

**UNIVERSITY OF SWAZILAND**

**MAIN EXAMINATION PAPER 2012**

**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. ANSWER ANY TWO QUESTIONS FROM EACH SECTION
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**

a. Using the nitrogen cycle, describe how an ecosystem functions as a unit, with energy and nutrients flow between named biotic and abiotic components. (15)

b. List and define the four factors of population size. (8)

c. What is the carrying capacity? (2)

[Total Marks = 25]

**QUESTION 2**

a. What phylum are vertebrates found in? What are the characteristics that distinguish the phylum Chordata from all of the invertebrate phyla? (9)

b. Differentiate between the following:

i. Community and ecosystem

ii. Incomplete dominance and codominance

iii. Abiotic resources and abiotic conditions

iv. Autotroph and heterotroph

(16)

[Total Marks = 25]

**QUESTION 3**

a. What reproductive adaptation did reptiles have that allowed them to reproduce independent of an aquatic environment? Illustrate and describe the functions of each of the primary components of this adaptation. (12)

b. What is the biosphere? Identify and discuss the functions of the following components of the biosphere:

i. Hydrosphere

ii. Atmosphere

iii. Lithosphere

(13)

[Total Marks = 25]

**SECTION B**

**QUESTION 4**

Describe and discuss the formation of urine in mammals.

[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**

What are the constituents of mammalian blood? What is the role of each of the constituents?

[Total Marks = 25]