Province of the
EASTERN CAPE
EDUCATION

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Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

GRADE 11

MARCH 2025

LIFE SCIENCES CONTROLLED TEST 1

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MARKS:50 **TIME: 50 minutes**

This question paper consists of 7 pages.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Write ALL the answers in your ANSWER BOOK.
3. Start the answer to EACH question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
6. Do ALL drawings in pencil and label them in blue or black ink.
7. Draw diagrams or flow charts ONLY when asked to do so.
8. The diagrams in this question paper are NOT necessarily drawn to scale.
9. Do NOT use graph paper.
10. You may use a non-programmable calculator, protractor and a compass where necessary.
11. Write neatly and legibly.
12. Round off all calculations to two decimals after the comma.

SECTION A

QUESTION 1

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A to D) next to the question number (1.1.1 to 1.1.2) in your ANSWER BOOK, for example 1.1.3 A.

1.1.1 Which group of micro-organisms fix nitrogen in the roots of some plants and obtain nutrition in return?

A Fungi
B Protists
C Bacteria
D Viruses

1.1.2 Which of the following is a feature of an insect-pollinated flower?

A Petals are large and brightly coloured
B Large anthers with long filaments
C Small, light and smooth pollen
D Stigmas are large and feathery (2 x 2) **(4)**

1.2 Give the correct **biological term** for each of the following descriptions. Write only the term next to the question number (1.2.1 to 1.2.2) in your ANSWER BOOK.

1.2.1 Organisms that are immobile and attached to one place for life

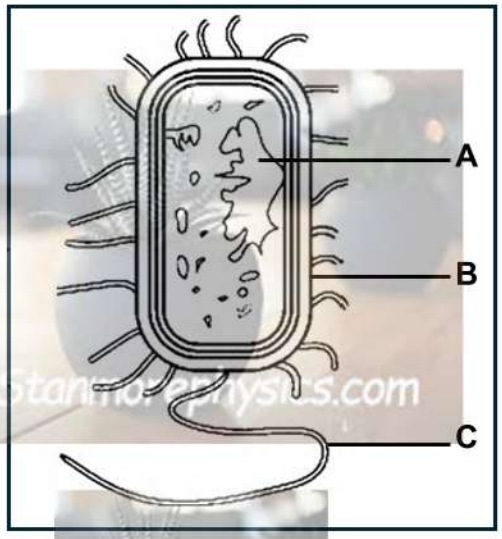
1.2.2 Plant that lacks true roots, stems and leaves (2 x 1) **(2)**

1.3 Indicate whether each of the statements in COLUMN I applies to **A ONLY**, **B ONLY**, **BOTH A AND B or NONE** of the items in COLUMN II. Write **A only**, **B only**, **both A and B,** or **none,** next to the question number (1.3.1 to 1.3.2) in the ANSWER BOOK.

	COLUMN I	COLUMN II
1.3.1	Produce spores	A: Bryophytes B: Angiosperms
1.3.2	Triploblastic	A: Platyhelminthes B: Annelida

(2 x 2) **(4)**

1.4 The diagram below shows the structure of a bacterial cell.



1.4.1 Name the shape of the bacterial cell shown. (1)

1.4.2 Give the LETTER and NAME of the part that:

(a) Assists with the movement of the bacteria (2)

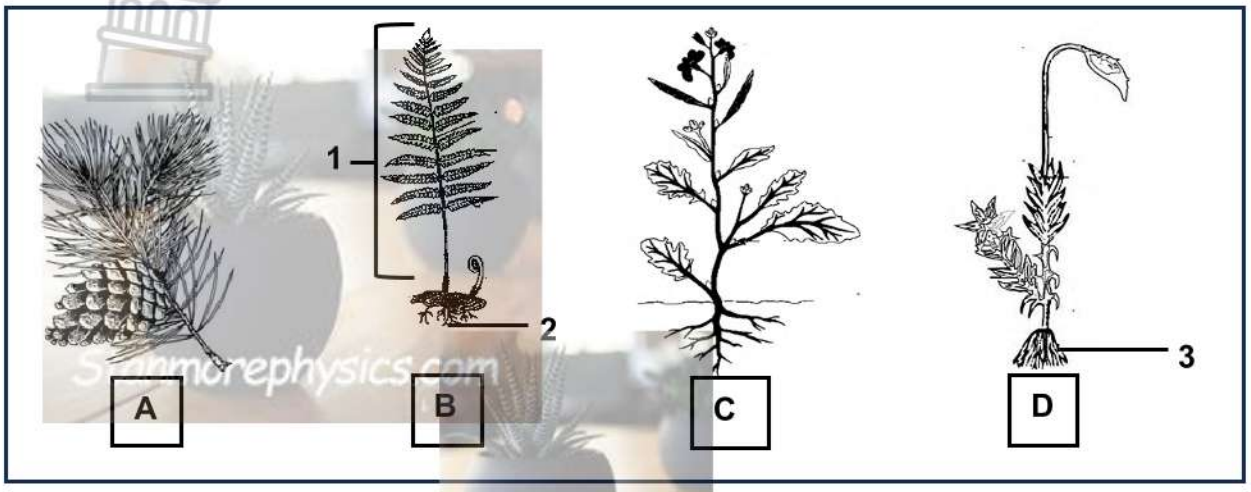
(b) Contains most of the genetic material (2)
(5)

TOTAL SECTION A: 15

SECTION B

QUESTION 2

2.1 Study the diagram of plants or part of plants from different plant groups.



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2.1.1 Identify plant group **A** and **B**. (2)

2.1.2 Identify parts labelled number **1**,**2** and **3**. (3)

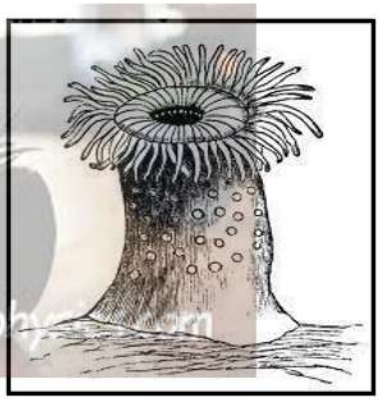
2.1.3 Explain why plant **A** and **C** are important in plant reproduction . (1)

2.1.4 Name the plant group would be the MOST successful land plant? (1)

2.1.5 Give a reason to support your answer to QUESTION 2.1.4. (1)

2.1.6 Give TWO characteristics which make plant **A**, a vascular plant. (2)
(10)

2.2 Examine the sketch below and answer the questions that follow.



2.2.1 Name the kingdom and phylum to which this animal belongs. (2)

2.2.2 Give the term used for the one digestive opening displayed in this sketch. (1)

2.2.3 State the:

(a) Type of symmetry displayed by this animal (1)

(b) Main advantage and disadvantage of this type of symmetry (2)

2.2.4 State what is meant by cephalisation (2)

(8)

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QUESTION 3

3.1 A Grade 11 class wanted to investigate the comparative preference of hummingbirds on two distinct floral species, *A. formosa* and *A. pubescence*.

They:
- Determined the preference by counting how many times the hummingbirds visit the flowers
- Recorded the total number of visits of the hummingbirds to the flowers over a period of 24 hours



The table below shows the number of visits of hummingbirds to the different flowers.

Flower species	Number of visits to the flower by the Hummingbirds
A. formosa	81
A. pubescens	5

3.1.1 Identify the *dependent variable.* (1)

3.1.2 State a conclusion that can be drawn from the results. (1)

3.1.3 State TWO ways in the validity of this investigation can be improved. (2)
(4)

3.2 Post-exposure prophylaxis (PEP) is a short course of antiretroviral medication that can prevent HIV after a possible exposure. It should be taken within 72 hours of exposure.

The table below shows how effective Post Exposure Prophylaxis (PEP) drugs are if taken after different periods.

Period of Exposure (hours)	0	24	72	76	96
Effectiveness (%)	100	100	52	0	0

3.2.1 Draw a line graph to show the data in the table above. (6)

3.2.2 Use your graph to determine the percentage effectiveness of administering the PEP drugs 48 hours after exposure to HIV. (1)

3.2.3 Explain your answer to QUESTION 3.2.2. (1)
(8)

3.3 Describe how bacteria can be used to produce human insulin. **(5)**
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TOTAL SECTION B: 35
GRAND TOTAL: 50