KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 11

LIFE SCIENCES

PROVINCIAL STANDARDISED ASSESSMENT

MARCH 2026

MARKS: 100

TIME: 2 hours

N.B. This question paper consists of 11 pages.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Write ALL the answers in the ANSWER BOOK.
3. Start the answers 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, tables 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.
11. Write neatly and legibly.

SECTION A

QUESTION 1

1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A – D) next to the question number (1.1.1 to 1.1.6) in the ANSWER BOOK, e.g. 1.1.7 D.

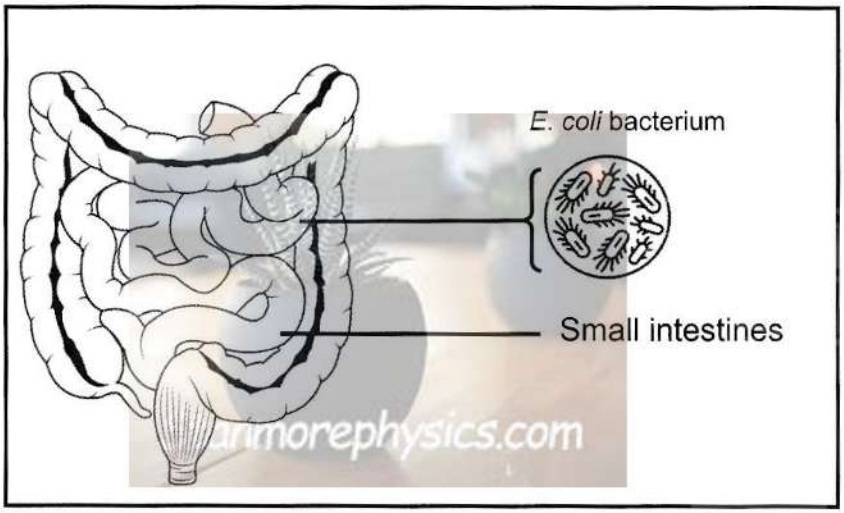
1.1.1 The most advanced and most successful terrestrial plant group that provide fruits as source of food is …

A gymnosperms.
B angiosperms.
C pteridophytes.
D bryophytes.

1.1.2 Primary taxonomic rank in the biological classification system, situated below the kingdom and above the class is …

A family.
B genus.
C phylum.
D order.

QUESTION 1.1.3 AND 1.1.4 ARE BASED ON THE DIAGRAM BELOW



1.1.3 The *E. coli* strains reside in the human intestine, using the undigested food for nutrients, while providing the human with vitamins.
The type of symbiotic relationship displayed in the diagram is …

A mutualism.
B parasitism.
C commensalism.
D neutralism.

1.1.4 Below is the list of different characteristics:

(i) Eukaryotic
(ii) Multicellular
(iii) Reproduce by binary fission
(iv) Have flagellum for movement

Which ONE of the following combinations are CORRECT characteristics of *E. coli?*

A (i), (ii) and (iv) only
B (iii) and (iv) only
C (i), (ii), (iii) and (iv)
D (i), (iii) and (iv) only

1.1.5 Seeds are better suited than spores because they …

A have limited food supply.
B are smaller.
C are dispersed by wind only.
D can remain dormant for long periods of time.

1.1.6 An investigation was carried out to determine the effect of temperature on bread mould growth, 2 breads were divided into two groups.

The results are shown in the table below.

TEMPERATURE (^{0}C)	BREAD MOULD GROWTH (MM^2)	
	GROUP A	GROUP B
20	22	0
29	35	0
38	12	0

Which ONE of the following statements is CORRECT based on the results in the table?

A **Group B** is included to ensure the growth of bread mould in **Group A** is due to temperature only
B **Group A** is included to ensure the growth of bread mould in **Group B** is due to temperature only
C **Group B** is included to improve the reliability of the results in the investigation
D Temperature has no effect in bread mould growth in **Group A** and **B**

(6 x 2) **(12)**

1.2 Give the correct **biological term** for EACH of the following descriptions. Write only the term next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK.

1.2.1 Phylum to which vertebrates belong.

1.2.2 Name of microorganism that causes tuberculosis in human.

1.2.3 The ability of the human body to produce antibodies to protect the body.

1.2.4 The process of transferring pollen grains from the anther of one flower to the stigma of another flower of the same specie.

1.2.5 Type of symmetry that cannot be divided into equal halves in any plane.

1.2.6 The use of living organisms to modify products and processes to improve human life. stanmorephysics.com

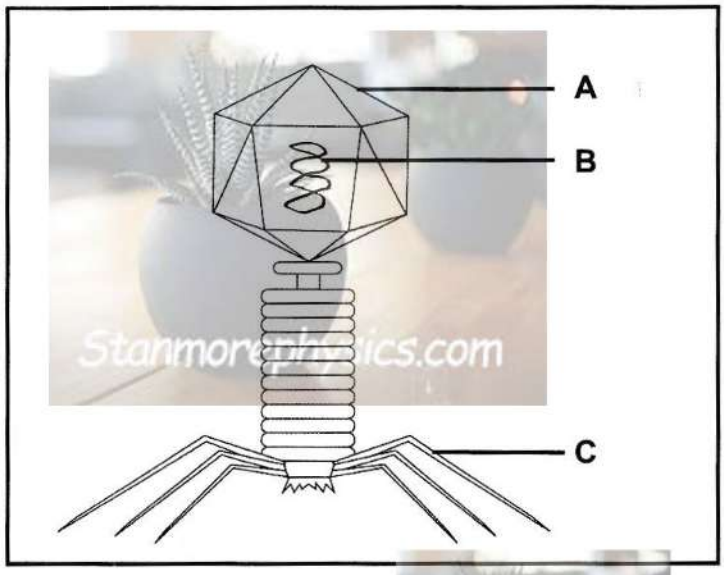
1.2.7 Bacteria that manufacture their own food using the energy from the sun. (7 x 1) **(7)**

1.3 Indicate whether each of the descriptions 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 1.3.3) in the ANSWER BOOK.

	COLUMN I	COLUMN II
1.3.1	The part that is formed from a fertilized ovule	A: Seed B: Fruit
1.3.2	Phylum that consists of coelomate organisms	A: Platyhelminthes B: Arthropoda
1.3.3	Antibiotics are effective only against	A: Bacterial infection B: Viral infection

(3 x 2) **(6)**

1.4 The diagram below shows a microorganism that infects bacteria.



1.4.1 Name the microorganism above. (1)

1.4.2 List TWO general characteristics of the microorganism mentioned in QUESTION 1.4.1. (2)

1.4.3 Give the LETTER of the part that:

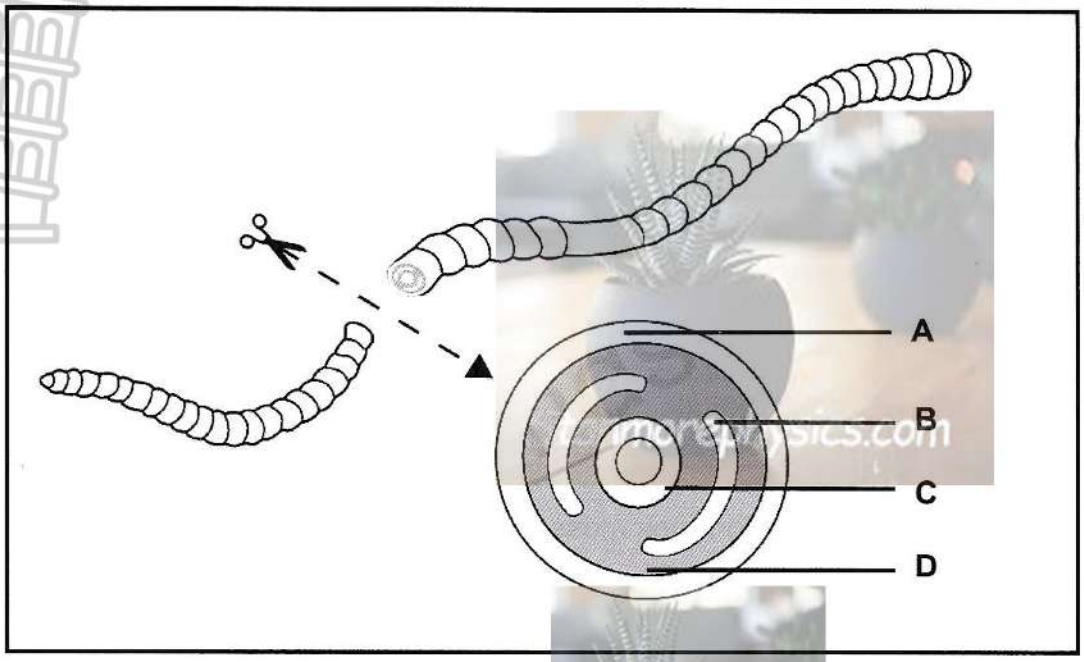
(a) Is used to penetrate the cell wall of the bacteria (1)

(b) Is the protein shell enclosing its genetic material (1)

(c) Carries the genetic material of the microorganism (1)

(6)

1.5 The diagram below shows a body plan of an earthworm.



1.5.1 Name the:

(a) Phylum on which the organism above belongs. (1)

(b) Body plan associated with the phylum mentioned in QUESTION 1.5.1 (a). stanmorephysics.com (1)

(c) Type of gut for the organism above. (1)

1.5.2 Identify part:

(a) A (1)

(b) C (1)

1.5.3 Give the LETTER and NAME of the part that:

(a) Act as hydrostatic skeleton (2)

(b) Develops into a wide range of muscles and organs (2)

(9)

TOTAL SECTION A: 40

SECTION B

QUESTION 2

2.1 Read the extract below.

THREATS TO MOSS HABITATS

As with many plants and animals, habitats of mosses are being destroyed due to human activities or environmental changes. Habitat destruction of mosses occurs through deforestation, urban development, or by agriculture.

Increasing global temperatures alter the moisture levels and the rising temperatures destroy habitats where moss could flourish in the past. The sexual reproduction of mosses can also be disturbed.

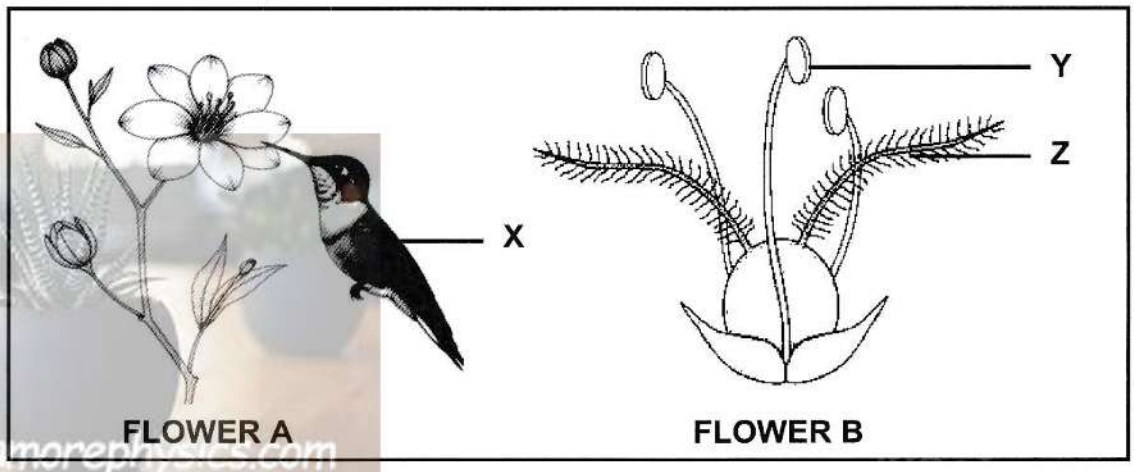
2.1.1 Name the kingdom to which moss plant belong. (1)

2.1.2 From the extract, give TWO main causes of habitat destruction of moss. (2)

2.1.3 Explain how increased temperatures affect sexual reproduction of mosses. stanmorephysics.com (2)

(5)

2.2 The diagrams below show adaptations of flowers for different pollinators.



2.2.1 Identify the pollinating agent **X** (1)

2.2.2 List TWO general characteristics of the division to which the above flowers belong. (2)

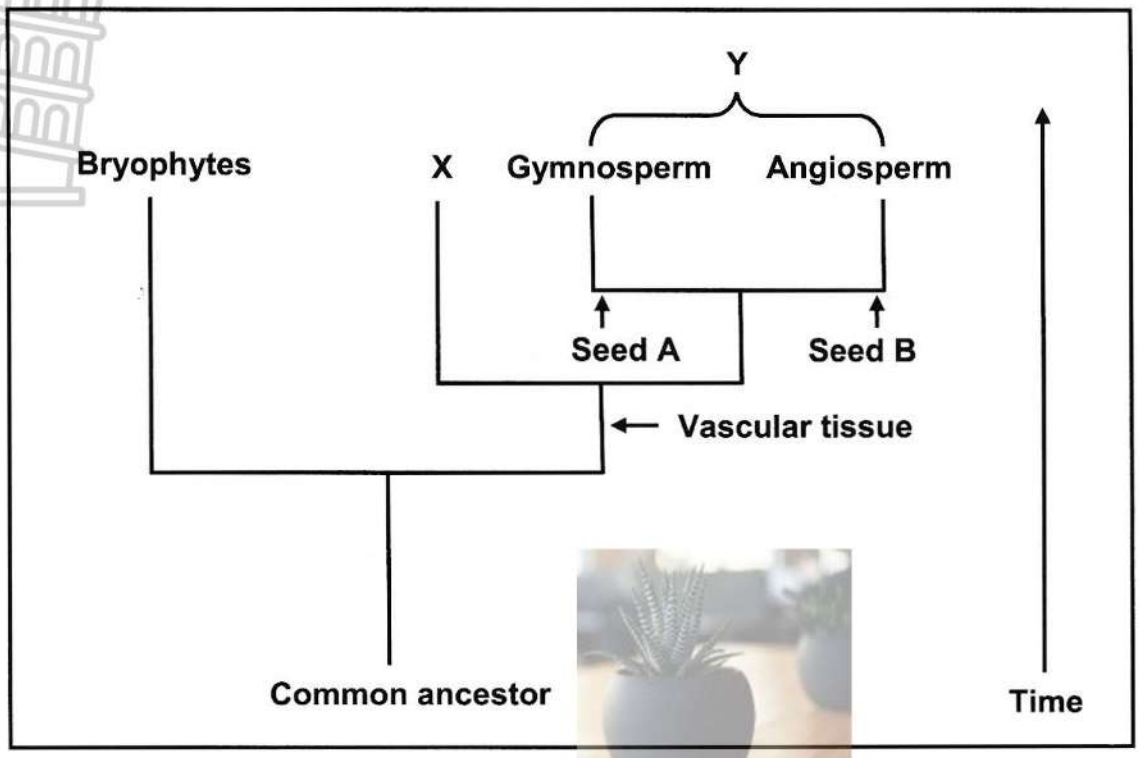
2.2.3 Describe the role of part **Y** in reproduction of plants. (3)

2.2.4 Tabulate TWO differences in petals of **FLOWER A** and **FLOWER B** (5)

2.2.5 Explain how part **Z** is structurally suited for its function. (3)

(14)

2.3 The diagram below shows a possible evolutionary relationship within plant diversity.



2.3.1 Name the diagram above. (1)

2.3.2 Identify the following plant groups:

(a) **X** (1)

(b) **Y** (1)

2.3.3 State ONE difference between seed **A** and seed **B** (2)

2.3.4 Explain how plant group **X** is suited for a terrestrial habitat. (2)

2.3.5 Seed banks are a type of gene bank that stores seeds from a variety of different crops and trees.

Explain TWO reasons why seed banks are important. (4)

(11)

[30]

QUESTION 3

3.1 At least 3.2 billion of the world's people are still at risk of contracting malaria, and an estimated 350-500 million clinical malaria cases occur annually. More than 600,000 malaria deaths occur in Africa. stanmorephysics.com

The table below shows the number of malaria case notifications received via the Notifiable Medical Conditions Surveillance System (NMC-SS) in South Africa by endemic provinces, from March 2023 to August 2023.

Month	Limpopo	KwaZulu-Natal	Gauteng
Mar	145	38	89
Apr	136	37	104
May	129	21	96
Jun	83	17	49
Jul	63	16	40
Aug	24	15	32
	580	144	410

3.1.1 Name the:

(a) blood parasite that causes malaria. (1)

(b) vector that spreads malaria. (1)

(c) TWO provinces with the total highest malaria cases. (2)

3.1.2 Give TWO common symptoms in malaria patients. (2)

3.1.3 Explain how weather-related factors from May to August caused the decline in malaria cases. (2)

3.1.4 Draw a bar graph to show the number of malaria cases by endemic provinces in August 2023. (6)

(14)

3.2 Describe the role of protista and fungi in maintaining balance in the environment and web of life. **(5)**

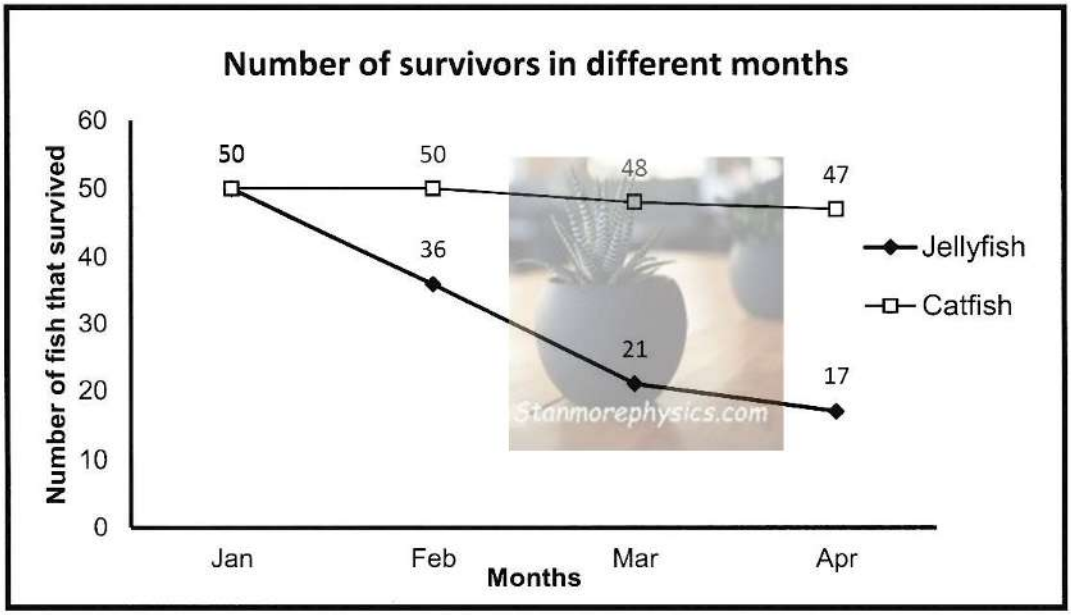
3.3 Group of researchers conducted an investigation to determine the effect of cephalisation on survival chances of aquatic animals.

The procedure was as follows:

- 50 male jellyfish and 50 male catfish were collected from the Indian ocean.
- Both species of fish were kept in the same lake with predators for the period of 4 months.
- The number of all fish present in the lake were counted from Jan to Apr. In total, 64 fish were collected in April and 47 were catfish and 17 were jellyfish.

NOTE: Jellyfish belong to Phylum Cnidaria
: Catfish belong to Phylum Chordata

The results are shown in the line graph below.



3.3.1 State the:

(a) Independent variable (1)

(b) Dependent variable (1)

3.3.2 State TWO ways in which the researchers ensured the reliability. (2)

3.3.3 Calculate the percentage decrease of jellyfish species between January and February. Show ALL working. stanmorephysics.com (3)

3.3.4 Describe the results obtained in this investigation. (2)

3.3.5 Explain why the researchers used the same gender of fish throughout the investigation. (2)

(11)

[30]

TOTAL SECTION B: 60

GRAND TOTAL: 100

FINAL

KWAZULU-NATAL PROVINCE

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GRADE 11

LIFE SCIENCES

MARKING GUIDELINES

PROVINCIAL STANDARDISED ASSESSMENT

MARCH 2026

MARKS: 100

This marking guideline consists of 8 pages.

PRINCIPLES RELATED TO MARKING LIFE SCIENCES MARCH 2026

1. **If more information than marks allocated is given**
   Stop marking when maximum marks are reached and put a wavy line and 'max' in the right-hand margin.

2. **If, for example, three reasons are required and five are given**
   Mark the first three irrespective of whether all or some are correct/incorrect.

3. **If whole process is given when only part of it is required**
   Read all and credit relevant part.

4. **If comparisons are asked for and descriptions are given**
   Accept if differences / similarities are clear.

5. **If tabulation is required but paragraphs are given**
   Candidates will lose marks for not tabulating.

6. **If diagrams are given with annotations when descriptions are required**
   Candidates will lose marks

7. **If flow charts are given instead of descriptions**
   Candidates will lose marks.

8. **If sequence is muddled and links do not make sense**
   Where sequence and links are correct, credit. Where sequence and links is incorrect, do not credit. If sequence and links becomes correct again, resume credit.

9. **Non-recognised abbreviations**
   Accept if first defined in answer. If not defined, do not credit the unrecognized abbreviation but credit the rest of answer if correct.

10. **Wrong numbering**
    If answer fits into the correct sequence of questions but the wrong number is given, it is acceptable.

11. **If language used changes the intended meaning**
    Do not accept.

12. **Spelling errors**
    If recognizable accept provided it does not mean something else in Life Sciences or if it is out of context.

13. **If common names given in terminology**
Accept provided it was accepted at the National memo discussion meeting.

14. **If only letter is asked for and only name is given (and vice versa)**
No credit

15. **If units are not given in measurements**
Candidates will lose marks. Memorandum will allocate marks for units separately

16. Be sensitive to the **sense of an answer, which may be stated in a different way**.

17. **Caption**
All illustrations (diagrams, graphs, tables, etc.) must have a caption

18. **Code-switching of official languages (terms and concepts)**
A single word or two that appears in any official language other than the learners' assessment language used to the greatest extent in his/her answers should be credited, if it is correct. A marker that is proficient in the relevant official language should be consulted. This is applicable to all official languages.

SECTION A

QUESTION 1

1.1	1.1.1	B✓✓		
	1.1.2	C✓✓		
	1.1.3	A✓✓		
	1.1.4	B✓✓		
	1.1.5	D✓✓		
	1.1.6	No answer	(5 x 2)	**(10)**

1.2	1.2.1	Chordata ✓		
	1.2.2	Bacteria✓/ Mycobacterium tuberculosis		
	1.2.3	Immunity ✓		
	1.2.4	pollination ✓		
	1.2.5	Asymmetry✓		
	1.2.6	Biotechnology✓		
	1.2.7	Photosynthetic✓/Autotrophic	(7 x 1)	**(7)**

1.3	1.3.1	A only ✓✓		
	1.3.2	B only ✓✓		
	1.3.3	A only ✓✓	(3 x 2)	**(6)**

1.4	1.4.1	Bacteriophage✓		(1)
	1.4.2	- parasitic ✓/host-specific/pathogenic - acellular ✓		(2)
	1.4.3	(a) C ✓		(1)
		(b) A ✓		(1)
		(c) B ✓		(1) **(6)**

1.5 1.5.1 (a) Annelida ✓ (1)

(b) Triploblastic ✓ (1)

(c) Through ✓gut (1)

1.5.2 (a) Ectoderm ✓ (1)

(b) Endoderm ✓ (1)

1.5.3 (a) B✓ Coelom ✓ (2)

(b) D✓ Mesoderm ✓ (2)
(9)

TOTAL SECTION A: [38]

SECTION B

QUESTION 2

2.1 2.1.1 Plantae ✓ (1)

2.1.2
- deforestation ✓
- urban development ✓ } Human activities ✓
- agriculture ✓
- increasing global temperature ✓ } Environmental changes ✓
- rising temperatures ✓

(Mark first TWO only) (2)

2.1.3
- dries up soil ✓
- prevents swimming of male gamete to female gamete✓
- prevents fusion of gametes ✓ Any (2)

(5)

2.2 2.2.1 Bird ✓ (1)

2.2.2
- has true roots, stem and leaves ✓/ non thallus
- leaves have a cuticle ✓
- vascular tissue ✓
- produce seed ✓
- water is not required for fertilisation ✓

(Mark first TWO only) Any (2)

2.2.3
- Produces and stores✓
- pollen grains ✓
- that contain male gametes ✓
- this is essential for fertilisation ✓ Any (3)

2.2.4

BIRD POLLINATED FLOWER	WIND POLLINATED FLOWER
- large ✓ petals	- small ✓ petals
- sweet scent ✓	- no scent ✓
- Brightly coloured ✓ petals	- petals are not brightly coloured ✓ / dull

Any (2 x 2) + 1 table (5)

2.2.5
- has long / feather-like stigma ✓
- with a large surface area ✓
- to easily trap the pollen grain ✓ (3)

(14)

2.3 2.3.1 Cladogram✓/ Phylogenetic tree (1)

2.3.2 (a) Pteridophytes ✓ (1)

(b) Spermatophytes ✓ (1)

2.3.3
- Seed **A** is naked ✓
- Seed **B** is covered by/enclosed in a fruit ✓
- Seed **A** has papery wing – wind dispersed ✓
- Seed **B** eaten and dispersed by animals ✓ Any (2)

2.3.4
- have true stem, roots and leaves✓
  to grow to greater heights✓/ direct absorption of water and sunlight
- have vascular tissues ✓ / xylem and phloem
  to transport water and food✓
- have (waxy) cuticle ✓
  to reduce water loss✓
- reproduce by spores ✓
  no dependency of water✓ Any (2)

2.3.5 No answer

(7)
[26]

QUESTION 3

3.1 3.1.1 (a) Plasmodium ✓ (1)

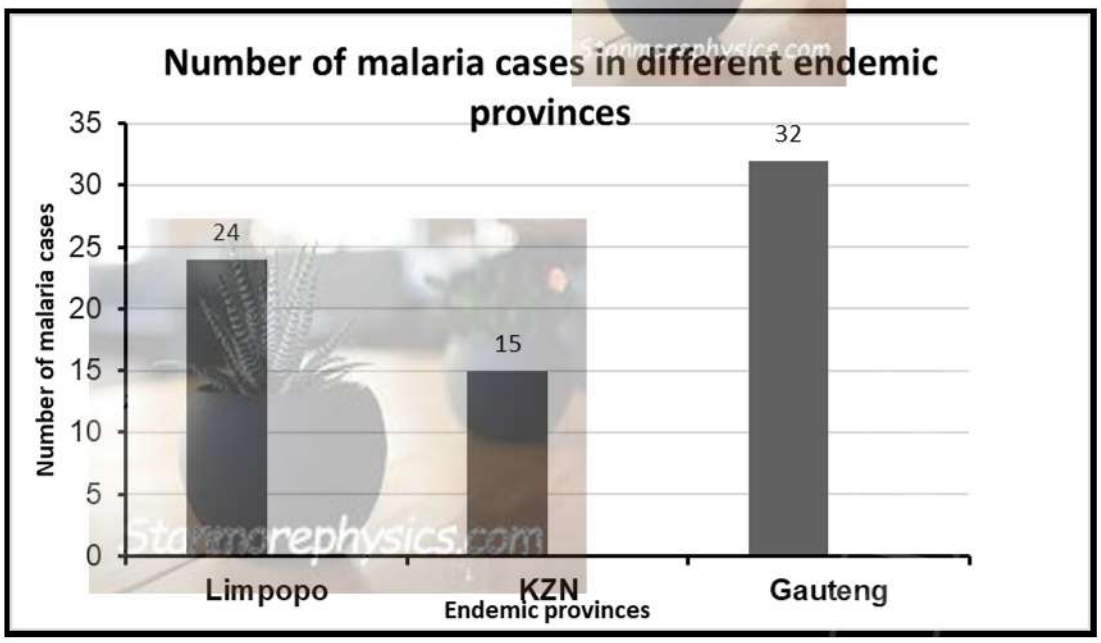
(b) Female Anopheles Mosquito ✓ (1)

(c) - Limpopo ✓
- Gauteng ✓
(Mark first TWO only) (2)

3.1.2 - high fever ✓
- chills ✓
- headache ✓
- muscle aches ✓
- sweating ✓
- diarrhoea ✓
(Mark first TWO only) (2)

3.1.3 - cold weather /lower temperature ✓ breeding becomes unfavourable
- for parasite development ✓mosquito infections / causes mosquitos to become inactive
- less rain ✓ / dry conditions decreases mosquito reproduction✓ Any (2)

3.1.4



Criteria for marking the graph:

Criteria	Mark allocation
Bar graph is drawn (**T**)	1
Caption of the graph includes both variables (**C**)	1
Correct labels on the X-axis and Y-axis **(L)**	1
Correct scale for X-axis and Y-axis (**S**)	1
Plotting (**P**) correctly done for: 1 – 2 bars All bars plotted correctly	1 2

(6)
(14)

3.2 - algae produce their own organic nutrients ✓
- role as producers in the food chain ✓
- role as decomposers ✓
- saprophytic protists and fungi breakdown dead organic matter ✓
- role in maintaining balance between oxygen and carbon dioxide ✓
- algae use carbon dioxide and release oxygen during photosynthesis ✓ Any **(5)**

3.3 3.3.1 (a) Degree of Cephalisation ✓/ presence/absence of cephalisation (1)

(b) Survival chances ✓ (1)

3.3.2 - 50 jellyfish and 50 catfish were used ✓
- investigation was conducted for 4 months ✓ (2)

3.3.3 $\left.\frac{50 - 36}{50}\right\}$ ✓ x 100 ✓

= 28% ✓ (3)

3.3.4 There is a decrease of Jellyfish and Catfish from January to April✓✓

OR

- The number of surviving jellyfish decrease from **50** to **17** ✓
- The number of surviving catfish decrease from **50** to **47**✓ (2)

3.3.5 - To improve the validity of the investigation ✓
- by ensuring that the cephalisation is the only independent variable✓
- that affects the survival of the fish✓ Any (2)

(11)

[30]

TOTAL SECTION B: 56

GRAND TOTAL: 94

CONVERSION TABLE

MARK OBTAINED	MARK ADDED
1 – 7	0
8 – 23	+1
24 – 39	+2
40 – 54	+3
55 – 70	+4
71 – 86	+5
87 – 94	+6