Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botlhabela: Lefapha la Thuto

GRADE 10
LIFE SCIENCES
MARKING GUIDELINES
28 MAY 2024



MARKS: 150 **TIME: 2 ½ HOUR**

This marking guideline consists of 10 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 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.

Copyright reserved

SECTION A

QUESTION 1

1.1

1.1.1	A ✓✓	(2)
1.1.2	A ✓✓	(2)
1.1.3	B ✓✓	(2)
1.1.4	D ✓✓	(2)
1.1.5	C ✓✓	(2)
1.1.6	D ✓✓	(2)
1.1.7	C ✓✓	(2)
1.1.8	D ✓✓	(2)
1.1.9	A ✓✓	(2)
1.1.10	C ✓✓	(2)
		(20)

1.2



1.2.1	Lipid/fat ✓	(1)
1.2.2	Enzymes ✓	(1)
1.2.3	Diffusion ✓	(1)
1.2.4	Rough endoplasmic reticulum/RER ✓	(1)
1.2.5	Cancer ✓	(1)
1.2.6	Root hair	(1)
1.2.7	Cartilage (hyaline) ✓	(1)
1.2.8	Leucoplast ✓	(1)
1.2.9	DNA✓ / Deoxyribose Nucleic Acid	(1)
1.2.10	Glycogen ✓	(1)
		(10)

1.3

1.3.1	None ✓✓	(2)
1.3.2	A Only ✓✓	(2)
1.3.3	Both A and B ✓✓	(2)
1.3.4	B Only ✓✓	(2)
1.3.5	A Only ✓✓	(2)
		(10)

Copyright reserved

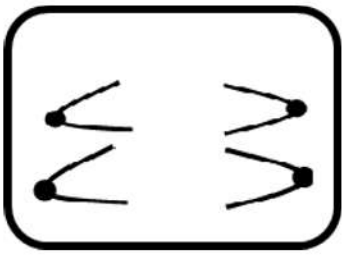
1.4

1.4.1
- Plant ✓
- Fixed shape✓/ presence of a cell plate (2)

1.4.2
(a) Telophase ✓ (1)
(b) Anaphase ✓ (1)
(c) Metaphase ✓ (1)
(d) Prophase ✓ (1)

1.4.3 Chromosomes align at the equator ✓ (1)

1.4.4 **Stage B/ Anaphase (of a cell with 2 chromosomes)**



Mark allocation for diagram:

Heading ✓
Correct diagram ✓ (anaphase displayed)
2 chromosomes drawn ✓

(3)

(10)

TOTAL SECTION A: 50

Copyright reserved

SECTION B

QUESTION 2

2.1

2.1.1 a) Rickets ✓ Calcium✓/Ca OR phosphorous✓/P (2)
b) Night blindness✓ Vitamin A✓ (2)
c) Anaemia ✓ Iron✓/Fe (2)
d) Goitre ✓ Iodine✓/I (2)

2.1.2 (Vitamin) D ✓ (1)

2.1.3 Milk✓ / Cheese / diary / oily fish / eggs / red meat / liver
(Any food rich in Calcium or Vitamin D) (1)
(10)

2.2

2.2.1 Protein ✓ (1)

2.2.2 Peptide ✓ (1)

2.2.3
- Line graphs are plotted if the data provided is in the form of numbers ✓
- whereas bar graphs are used plotted if the data provided is NOT in the form of numbers ✓

OR

- Line graphs are plotted if the data provided quantitative ✓
- whereas bar graphs are plotted if the data is qualitative ✓

OR

- Line graphs are plotted when a trend/pattern needs to be identified ✓
- whereas bar graphs are plotted when data is compared ✓ (2)

2.2.4 Maltose ✓ (1)

2.2.5 Benedict's ✓ (1)

2.2.6 (a) orange ✓ (1)
(b) blue ✓ (1)

2.2.7 At temperatures above 40°C enzymes/ proteins/ amylase denatures✓
So, they can no longer break down the starch into sugar✓/ function (2)
(10)

Copyright reserved

2.3

2.3.1 (a) Mitochondrion✓/mitochondria (1)

(b) Chloroplast ✓ (1)

2.3.2 Both organelle B and D:

- Possess their own DNA/have circular DNA ✓✓
- Have a double membrane ✓✓
- Have enzymes✓✓/ribosome within them
- Have an inner membrane that surrounds a fluid (stroma/matrix) ✓✓

(Mark first TWO only) ***TABLE** ✓??? (2 X 2) (5)

2.3.3 Cell Wall ✓ (1)

2.3.4

- (Rigidity) and Structural Support✓
- Protection✓
- Regulation of Growth and development ✓
- Water Regulation✓/maintaining water balance

(Any TWO functions) (2)

2.3.5 (a) A ✓ (1)

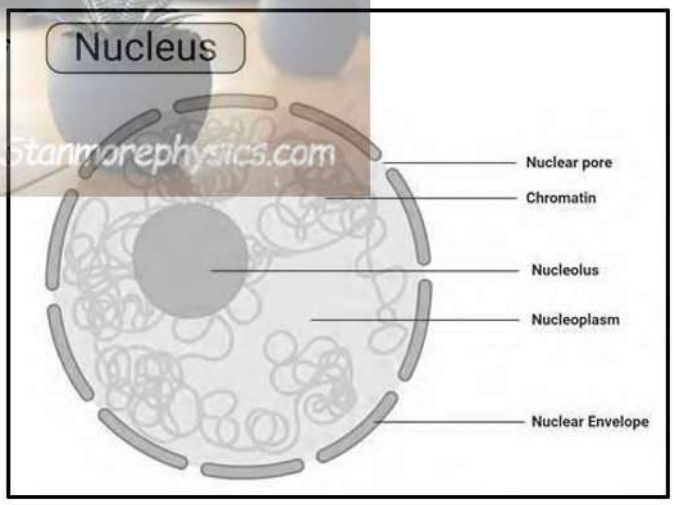
(b) B ✓ (1)

(c) D ✓ (1)

(d) B ✓ (1)

(e) F ✓ (1)

2.3.6 **Plant cell prior to receiving water/flaccid**



Stanmorephysics.com

Mark allocation for diagram:

Heading/Caption✓
Correct diagram ✓ (nucleus)
Any 3 correct labels✓

(5)

2.3.7
- Plants have a large vacuole✓ while animals have small vacuoles✓
- Plants have a cell wall✓ while animals only have a cell membrane✓
- Plant cells have chloroplasts while animals do not✓ any 2 (4)

(23)

2.4

2.4.1
(a) Epidermis ✓ (1)
(b) Parenchyma ✓ (1)
(c) E – endodermis✓ (1)

2.4.2
(a) A ✓ (1)
(b) C ✓ (1)
(c) H ✓ (1)
(d) E ✓ (1)
(7)
[50]

QUESTION 3

3.1

3.1.1 Decide:
- How long the investigation will last ✓
- How results will be recorded ✓
- What apparatus will be required ✓
- Where the investigation will take place ✓
- Where the leaves will be obtained ✓

(Any ONE) (1)

3.1.2 To determine which surface of water loses the most water ✓✓ (2)

3.1.3 (a) Surface of leaf covered ✓ (1)

(b) Water loss ✓ (1)

3.1.4 1 ✓ Vaseline was not applied to its surface ✓/ ensured water loss was due to area not being covered with Vaseline (2)

3.1.5 $\frac{2.0-1.6}{2.0}$ ✓X 100 ✓ = 20 ✓% (3)

3.1.6 The leaves have different masses at the beginning ✓✓ (2)

3.1.7 Most water is lost through the lower surface of the leaf ✓ (1)

(13)

Stanmorephysics.com

3.2

3.2.1
- Located directly below upper epidermis: ✓ Allowing for maximum absorption of sunlight ✓
- Has large amounts of chloroplasts: ✓ to allow maximum rate of photosynthesis ✓
- Arranged longitudinally: ✓ Long length allows for deeper penetration of light ✓
- No intercellular spaces: Allows more cells to make contact with sunlight

(Mark first THREE only) (3X2) (6)

3.2.2 Loss of water vapour ✓ though the aerial part of the plant ✓ (2)

3.2.3
- Water reaches the xylem✓ (E) and moves through the
- membrane of the spongy mesophyll ✓ (B)
- via osmosis ✓.
- Water vapour then diffuses ✓ into the
- intercellular airspaces ✓ (F)
- through the stomatal pore ✓(C) to the outside of the leaf (6)

3.2.4
- Thick Cuticle ✓
- Sunken Stomata ✓
- Reduced Number of Stomata ✓
- Smaller Leaf Surface Area ✓
- Rolled Leaves ✓
- Trichomes (Leaf Hairs) ✓

(**Any TWO**) (2)

3.2.5 (a) Due to an increase in temperature:

- There is an increase in kinetic energy ✓
- of water molecules ✓
- in the air and/or intercellular spaces in the leaf✓
- Diffusion occurs faster ✓
- increasing the transpiration rate * ✓

(Any THREE) * Compulsory mark (3)

(b) Due to an increase in humidity:

- The diffusion gradient becomes less steep✓
- between the intercellular airspaces and the atmosphere/outside of leaf✓
- Diffusion occurs slower ✓
- Decreasing the transpiration rate ✓

(Any THREE) (3)

(22)

Copyright reserved

3.3



3.3.1 Ligaments connect bone to bone ✓ and tendons connect muscle to bone ✓ (2)

3.3.2 (a) D ✓ (1)
(b) C ✓ (1)
(c) F ✓ (1)
(d) B ✓ (1)
(6)

3.4

3.4.1 skull ✓ (1)

3.4.2 - 8 - patella✓
- 10 - sternum✓ (2)

3.4.3 - lumber ✓ (1)

3.4.4 - to protect the brain✓ (1)

3.4.5 - The two halves of the pelvic girdle are joined together directly✓/ The pelvic girdle is attached to the vertebral column / The acetabulum of the hip is much deeper
It carries the weight of the body✓

- The two halves of the pectoral girdle are not joined✓ / The pectoral girdle is free from the vertebral column / the glenoid cavity of the shoulder.
It is able to move freely✓ /does not carry any weight (4)
(9)

[50]

TOTAL SECTION B: 100
GRAND TOTAL: 150

Copyright reserved