The diagram below is the head of a fish showing its mouthpart. What type of mouth part is this fish having? (2)



ii. Based on the fish mouthpart, what is the feeding habit of the fish? (2)



c). Identify the parts labeled as A, B, C, D, E, F and G in the above illustration of remote sensing used in the management of wetland resources. (7)

Question 2

[20]

- a) In a tabular form only, explain the main differences between a lotic and a lentic aquatic system. (10)
- b) With reference to physical and biological properties, discuss the erosional and depositional ecological habitat types of the river system. (10)

Question 3

[20]

- a) Briefly describe the following processes and their application in the treatment of wastewater: (6)
- i. Sedimentation
 - ii. Filtration
 - iii. Disinfection
- b) What is cultural eutrophication? Discuss the effect of cultural eutrophication on the physical, chemical and biodiversity of aquatic environment. (14)

Question 4

[20]

Living organisms play an important role in the recycling of many elements within an ecosystem. Discuss how bacteria and their biochemical reactions contribute to the recycling of nitrogen in the aquatic ecosystem. (20)

Question 5

[20]

- a) Review the various criteria for the designation of wetlands of international importance based on The Ramsar Convention Guidelines. (10)
- b) Explain the term aquaponic and its ecological importance. Briefly discuss the benefits of aquaponic to the sustenance of the environment. (10)