



# TECHNICAL UNIVERSITY OF MOMBASA

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

END OF SEMESTER EXAMINATION,

**SERIES: DECEMBER 2024**

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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.**

Question ONE (30 marks)

- a) Using examples, outline the types of aquatic habitats for invertebrates (4 marks)
- b) Using examples, define the following terms,
  - i) Diploblastic invertebrates (2 marks)
  - ii) Pseudocoleomate invertebrates (2 marks)
- c) State the function of each of the following structures/cell types the invertebrates possessing them.
  - i) Gastrovascular cavity in Hydra (2 marks)
  - ii) Pinacocytes in Poriferans (2 marks)
- d) i) Outline Four (4) key features used in the classification of aquatic invertebrates (4 marks)
  - ii) Outline the three (3) types common types of classification systems (3 marks)
- e) State two advantages coelom formation confer to aquatic invertebrates (2 marks)
- f) Outline three (3) methods used to collect invertebrates (3 marks)
- g) Outline FOUR economic benefits of aquatic arthropods (4 marks)

**Question TWO**

- a) Explain the colonial theory of the origin of the metazoa (8 marks)
- b) Explain the major events involved in the evolution of invertebrates (12 marks)

**Question THREE**

- a) Name the major classes of Platyhelminthes (3 marks)

- b) Outline the major characteristics of Platyhelminthes (6 marks)
- c) Explain the modes of infection of helminthic parasites (3 marks)
- d) Using examples, discuss FOUR (4) physiological adaptations of helminthic parasites to their environment (8 marks)

**Question FOUR**

- a) Outline the major characteristics of arthropods (8 marks)
- b) Explain the adaptations of aquatic arthropods that enabled it to conquer their habitats (12 marks)

**Question FIVE**

- a) Describe the general life cycle of Trematoda (8 marks)
- b) State the adaptations that occur within the host to trematode infections (4 marks)
- c) Outline the parasitic adaptations of hookworms to parasitic life (8 marks)