BERGVLIET HIGH SCHOOL

Grade 8 **NATURAL SCIENCES - BIOLOGY** **18th November 2025**

Time: 1 hr **60 Marks**

Examiner: Miss G. O'Connor
Moderators: M. Brouwer, S. Lambrechts, M. Wentworth

Name: _____

Grade 8:_____

INSTRUCTIONS AND INFORMATION

Read the instructions carefully before answering the questions **(7 pages in total)**:

1. Answer all the questions in the spaces provided on this question paper.
2. Write neatly and legibly in blue or black ink only.
3. All diagram rules should be followed, if applicable.
4. Work neatly and carefully.

QUESTION	MARKS ACHIEVED	MAXIMUM MARKS
Question 1		15
Question 2		29
Question 3		16
TOTAL		**60**
		%

QUESTION 1

1.1 **Various possible answers are provided for each question. Write only the LETTER of the correct answer in the answer block provided.**

1.1.1 The arrow in a food chain is showing the transfer of…

A Nutrition
B Food
C Decomposition
D Energy

1.1.2 Which series has the levels of environmental organisation arranged from smallest to largest?

A Biosphere, community, ecosystem, population, individual
B Individual, population, community, ecosystem, biosphere
C Biosphere, ecosystem, community, population, individual
D Individual, community, population, ecosystem, biosphere

1.1.3 Which of these is a natural factor that can disturb the balance of an ecosystem…

A Poaching
B Floods
C Pollution
D Building dams

1.1.4 Which is NOT an example of a behavioural adaptation?

A Hibernation
B Migration
C Metamorphosis
D Mating dance

1.1.5 Animals that eat the carcasses (bodies) of already dead animals are called…

A Scavegers
B Predators
C Decomposers
D Saprophytes

(2 x 5 =10)

1.2 Give the correct word or the term for the following:

1.2.1 A set up where the independent variable is removed to compare its effect _____ (1)

1.2.2 The living component of an ecosystem _____ (1)

1.2.3 The area where an organism lives _____ (1)

1.2.4 The interactions between individuals of different species _____ (1)

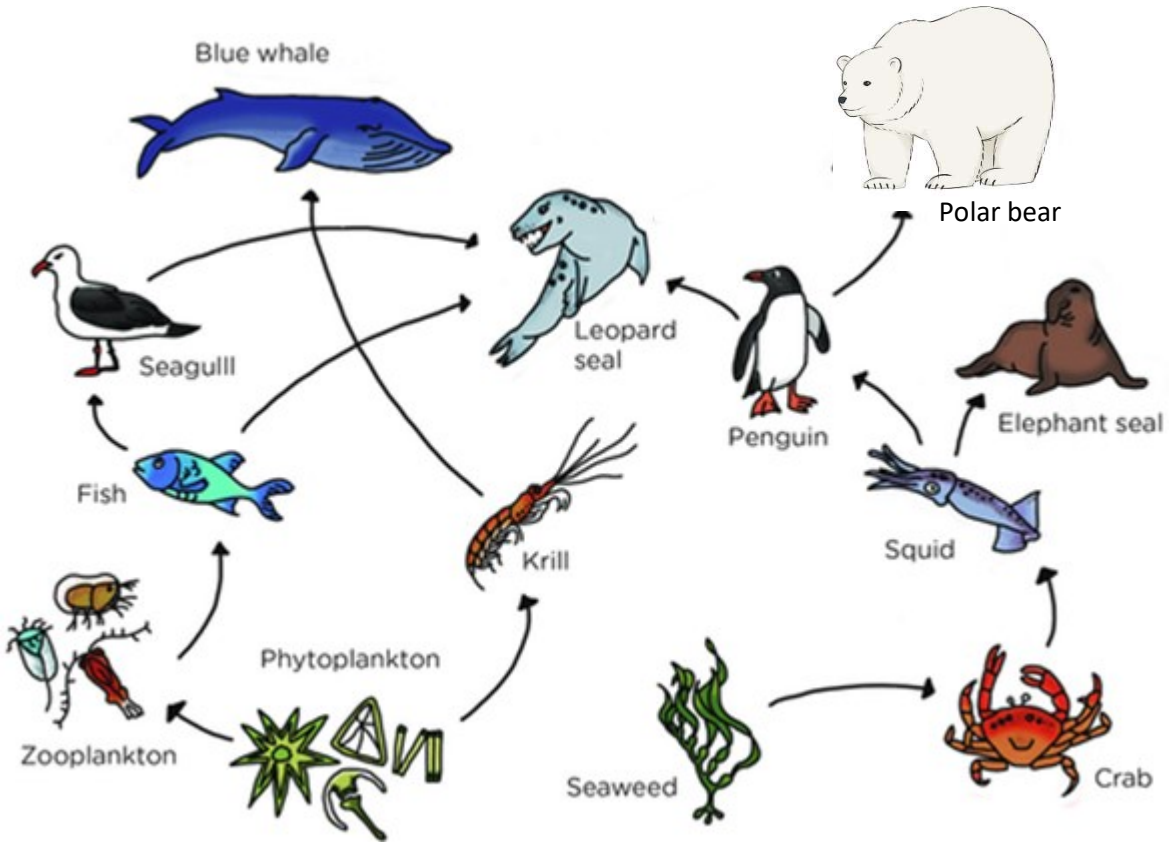
1.2.5 Organisms that cannot produce their own food_____ (1)

(5)

[15]

QUESTION 2

Study the food web below and answer the questions that follow:



2.1 Identify and construct ONE food chain from the food web above, containing FIVE organisms.

_____ (5)

2.2 From the food web, identify ONE:

a) producer _____

b) primary consumer _____

c) secondary consumer _____

d) tertiary consumer _____ (4)

2.3 Cape Town has a population of African Penguins living on Boulder's Beach. Over time, the population has been steadily decreasing. Below is a table showing the penguin population over the past 5 years:

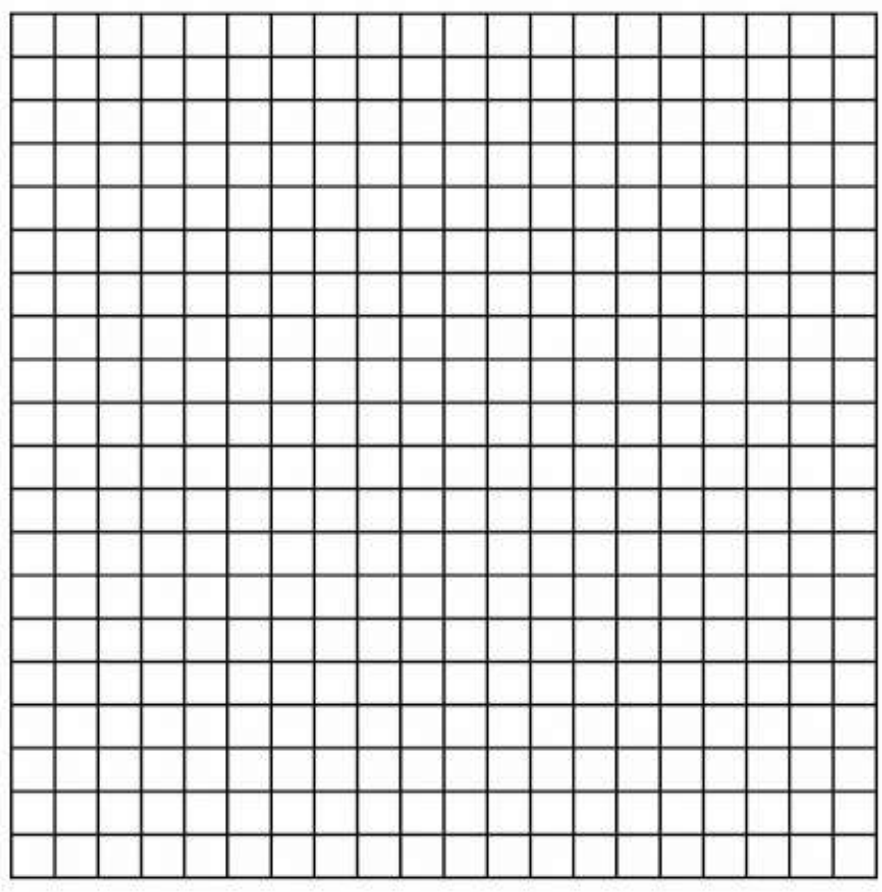
Year	Penguin population (in 1000s)
2020	3.2
2021	2.9
2022	2.6
2023	2.3
2024	1.9

2.3.1 Looking at the food web, explain what effect this decrease in penguins would have on the population of seaweed. (3)

_____

_____

2.3.2 Draw a **line graph** showing the population of penguins over 5 years. (6)



2.3.3 Penguins feed largely on squid. Squid can bioluminesce (glow) using chemical processes in their bodies, and change their colour in order to avoid being seen by predators.

a) Bioluminescence is an example of what type of adaptation

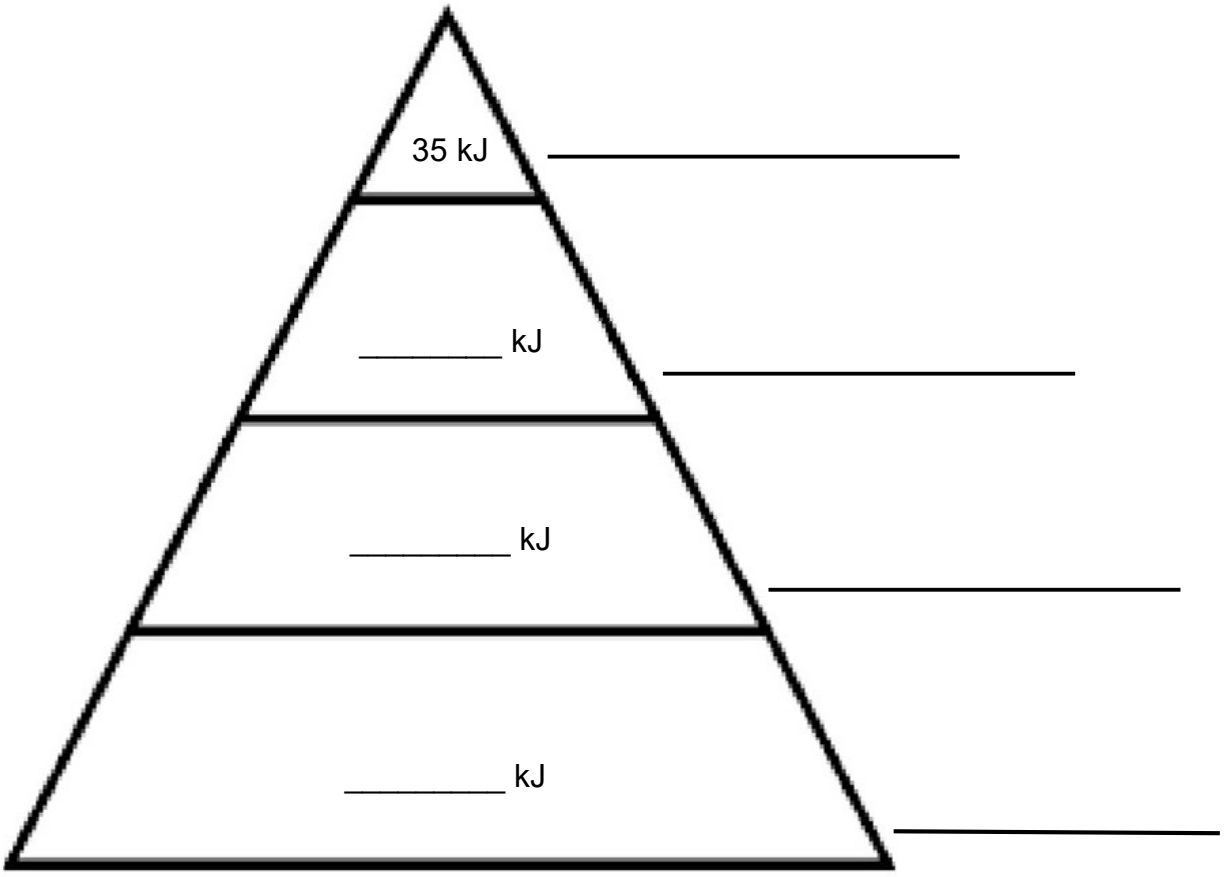
(structural/behavioural/functional)? _____ (1)

b) The ability to blend in with the environment is called _____ (1)

2.3.4 State 3 adaptations of the **polar bear**. (3)

1. _____
2. _____
3. _____

2.4 Complete the following energy pyramid, filling in the energy values and naming the trophic levels: (6)



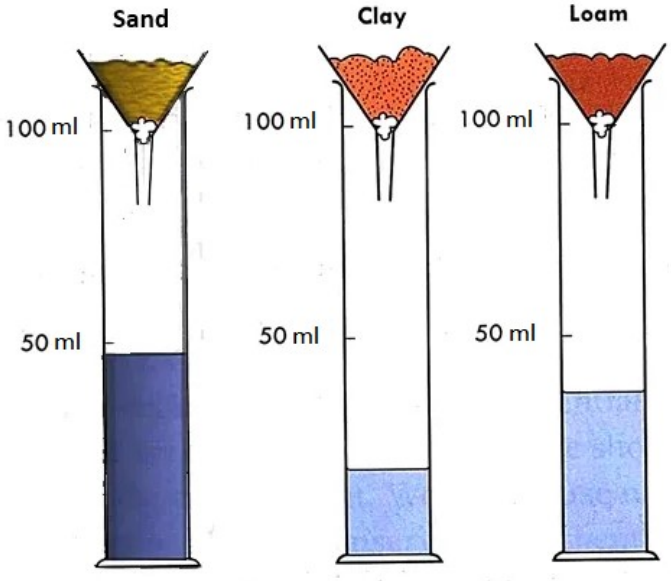
[29]

QUESTION 3

A group of Grade 8 learners wanted to investigate the water holding capacity of different types of soils.

The following procedure was followed:

- They collected three types of soil: sand, loam, and clay.
- A sample of the same amount of each type of soil was placed in a funnel lined with filter paper.
- 100ml of water was added to each funnel at the same time.
- The water that passed through the soil was collected after 5mins.



3.1.1 Give the:

a) Independent variable: _____ (1)

b) Dependent variable: _____ (1)

3.1.2 Give 3 factors that were kept constant in the experiment: (3)

1. _____

2. _____

3. _____

3.1.3 Why is it important that variables besides the independent variable are kept constant in an investigation? (1)

_____

3.1.4 State ONE way in which the Grade 8s could improve the reliability of their results. (1)

_____

3.1.5 Give a conclusion for the investigation. (2)

_____

_____

3.1.6 What type of factor is soil in an ecosystem? (1)

_____

3.1.7 How have cacti adapted their roots to take into account the water holding capacity of sand? (2)

_____

_____

_____ **[12]**

3.2 The mirror orchid produces flowers that look and smell like a female wasp. The male wasp mistakes the flower for a female wasp, and tries to mate with it. The wasp transfers pollen to the wasp, and the wasp drinks the nectar of the orchid.



3.2.1 What type of symbiotic relationship is occurring between the two organisms? (1)

_____

3.2.2 Explain your answer to QUESTION 3.2.1. (2)

_____

_____

3.2.3 Which deceptive adaptation is the orchid using? (1)

_____ **[4]**

[16]

TOTAL: 60 MARKS