

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2006

TITLE OF PAPER : INTRODUCTORY ZOOLOGY

COURSE CODE : B112

TIME ALLOWED : THREE HOURS

INSTRUCTIONS :

1. THIS PAPER HAS TWO SECTIONS, A AND B
2. USE ONE (1) ANSWER BOOKLET FOR EACH SECTION
3. IN SECTION A, ANSWER QUESTION 1 (COMPULSORY) PLUS ANY OTHER QUESTION; IN SECTION B, ANSWER ANY TWO QUESTIONS.
4. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS
5. WHEREVER POSSIBLE ILLUSTRATE YOUR ANSWERS WITH LARGE CLEARLY LABELLED DIAGRAMS

SPECIAL REQUIREMENTS: NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATORS

SECTION A

Question 1 (Compulsory)

1. Specialised cells with a common function are said to form _____
2. What is ecology? _____

3. Name 2 components of the biosphere _____
4. Dominant habitats on the earth's surface are the _____ habitats.
5. The _____ illustrates the transfer of energy between organisms in an ecosystem.
6. Name one way by which prey minimise predation. _____
7. _____ organisms are capable of converting light energy into chemical energy.
8. Heterotrophic feeding by ingestion is known as _____ feeding.
9. Organisms which are permanently attached to the substrate are said to be _____
10. K-selected species usually provide _____ parental care.
11. The naming of organisms is known as _____
12. Name a structure found in plant cells but absent in animals cells. _____
13. Name two functions of the pseudopodia. _____

14. Animals which use fluid to maintain their rigidity have a _____ skeleton.
15. Animals with exoskeletons need to _____ in order to allow growth.
16. In vertebrates, the notochord is replaced by the _____
17. The 1st terrestrial vertebrates belong to the class _____
18. Name one way by which birds streamlined their bodies. _____

19. Name one way by which mammals increase their chances of survival of their offspring. _____

20. Alternate forms of a gene are known as _____

21. In heterozygotes, the intermediate expression of a trait is due to _____

22. What is a dominant lethal allele? _____

23. _____ is the random exchange of alleles between populations.

24. What is sexual dimorphism? _____

25. Give an example of a pre-zygotic barrier which prevents reproduction between species. _____

[Total = 25 marks]

Question 2

Write a concise essay on the various types of interactions which may arise between and within species.

[Total = 25 marks]

Question 3

a. Compare and contrast feeding between the ciliates and amoebas. (15)

b. Enumerate features which have contributed to arthropod success. (10)

[Total = 25 marks]

SECTION B

QUESTION 4.

- (a) What is meant by 'open circulatory system'? (5 Marks)
- (b) By means of suitable sketches compare the hearts of amphibians, fish and mammals (20 Marks)
[Total Marks = 25]

QUESTION 5.

Write a brief essay on EACH of the following:

- (i) Mechanical digestion (6 Marks)
(ii) Autotrophic nutrition (5 Marks)
(iii) Swallowing in humans (8 Marks)
(iv) Gastric juice (6 Marks)
Total Marks = 25]

QUESTION 6.

Describe and discuss the formation of urine in mammals. (25 Marks)