Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2019

LIFE SCIENCES P1 MARKING GUIDELINE

MARKS: **150**

This marking guideline consists of 9 pages.

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 national memo discussion meeting

14. **If only the letter is asked for, but only the name is given (and vice versa)**
    Do not 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 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	C ✓✓		
	1.1.2	B ✓✓		
	1.1.3	D ✓✓		
	1.1.4	C ✓✓		
	1.1.5	A ✓✓		
	1.1.6	B ✓✓		
	1.1.7	D ✓✓		
	1.1.8	B ✓✓		
	1.1.9	C ✓✓		
	1.1.10	B ✓✓	(10 x 2)	(20)
1.2	1.2.1	Kidney failure ✓		
	1.2.2	Predator ✓		
	1.2.3	Glucose ✓		
	1.2.4	Glucagon ✓		
	1.2.5	Emigration ✓		
	1.2.6	Emulsification ✓		
	1.2.7	Epiglottis ✓		
	1.2.8	Mastication ✓		
	1.2.9	Oxygen ✓	(9 x 1)	(9)
1.3	1.3.1	B only ✓✓		
	1.3.2	None ✓✓		
	1.3.3	A only ✓✓		
	1.3.4	Both A and B ✓✓	(4 x 2)	(8)
1.4	1.4.1	Logistic growth curve ✓		(1)
	1.4.2	a) C ✓		(1)
		b) A ✓		(1)
		c) D ✓		(1)
		d) B ✓		(1)
				[5]
1.5	1.5.1	Sodium hydroxide✓ / Soda lime / Potassium hydroxide		(1)
	1.5.2	Removes carbon dioxide from the air in the jar. ✓		(1)
	1.5.3	The leaf turns blue-black ✓		(1)
	1.5.4	- As the leaf was outside the jar, it was exposed to carbon dioxide ✓ - and could photosynthesise ✓ / produce starch		(2)
	1.5.5	Dark phase ✓ / Light independent phase		(1)
	1.5.6	In the stroma ✓ of the chloroplast		(1)
	1.5.7	To ensure that the starch present at the end of the investigation was produced during the investigation ✓		(1)
				[8]

TOTAL SECTION A: 50

SECTION B

QUESTION 2

2.1 2.1.1 Japan ✓ (1)

2.1.2 The population pyramid shows a population with declining numbers ✓ (1)

2.1.3
- Most of the population is between the ages of 0 to 19 ✓
- which is an indication of an increasing population ✓ (2)

2.1.4
- Diseases ✓ like HIV
- Immigration ✓
- Emigration ✓
- A lowered birth rate ✓ because of a crisis e.g. economic crisis

(Any 3) (3)

2.1.5
- The government needs to know how many children there are ✓
- to know how many schools to build. ✓
- They need to know what the housing needs are. ✓
- They need to know how many people of working class there is ✓ to be able to create employment if need be. ✓
- They need to know how many hospitals the country needs. ✓

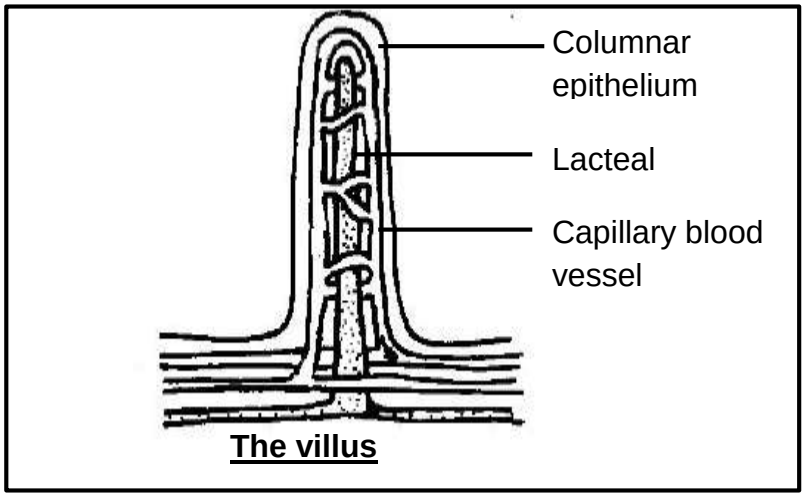
(Any 3) (3)

[10]

2.2 2.2.1
a) Stomach ✓ (1)
b) Colon ✓ / Large intestine (1)
c) Anus ✓ (1)
d) Small intestine ✓ / Duodenum (1)

2.2.2
a) B ✓ (1)
b) A ✓ (1)
c) C ✓ (1)

2.2.3



The villus

Correct diagram	1
Caption	1
Any TWO correct labels	2

(4)

2.2.4
- The stomach can tear ✓ because of repeated vomiting ✓
- This can cause bleeding ✓ and eventual death ✓
- The continuous use of laxatives can cause dehydration ✓ (Any 3) (3)

[14]

2.3 2.3.1 Parasitism ✓ (1)

2.3.2
- This plant has no leaves ✓ and therefore
- no photosynthesis is able to take place ✓ (2)

2.3.3
- The grapes from grape vines are used for export ✓ and
- to make wine ✓
- If the grape vines are damaged by the parasite, the farmers will suffer financial losses, ✓ and
- the economy of the country will decrease ✓*/ negatively affected

✓* compulsory + any 2 (3)

[6]

2.4 2.4.1 Oxygen ✓ (1)

2.4.2
- Take a glowing wooden splint ✓ and insert it in the mouth of the test tube
- If it ignites, ✓ the gas is oxygen (2)

2.4.3
- To release carbon dioxide ✓ into the water
- for photosynthesis to take place. ✓ (2)

2.4.4 - To see the oxygen which is a colourless gas ✓ (1)

2.4.5
- Increase the light intensity ✓
- so that the plant absorbs more light energy ✓ to increase the rate of photosynthesis
- Increase the temperature to optimum ✓
- will increase the rate of photosynthesis ✓ and therefore the rate of this experiment (4)

(10)

[40]

QUESTION 3

3.1 3.1.1 a) The rate of cellular respiration ✓ (1)

b) Sucrose concentration ✓ (1)

3.1.2 Carbon dioxide ✓ (1)

3.1.3 If clear lime water ✓ turns milky ✓ it will prove that the gas is carbon dioxide (2)

3.1.4 - Make sure all four test tubes were at the same temperature ✓
- Make sure all four test tubes have the same oxygen concentration ✓
- Add the same amount of yeast to each test tube ✓
- Add the same amount of salt to each test tube ✓ (Any 2) (2)

(Mark first TWO only)

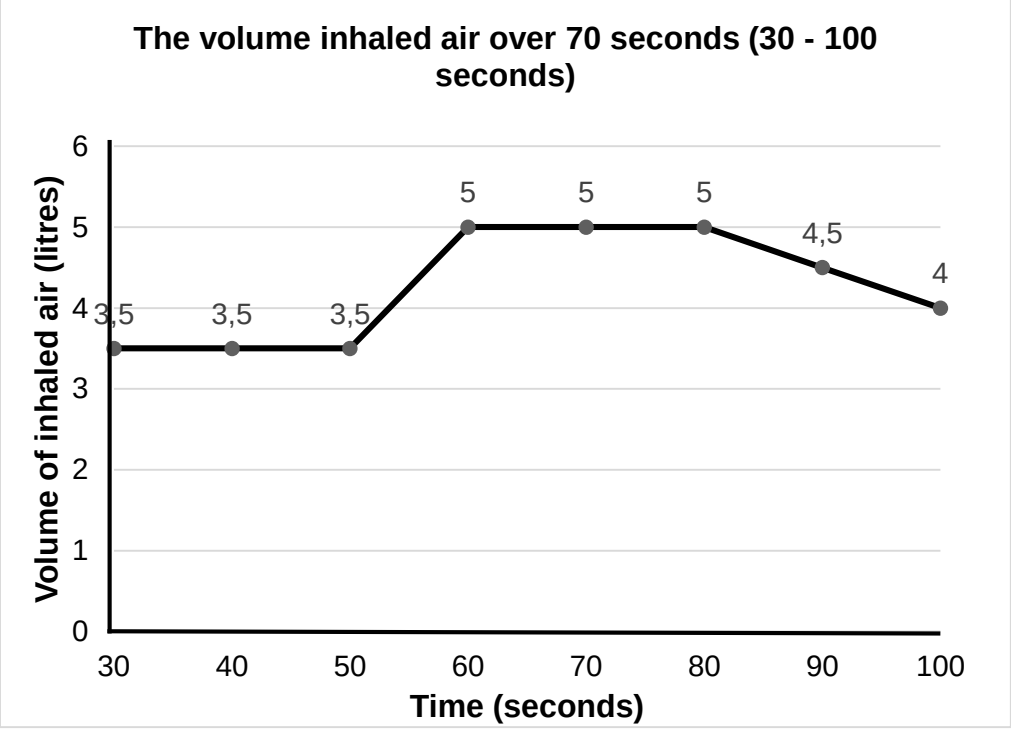
3.1.5 - As a control ✓
- to ensure that the results obtained are due to changing sucrose concentration ✓ (2)

3.1.6 The higher the sucrose concentration, the higher the rate of cellular respiration. ✓✓ (2)

3.1.7 - In the absence of oxygen ✓
- yeast cells will undergo alcoholic fermentation ✓
- to produce alcohol ✓ and carbon dioxide ✓ (Any 3) (3)

[14]

3.2 3.2.1



Mark allocation for the graph:	
Line graph is drawn	1
Title of the graph	1
Correct scale for x-axis and y-axis	1
Correct labels and units for the x-axis and the y-axis	1
Plotting of the points: 0 points correct	0
1 - 4 points correct	1
5 - 7 points correct	2
Only 30 to 100 seconds are drawn	1

(7)

3.2.2 20 ✓ seconds ✓ (2)

3.2.3
- The volume of air increased ✓ from 60 to 80 seconds
- to supply the muscles with enough oxygen ✓ and
- remove the excess carbon dioxide ✓ (Any 2) (2)

3.2.4
- The volume of air inhaled will be less from the beginning ✓
- because of the narrowing of the air passages. ✓ (2)

[13]

3.3 3.3.1 The evolutionary process where species that live in the same habitat divide resources ✓ in such a way that different niches are created. ✓ (2)

3.3.2 Inter-specific competition ✓ (1)

3.3.3 To investigate resource partitioning ✓ amongst different species in the Serengeti ✓ (2)

3.3.4 Different plants developed roots of different sizes ✓ in order to absorb water ✓ from different levels in the soil ✓ and in this way all plants can get water ✓ to survive (Any 3) (3)

[8]

3.4 3.4.1 Primary succession ✓ (1)

3.4.2 There was no disturbance when the development of plants took place ✓ (1)

3.4.3 Pioneer species ✓ (1)

3.4.4
- Rainfall ✓ – if the annual rainfall is too high or too low it can influence the type of organisms that develop in the area ✓
- Climate change ✓ - This can change the temperatures and rainfall patterns of an area and therefore influence the development of vegetation ✓
- Alien invasive plants ✓ – This can influence the indigenous plants' development ✓ (Any 1 x 2) (2)

(Mark first ONE only)

[5]

TOTAL SECTION B 80

SECTION C

QUESTION 4

When there is too little water in the blood ✓*
- The receptors in the hypothalamus will be stimulated ✓
- to secrete more ADH ✓
- ADH will be transported to the kidneys ✓
- by the blood ✓
- to increase the permeability ✓ of the
- collecting ducts in the kidneys ✓
- More water will be absorbed ✓
- back into the bloodstream ✓
- and less water will be excreted in the urine. ✓
- The amount of water in the bloodstream will increase ✓
- back to normal ✓ ✓* + any 8 (9)

When there is too much salt in the blood ✓*
- Receptors in the blood vessels ✓
- note the increase in the salt concentration in the blood ✓
- This will stimulate the adrenal glands ✓
- to secrete less ✓
- aldosterone ✓
- Less salts (sodium) will be re-absorbed ✓ into the bloodstream.
- More salts will be excreted in the urine ✓
- The salt concentration in the bloodstream will decrease ✓
- back to normal ✓ ✓* + any 7 (8)

ASSESSING THE PRESENTATION OF THE ESSAY

Criterion	Relevance (R)	Logical sequence (L)	Comprehensive (C)
Generally	All information provided is relevant to the topic	Ideas are arranged in a logical sequence	All aspects required by the essay have been sufficiently addressed.
In this essay Q4	Only provided information relevant to: - Low water concentration - High salt concentration There is no irrelevant information	Information on: - Water regulation and salt regulation is presented in a logical sequence	At least the following marks should be obtained: - water regulation **(6/9)** - salt regulation **(6/8)**
MARK	**1**	**1**	**1**

Content: (17)
Synthesis: (3)

TOTAL SECTION C: 20
GRAND TOTAL: 150