FACULTY OF SCIENCE

NOVEMBER 2022

ZOO 1B10 ANIMAL DIVERSITY

EXAMIMATION 1

ASSESSOR(S)	**DR L MOKAE**
INTERNAL MODERATOR	**DR G PAHAD**
DURATION: 3:00HRS	**MARKS 75**
NUMBER OF PAGES: 3 PAGES	

INSTRUCTIONS:

- The assessment consists of six (6) questions; you need to **ANSWER ALL SIX QUESTIONS.**
- For discussion questions, use paragraphs and not tabulated points and take note of the key aspects asked in each question.
- Answer questions in detail, provide all relevant information for all the discussion questions asked, and provide diagrams if instructed to do so.
- Keep all parts of the same question together.

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QUESTION 1.

Define the following terms: **{10}**

1.1 Traditional Evolutionary Taxonomy
1.2 Cladogram
1.3 Binomial Nomenclature
1.4 Eutely
1.5 Parthenogenesis
1.6 Evolution
1.7 Cladistics
1.8 Syncytial
1.9 Homology
1.10 Zygotic meiosis

QUESTION 2 **{15}**

2.1 List and discuss three **(3)** characteristics/criteria used to define a species. (2 x 3 = 6)

2.2 Explain the typological species concept and what it stands for. (2)

2.3 Describe the differences between protonephridia and metanephridia. Give an example of any animal that possesses either of these structures. (2 x 2 = 4)

2.4 List and discuss three **(3)** Subdisciplines found in Zoology. (3)

QUESTION 3 **{5}**

3.1 Redraw the table below and complete grades of organisation and the Bauplanne for the following structures/animals**.** (10 ×½ = 5)

Structure	Grade of organisation	Bauplanne
1. Volvox		
2. Zygote		
3. Jellyfish		
4. Elephant		
5. Gastrula		

QUESTION 4 **{10}**

Discuss **(in detail)** what the following features with regard to living systems imply/mean.

4.1 Chemical uniqueness
4.2 Complexity and hierarchical organisation
4.3 Metabolism
4.4 Possession of a genetic programme
4.5 Environmental interaction (2 x 5=10)

QUESTION 5 **{20}**

5.1 'The presence of certain structures/characteristics among certain Arthropods undoubtedly contributes to their success as terrestrial animals." List and **discuss in detail,** three **(3**) features in terrestrial arthropods that have enhanced their success in terrestrial environment. (2x3 = 6)

5.2 Briefly discuss the components that make up the exoskeleton. (8 x ½ = 4)

5.3 List the hormones responsible for this process and how the exoskeleton is shed during moulting in arthropods. (10)

QUESTION 6 **[15]**

6.1 Discuss the phenomenon of torsion in the Mollusca and discuss the benefits thereof. (5)

6.2 The presence of a water vascular system is unique to Echinoderms. Describe **using labelled diagrams** the water vascular system of the asteroids. List all the **structures** present as well as their **functions** in this system. (10 x½ = 5)

6.3 **List and discuss in detail**, the five **(5)** unique characteristics of the chordates. (5)

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