education

Department of Education
FREE STATE PROVINCE

GRADE 11

LIFE SCIENCES P2

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NOVEMBER 2024

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TOTAL: 150

MARKING GUIDELINES

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PRINCIPLES RELATED TO MARKING LIFE SCIENCES

1. **If more information than marks allocated is given**
   Stop marking when maximum marks is 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 a part of it is required**
   Read all and credit the relevant part.

4. **If comparisons are asked for but descriptions are given**
   Accept if the 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 are incorrect, do not credit. If sequence and links become correct again, resume credit.

9. **Non-recognised abbreviations**
   Accept if first defined in answer. If not defined, do not credit the unrecognised abbreviation but credit the rest of the 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 recognisable, accept the answer, provided it does not mean something else in Life Sciences or if it is out of context.

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

14. **If only the letter is asked for but only the name is given (and vice versa)**
    Do not credit.

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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 appear(s) in any official language other than the learner's 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	D✓✓		
	1.1.2	B✓✓		
	1.1.3	B✓✓		
	1.1.4	C✓✓		
	1.1.5	C✓✓		
	1.1.6	A✓✓		
	1.1.7	C✓✓		
	1.1.8	B✓✓		
	1.1.9	D✓✓		**(20)**
	1.1.10	A✓✓	(10 x 2)	
1.2	1.2.1	Methane✓		
	1.2.2	Rhizoid✓		
	1.2.3	Eutrophication✓		
	1.2.4	Pistil✓		
	1.2.5	Population✓		
	1.2.6	Invertebrates✓		
	1.2.7	Food security✓		
	1.2.8	Monoculture✓		
	1.2.9	Ozone✓		
	1.2.10	Antibiotics✓	(10 x 1)	**(10)**
1.3	1.3.1	Only A✓✓		
	1.3.2	Only B✓✓		
	1.3.3	Only B✓✓	(3 x 2)	**(6)**
1.4	1.4.1	(a) Pinna✓ / Sori / Compound leave/ leave/ Fronds		(1)
		(b) Adventitious root✓		(1)
	1.4.2	(a) Pteridophytes✓		(1)
		(b) B✓ and D ✓		(2)
		(c) 1✓ and 2✓		(2)
		(d) 3✓		(1)
				(8)
1.5	1.5.1	Predator-prey relationship✓		(1)
	1.5.2	B✓		(1)
	1.5.3	1989-1990✓ – 1995-1996✓		(2)
	1.5.4	1995✓		(1)

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1.5.5
- (Increased) competition✓
- Decrease in living space✓
- Shortage of shelter✓
- Easy spread of diseases and parasites✓/diseases (1)

(Any 1) **(6)**

TOTAL SECTION A: **50**

SECTION B

QUESTION 2

2.1.1 Phylogenetic tree is a diagram that shows the evolutionary relationship between different organisms.✓✓ (2)

2.1.2 (a) (iv) ✓/Radially symmetrical and tissue level of organisation (1)

(b) (ii)✓/ Bilaterally symmetrical and Triploblastic (1)

(c) (iii)✓/ Segmentation and Coelom (1)

(d) (i) ✓/ Two opening gut and open blood system (1)

2.1.3 Vertebral column✓ /Vertebrate column (1)

2.1.4
- Ectoderm✓
- Endoderm✓ (2)

2.1.5 It has a concentration of nerves and sensory organs✓ at one end of the organism.✓ (2) **(11)**

2.2.1 Angiosperms✓ (1)

2.2.2 (a) B✓ - petals✓ (2)

(b) D✓ - ovary✓ (2)

(c) C✓ - Stigma✓ (2)

2.2.3 1✓ (1)

2.2.4
- Has a small flower✓
- Small petals✓
- Long filaments hanging outside the flower✓
- Anthers are large✓
- Stigma are long and feather-like✓with a huge surface area. (Any 3) (3)

2.2.5 - Male gamete✓ (sperms) fuses with a female gamete✓ (ova) to form a zygote✓ (3) **(14)**

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2.3.1
- Humidity/moisture✓
- Warm environment✓
- Dark environment✓ (3)

2.3.2 Different treatments ✓ (1)

2.3.3 It is used as the control/baseline✓ to compare the results with✓
To ensure that it is the treatment✓ that is responsible for the effect of the fungi coverage/growth✓ (2)
(Mark first TWO only)

2.3.4
- Repeat the investigation✓
- Use more than one slice of bread in each treatment✓ (Increase the sample size 🎁) (1)

(Mark first ONE only)

2.3.5 (1)

Sugar water✓

2.3.6
- The bread treated with 20 ml of different treatments✓
- The treatment was spread evenly across the slice of bread✓
- The treatment was done for one weak✓
- The slices of bread were in the same zip lock bags✓ (2)

(Mark first TWO only)

2.3.7

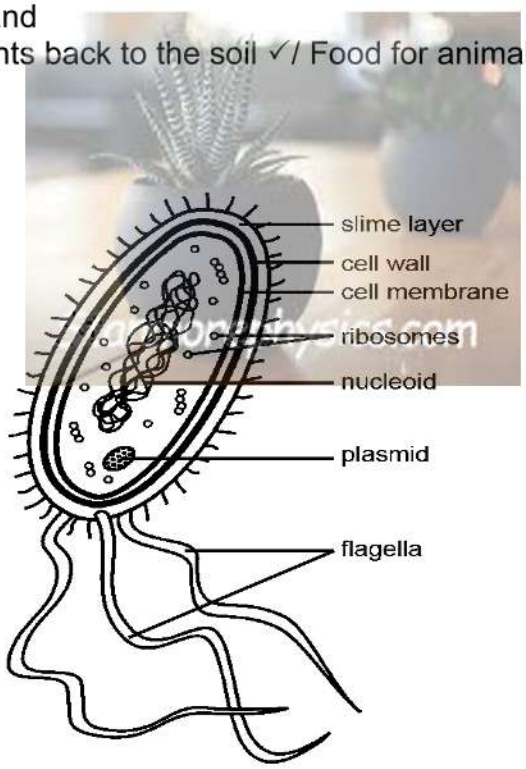
Fungi does not have chlorophyll✓/cannot photosynthesis and cannot produce food for themselves ✓ through photosynthesis (2)

2.3.8

-Fungi are saprophytes✓/ break down dead organic material / decomposers and
- recycle nutrients back to the soil ✓/ Food for animals (2)
(14)

2.4

Bacteria



Criteria for marking the diagram

Title of the diagram.	(C)	1
Correct organism drawn	(D)	1
1-2 Correct Labels All 3 Labels correctly drawn	(L)	1 2

(4)

2.5.1 Protista✓ (1)

2.5.2 Liver✓ (1)

2.5.3
- Flu symptoms✓
- Fever✓
- Headache✓
- Joint pain✓
- Vomiting✓
- Anaemia✓
- Convulsions✓

(Mark first TWO only) (2)



2.5.4 3✓ (1)

2.5.5
- Treatment✓/anti-malaria drugs
- Elimination of the vector✓/Spray the inner walls of house/use Insecticides as DDT
- Insect repellent✓
- Use mosquito nets✓
- Clothes with long sleeves✓

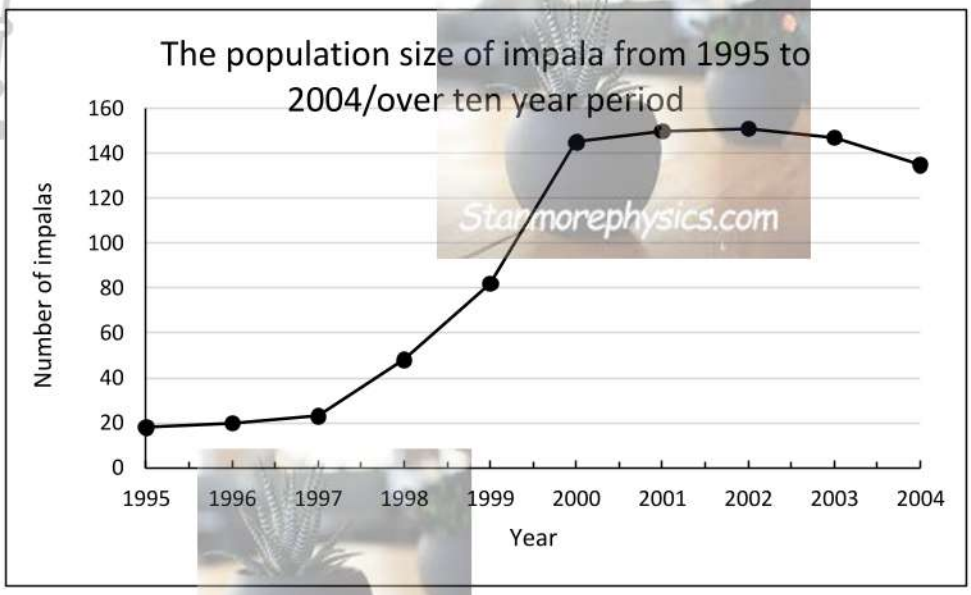
(Mark first TWO only) (2) **(7)**

TOTAL QUESTION 2: [50]

QUESTION 3

3.1.1 Natality✓
Immigration✓ (2)

3.1.2



(6)

Criteria for marking of the graph:

Criteria	Mark allocation
Line graph in drawn (**T**)	1
Caption of the graph includes both variables (**C**)	1
Correct labels on the X-axis and Y-axis with correct unit on the Y-axis (**L**)	1
Correct scale for Y-axis and years plotted evenly (**S**)	1
Plotting (**P**) correctly done for: 1 – 8 All 10	 1 2

3.1.3
- Census✓
- Counting✓
- Aerial photographs✓

(Mark first ONE only) (1)

3.1.4 (a) $P = \frac{M \times S}{T}$

$= \frac{(15 \times 40)}{5}$ ✓ ✓

$= \frac{600}{5}$

$= 120$ ✓ impalas (3)

(b) Below✓ (1)

3.1.5
- The marking methods should not injure or damage the organism✓
- The marks should be clearly visible for the duration of the investigation✓
- The marking method should not affect the movement of behavior of the organism✓
- Marked organisms should be allowed enough time to mix with the rest of the population before the next sample is taken✓
- The population must be closed, so no immigration or emigration takes place.✓

(Mark first TWO only) (2)
(15)

3.2.1 (a) B✓ (1)
(b) A✓ (1)

3.2.2 4✓% (1)

3.2.3 15✓ Years (1)

3.2.4
- Good medical care✓
- Good nutrition✓
- Good education ✓

(Mark first TWO only) (2)
(6)

3.3.1 Organisms that occupy area outside their natural habitat. ✓✓ (2)

3.3.2 $\frac{198}{9000}$ ✓ x 100✓

= 2,2%✓ (3)

3.3.3 Deplete the topsoil✓ of water and nutrients.
Alien plants out-compete indigenous plants; ✓
No natural predators✓
Growing rapidly✓
Decreasing Food security✓ (Any 4)
(4)

3.3.4 Mechanical control✓ – Chopping down plants of physically removing them by hand✓
Chemical control✓ - Spraying herbicides on the plants✓
Biological control✓ - Using a natural enemy from the alien plant✓
(Mark first THREE only) (6)
(15)

3.4.1 Methane✓ and Ozone✓ (2)

3.4.2 Burning of fossil fuel✓
Deforestation✓ (2)

3.4.3 Greenhouse gases absorb long wave/infrared radiation emitted✓ from the Earth and prevent it from escaping back into the atmosphere✓ (2)

3.4.4 It increases the temperature of earth✓ to ensure that life on earth is possible✓ (2)

3.4.5
- More evaporation flooding✓
- Rising sea levels ✓
- Increased wildfires ✓
- Increased loss of biodiversity ✓
- Increased droughts✓ (Any 3) (3)

3.4.6
- Reuse and recycle✓
- Drive less✓
- Reduce the need for heating✓
- Use an alternativities energy source ✓
- Technology developments ✓ (Any 3) (3)

(14)

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TOTAL QUESTION 3: [50]

TOTAL SECTION B: 100
GRAND TOTAL: 150

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