



**PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF NATURAL AND APPLIED SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE	
QUALIFICATION CODE: 07BOSC	LEVEL: 7
COURSE NAME: MARINE BIOLOGY 3B	COURSE CODE: MAB702S
SESSION: NOVEMBER 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER (S):	Prof. Edosa Omoregie
MODERATOR:	Dr. Johannes Iitembu

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer all questions in Sections A and B2. Answer any three (3) questions in Section C3. Write clearly and neatly4. Number your answers correctly

PERMISSIBLE MATERIAL

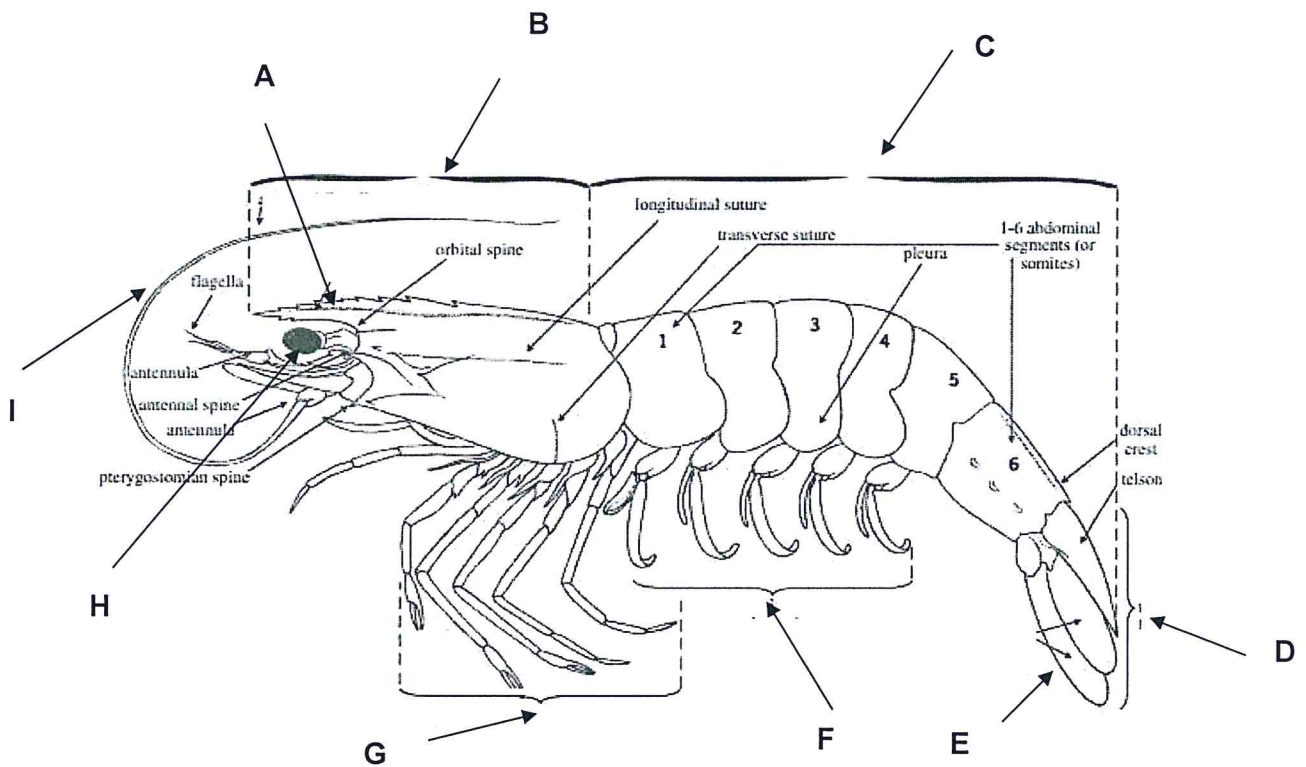
Scientific Calculator

THIS EXAMINATION QUESTION PAPER CONSISTS OF 5 PAGES
(Including this front page)

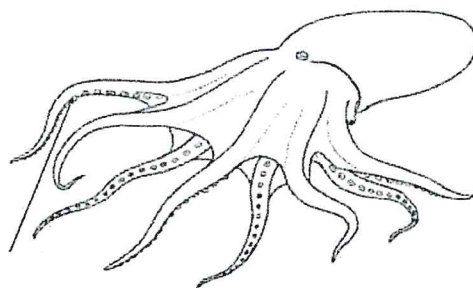
SECTION A

[25]

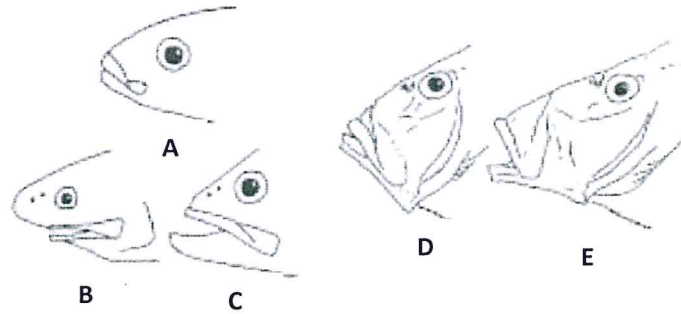
1. The diagram below is that of a Penaeid Shrimp. Identify the parts labelled as A, B, C, D, E, F, G, H and I. (9)



2. What is the Common Name, Order and Family to which the marine mollusc indicated below belongs to? (3)



3. Identify the types of mouth shown in the diagram of fish heads indicated as A, B, C, D and E below? (5)



4. All the following factors determines species distribution in rocky intertidal zones EXCEPT: (1)
- Susceptibility to predation
 - Wave action
 - Boring mechanism
 - Light and temperature
 - Salinity
5. All the following statements about algae are correct EXCEPT: (1)
- Examples include Lichens
 - Could be unicellular or multicellular
 - Several species have chlorophyll
 - Devoid of vascular tissues
 - Is a source of phycocolloids
6. Which of the following group of marine organisms is a not member of phylum Cnidaria? (1)
- Barnacles
 - Portuguese Man of War
 - Sponges
 - Jellyfish
 - Aurelia
7. Sea urchins are classified under? (1)
- Foraminifera
 - Mollusks
 - Brachiopods
 - Echinoderms
 - Ctenophores
8. The free-swimming form of marine cnidarians is referred to as? (1)
- Medusa
 - Polyp

- c. Nauplii
- d. Cyst
- e. Larva

9. The filamentous locomotory structures of the daphnia are referred to as? (1)
- a. Cilia
 - b. Antennae
 - c. Pleopods
 - d. Flagella
 - e. Pseudopodia
10. Salt tolerant plants such as *Salicornia* spp. are ecologically referred to as? (1)
- a. Mangroves
 - b. Angiosperms
 - c. Gametophytes
 - d. Halophytes
 - e. Sporophytes

SECTION B (SHORT EXPLANATION QUESTIONS): ANSWER ALL QUESTIONS [30]

11. a). Differentiate benthic scavengers from their detritivorous counterparts. (2)
- b). With the aid of a graphical representation, discuss the effect of benthos on the structural composition of grains in marine sediments. (8)
12. a). Explain the following terms as applied in Marine Biology. (6)
- i. LD₅₀
 - ii. Acclimation
 - iii. Homeothermy
- b). With the aid of graphical illustration, explain how a marine conformer and a regulator will respond to variation in salinity of the surrounding seawater? (4)
13. a). Briefly explain the relationship between the rate of oxygen consumption and metabolic activities of marine organisms. (4)
- b). Using suitable examples, explain the various evolutionary strategies used by marine prey organisms in avoiding predators in the environment. (6)

SECTION C (DISCUSSION QUESTIONS): ANSWER ANY THREE QUESTIONS

[45]

14. Discuss the major causes of the patchiness observed in the abundance of plankton in the open sea. (15)
15. With the aid of suitable diagrams, discuss the different physiological strategies used by the marine teleost and elasmobranch in adapting to the salinity their marine environment. (15)
16. Discuss the physical and chemical characteristics of the estuarine ecosystem and the various strategies employed for survival by estuarine organisms. (15)
17. a). With suitable graphical illustrations, discuss the concept of Maximum Economic Yield (MEY) in fisheries management. (8)
- b). Discuss the various management tools used in regulating fishing yield to MSY levels. (7)