



# TECHNICAL UNIVERSITY OF MOMBASA

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Faculty of Applied and Health Sciences

Department of environment and Health Sciences

BACHELOR OF SCIENCE IN FISHERIES AND OCEANOGRAPHY (2023S),

AFO 4105 : AQUATIC INVERTEBRATE ZOOLOGY

SPECIAL/SUPPLEMENTARY EXAMINATION,

**SERIES: MARCH 2025**

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Pick Date Select Month Pick Year **Instructions to Candidates**

This paper consists of **FOUR** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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## Question ONE (30 marks)

- a) Explain the meaning of the following branches of aquatic invertebrate Zoology
- i) Malacology (1 mark)
  - ii) Carcinology (1 mark)
  - iii) Myriapodology (1 mark)
- b) Using examples, define the following terms,
- i) Triploblastic invertebrates (2 marks)
  - ii) Coleomate invertebrates (2 marks)
- c) Explain the advantages of being sessile for aquatic invertebrates (2 marks)
- d) Explain the importance of cephalization in the evolution of invertebrates (2 marks)
- e) List 2 classes of Cnidaria and for each class indicate whether a medusoid stage is present in the life-cycle (4 mark)
- f) Outline the arthropod features found in the Phylum Annelida (3 marks)
- g) Explain the mode of transport in Sponges (Porifera) (3 marks)
- h) Using examples, define the following types of appendages in arthropods
- i) Uniramous (2 marks)
  - ii) Biramous (2 marks)
- i) Explain why anaerobic respiration are more feasible for endoparasites than for free-living ones (2 marks)

## Question TWO

- a) Outline the factors which lead to success of invertebrates (8 marks)
- b) Explain the importance of invertebrates in the ecosystem (8 marks)
- c) Explain the importance of Insects in forensic science (4 marks)

## Question THREE

- a) Outline the unique characteristics of the Phylum Annelida (5 marks)
- b) Describe the adaptations of the common earthworm *Lumbricus* sp. to its habitat (7 marks)
- c) Discuss the economic importance of the common earthworm, *Lumbricus* sp. (8 marks)

## Question FOUR

Describe the Phylum Platyhelminthes under the following headings;

- a) key anatomical features (8 marks)
- b) Physiological adaptations (6 marks)
- c) Life history features (6 marks)

## Question FIVE

- a) Discuss the economic benefits of arthropods (12 marks)
- b) Explain the methods of controlling invertebrate vectors and pests (8 marks)