Education

KwaZulu-Natal Department of Education
REPUBLIC OF SOUTH AFRICA

LIFE SCIENCES

NOVEMBER 2022

MEMORANDUM

GRADE 10

MARKS: 60

This memorandum consists of 5 pages

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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 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.

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SECTION A

QUESTION 1

1.1	1.1.1	A✓✓		
	1.1.2	B✓✓		
	1.1.3	B✓✓		
	1.1.4	A✓✓		
			(4 x 2)	**(8)**
1.2	1.2.1	Transpiration ✓		
	1.2.2	Trophic levels ✓		
	1.2.3	Nitrates ✓		
	1.2.4	Mitochondrion✓		
	1.2.5	scurvy✓		
	1.2.6	haemoglobin✓		
			(6 x 1)	**(6)**
1.3	1.3.1	A only ✓✓		
	1.3.2	B only ✓✓		
	1.3.3	Both A and B ✓✓		
			(3 x 2)	**(6)**
			TOTAL SECTION A:	**[20]**

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QUESTION 2

2.1 2.1.1 Seeds will germinate better in sunlight√ than in the darkness√. OR (2)
Seeds will germinate better in darkness than in sunlight. OR
Seeds will germinate well whether in sunlight or darkness.

2.1.2 (a) sunlight / darkness √ (1)
(b) amount of seeds that germinated√ (1)

2.1.3 Amount of soil √
Size of pot plants √ (Any two) (2)
Number of seeds
Amount of water

2.1.4 Repeat the experiment and take an average of the results. √ (2)
Increase the sample size (put more seeds in each pot) √ **(8)**

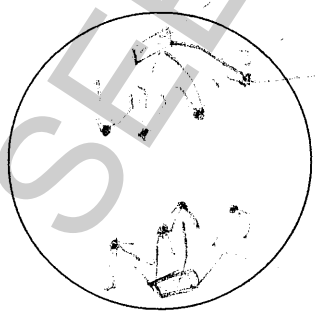
2.2

2.2.1 Mitosis √ (1)

2.2.2 A – nucleolus √ (1)
B- chromatin network √ (1)
C- cell membrane √ (1)

2.2.3 D-Centiole - provides spindle fibres to hold the chromosomes. (2)

2.2.4 Metaphase (1)



Anaphase

Caption √
Correct phase√ (3)
Correct label √

2.2.5 No growth will occur in living organisms.√ (2)
No repair of worn out and damaged tissue. √
No asexual reproduction in unicellular organisms.

[20]

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QUESTION 3

3.1.1	a) trilobite √ b) ammonite √	(1) (1)
3.1.2	The organism dies and is covered rapidly√ By sediments/silt√ As time passes layers of sediments build up over the body The layers compress and pressure builds up. Minerals from the rock seep into the bones and harden it.	(4)
3.1.3	Radiometric dating.	(7)
3.2.1	5 √	(1)
3.2.2	Permian √	(1)
3.2.3	Palaezoic √	(1)
3.2.4	Volcanic activity √ Asteroid / comet impact √ Climate change Glaciations / drop in sea level	(2)
3.2.5.	200 mya √	(1)
3.2.6.	Permian	(1)
3.2.7.	Exploitation of the environment by humans. √	(1) **(8)**
3.3. 3.3.1	They were thought to be extinct√ yet they have existed unchanged for millions of years√.	(2)
3.3.2	Off the coast of East London	(1)
3.3.3	Transitional fossils	(1)
3.3.4	Archaeopteryx Thrinaxodon Lystrosaurus	(1) **(5)**
	TOTAL SECTION B:	**40**
	GRAND TOTAL:	**60**

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