



FACULTY	AGRICULTURE, ENGINEERING AND NATURAL SCIENCES
SCHOOL	SCIENCE
DEPARTMENT	ENVIRONMENTAL SCIENCE
SUBJECT	AQUATIC ECOLOGY
SUBJECT CODE	EBL 3751
DATE	JULY 2022
DURATION	3 Hours
MARKS	120

SUPPLEMENTARY EXAMINATION

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Moderator: Prof. I. Mapaure (University of Namibia)

This memorandum consists of 3 pages (including this front page)

Instructions

- Section A: Answer **ALL** Questions
- Section B: Answer **TWO** questions only

SECTION A

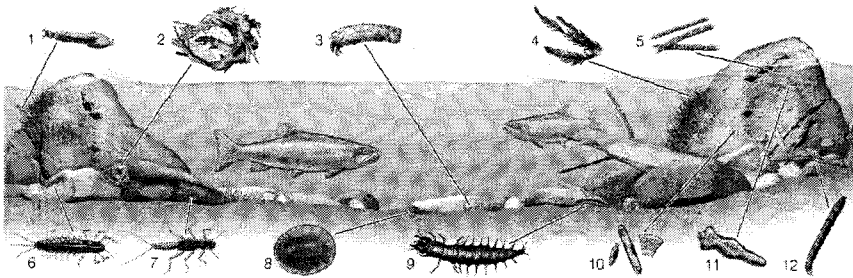
Answer all questions from this section

Question 1: [30]

- 1.1. Explain the mechanism that starts the Global Ocean Conveyor Circulation. (8)
- 1.2. Elaborate on the factors that may cause a decline in dissolved oxygen in the ocean. (6)
- 1.3. Explain the process where salt (NaCl) dissolves in oil. (3)
- 1.4. Discuss the implications that increased temperatures in the oceans can have on marine life. (10)
- 1.5. Explain why more earthquakes occur in the Pacific Ocean compared to the Atlantic Ocean. (3)

Question 2: [30]

- 2.1. Distinguish among the following: (6)
 - (a) Meroplankton
 - (b) Holoplankton
 - (c) Nanoplankton
- 2.2. Based on the taxa in the picture, which type of habitat is this? Explain your answer. (2)



- 2.3. If a stream has an average depth of 3 meters, an average width of 4 meters, and an average stream velocity of 0.24 m/s, what is the discharge rate or streamflow (Q)? Show your calculations. (2)
- 2.4. Tabulate the main differences between fast and slow flowing streams. (6)

- 2.5. Life on sandy and muddy beaches consists mainly of Epifauna, Infauna and Meiofauna.
 Explain the differences between these faunas. (3)
- 2.6. Describe how organisms move through soft-bottomed sediments. (4)
- 2.7. Why is the productivity poor in the deeper parts of the ocean than the surface layer? (3)
- 2.8. Explain eutrophication and algal blooms in lakes. (4)

SUB TOTAL MARKS: [60]

SECTION B

Answer any two questions from this section

Question 1 [30]

Describe the dynamics of the different stages of plate movements and the impact these have on the oceans. Supported and strengthen your arguments using examples.

Question 2 [30]

2.1. Discuss the phenomenon that cold ocean waters are more “nutrient rich” than tropical oceans. (15)

2.2. Explain the impacts that EL NINO can directly and indirectly have on people’s lives and livelihoods (such as food security) . (15)

Question 3 [30]

3.1. Describe three strategies used by intertidal organisms to cope with wave action. (10)

3.2. The change of a river along its length from the catchment to the mouth of the river can be described by the “River Continuum concept”. Review the River Continuum concept. (20)

**SUB TOTAL MARKS: [60]
 TOTAL MARKS [120]**