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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

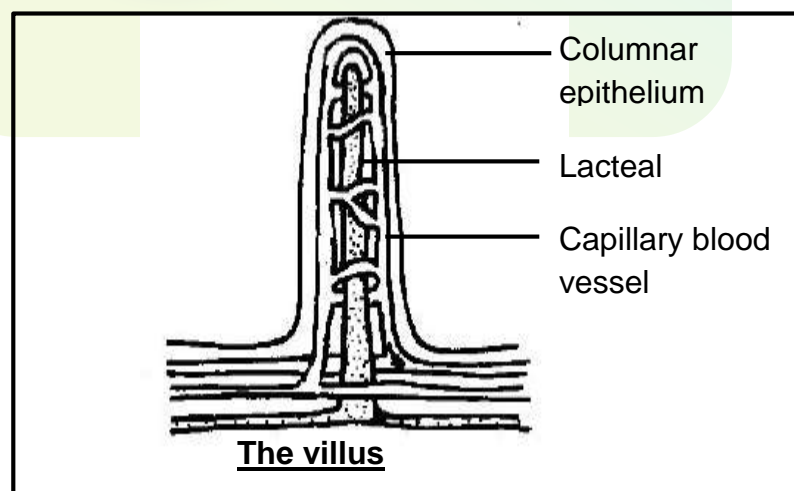
SECTION B**QUESTION 2**

- 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



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)

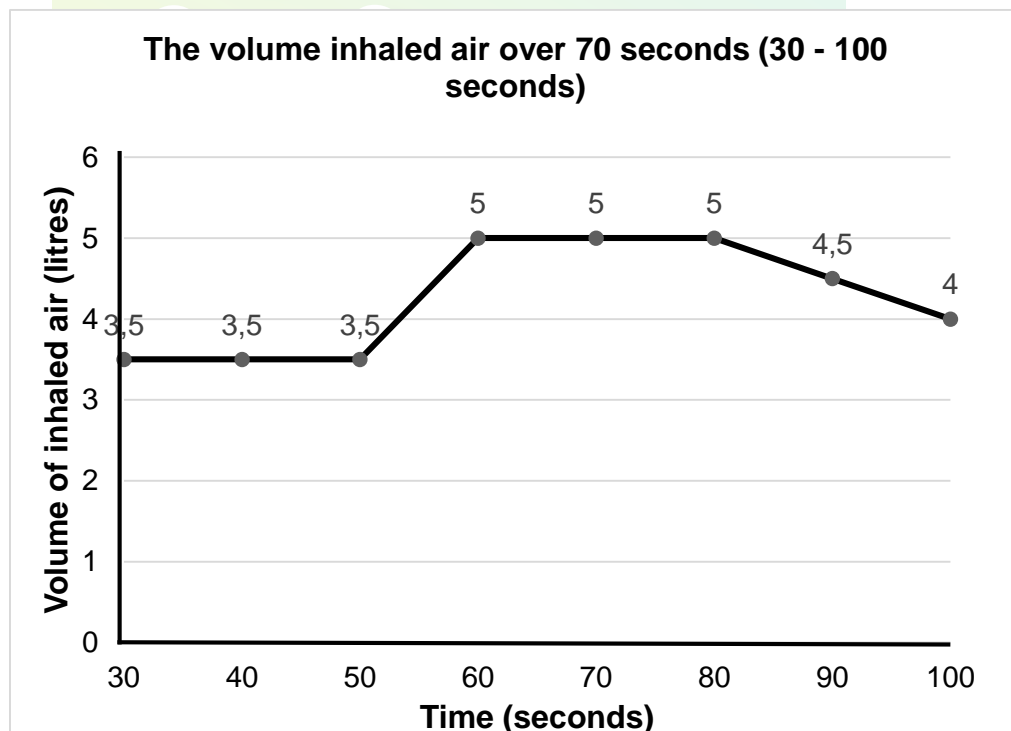
- 2.4.5 - Increase the light intensity ✓
 - so that the plant absorbs more light energy ✓ to increase the rate of photosynthesis
 - Increase the temperature to optimum ✓
 - will increase the rate of photosynthesis ✓ and therefore the rate of this experiment (4)
(10)

[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: <ul style="list-style-type: none"> - Low water concentration - High salt concentration There is no irrelevant information	Information on: <ul style="list-style-type: none"> - Water regulation and salt regulation is presented in a logical sequence 	At least the following marks should be obtained: <ul style="list-style-type: none"> - water regulation (6/9) - salt regulation (6/8)
MARK	1	1	1

Content: (17)
Synthesis: (3)

TOTAL SECTION C: 20
GRAND TOTAL: 150