MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2023/2024 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER

SCHOOL OF NATURAL RESOURCE, ENVIRONMENTAL STUDIES, AND AGRICULTURE

DIPLOMA IN TOURISM AND WILDLIFE MANAGEMENT

COURSE CODE: NDTW 121

COURSE TITLE: NATURAL HISTORY OF INVERTEBRATES

DATE: 15/5/2024   **TIME: 1100-1300 HRS**

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section **A** and any other **THREE** in section **B.**

This paper consists of 2 printed pages. Please turn over

SECTION A (25 MARKS). ANSWER ALL QUESTIONS

1. Define the following terms;
   i. Invertebrates
   ii. Entomology
   iii. Coelom

   (3marks)

2. Briefly describe the functions of ameobocytes cells in Porifera.   **(3marks)**

3. Marine Scientists say that the great barrier reef of Australia is more like the tropical rain forest of the oceans, however they are becoming endangered each and every day especially from human actions. Explain how human activities are threatening the existence of the corals in the both coastal and open marine waters.   **(3marks)**

4. With examples, list the **four** clades that constitute phylum Cnidaria.

   (4marks)

5. Contrast the skeleton of an echinoderm with that of an Arthropod.

   (2marks)

6. Flatworms and cnidarians differ in symmetry, with flatworms being —————and cnidarians being —————, but the animals of both phyla have —————cavities.   **(3marks)**

7. Explain the main difference between the digestive tract of a nematode and that of the gastro-vascular cavity of a planarian?   **(2marks)**

8. Outline the two ecological and two economic importance of phylum Porifera.   **(4marks)**

9. What organisms constitute the Class Cheliceriformes? Give examples.

   (1marks)

SECTION B (40 MARKS) ANSWER ANY THREE QUESTIONS

1. a) Briefly discuss the origin of invertebrates, providing short notes on the features of both Ediacaran and the burgess Shale fossil impressions found in Australia and Canada respectively. **(10marks)**

   b) Parasitic nematodes and Platyhelminthes like roundworm and tapeworms respectively have been known to affect humans and other animals like pigs' health wise. Outline measures which could be taken so as to control the health deficiencies and diseases spread from these organisms?

(5marks)

2.
   a) The invertebrates make 97% of the total number of organisms in the animal Kingdom while the vertebrates make only 3%. What could be the reason behind this? **(3marks)**

   b) Distinguish the following;
      i.   Protostome and Deuterostome
      ii.   Acoelomate, pseudo-coelomate, Coelomate
      iv.   Cephalization and segmentation
      v.   Complete and incomplete metamorphosis
      vi.   Annelids and nematodes

(12marks)

3. With an aid of a well label diagram, draw the invertebrate's phylogenetic cladogram and explain the major trends in invertebrate's evolution?

(15marks)

4. In separate, discuss the THREE **(3)** economic and TWO **(2)** ecological importance of the following THREE **(3)** phylum Porifera, Phylum Mollusca and Phylum Arthropoda that you might know of. **(15marks)**

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