KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

# PROVINCIAL STANDARDISED ASSESSMENT

## GRADE 11

## LIFE SCIENCES

## MARKING GUIDELINES

JUNE 2026

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**MARKS: 150**

**This question paper consists of 12 pages including this page.**

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## PRINCIPLES RELATED TO MARKING LIFE SCIENCES JUNE 2026

1. **If more information than marks allocated is given**
   Stop marking when maximum marks are 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 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 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.

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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.

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## SECTION A

## QUESTION 1

1.1 1.1.1 C✓✓

1.1.2 A✓✓

1.1.3 D✓✓

1.1.4 B✓✓

1.1.5 A✓✓

1.1.6 C✓✓

1.1.7 C✓✓

1.1.8 A✓✓

1.1.9 D✓✓

1.1.10 B✓✓ (10 x 2) **(20)**

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1.2 1.2.1 (Biological) classification ✓ / taxonomy

1.2.2 Commensalism ✓

1.2.3 Vaccination ✓

1.2.4 Virus ✓

1.2.5 Plasmodium✓

1.2.6 Acquired immunity ✓

1.2.7 Assimilation ✓

1.2.8 Phylogenetic tree ✓/ cladogram

1.2.9 Homeostasis✓ **(9)**

1.3 1.3.1 A only ✓✓

1.3.2 B only ✓✓

1.3.3 Both A and B ✓✓ (3 x 2) **(6)**

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1.4 1.4.1 (a) Large intestine ✓ / colon / descending colon (1)

(b) Rectum ✓ (1)

1.4.2 (a) B ✓ Stomach ✓ (2)

(b) A ✓ Liver ✓ (2)

1.4.3 (a) Out of scope

(b) Mechanical digestion ✓ (1)

1.4.4 Peristalsis ✓ (1)

**(8)**

1.5 1.5.1 Bacteria ✓ (1)

1.5.2 Kingdom Monera ✓ (1)

1.5.3 400 ✓ (1)

1.5.4 (a) May ✓ (1)

(b) Apr / April ✓ (1)

**(5)**

**TOTAL SECTION A: 48**

## CONVERSION TABLE

| | |
|---|---|
| 0 – 11 | **No mark** |
| 12 – 35 | **+1** |
| 36 – 48 | **+2** |

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**SECTION B**

**QUESTION 2**

2.1 2.1.1 Photosynthesis ✓ (1)

2.1.2 (a) A ✓ starch grain ✓ (2)

(b) D ✓ grana ✓ / thylakoid (2)

2.1.3
- Dark phase ✓ / light-independent phase
- occurs in the stroma ✓ of the chloroplast
- carbon dioxide from the atmosphere ✓
- combines with energised hydrogen atoms ✓
- to form carbohydrates ✓ such as glucose and starch
- using energy in the form of ATP ✓
- from the light phase ✓

Any (5)

2.1.4
- Carbon dioxide cannot enter the organelle ✓
- Water cannot enter the organelle ✓
- Photosynthesis will not take place ✓
- Glucose and oxygen will not be formed as by-product ✓

Any (3)
**(13)**

2.2 2.2.1 Process of increasing the amount of carbon dioxide to a level higher than what is normally in fresh air ✓ (1)

2.2.2 (a)
- Human or animal respiration ✓
- Natural off-gassing of $CO_2$ from the ground ✓

(2)

(b)
- Increase plant growth ✓
- Increase flowering ✓
- Speed the time to harvest ✓

Any (2)

**(Mark first TWO only)**

2.2.3
- An increase in plant growth improves food access for vulnerable populations ✓
- An increase in flowering improves supply of fruits and vegetables ✓
- An increased crop harvest improves food availability on the market and farms ✓

Any (2)

2.2.4
- An increase in light intensity results in an increase in rate of photosynthesis but only to a maximum level ✓✓

(2)
**(9)**

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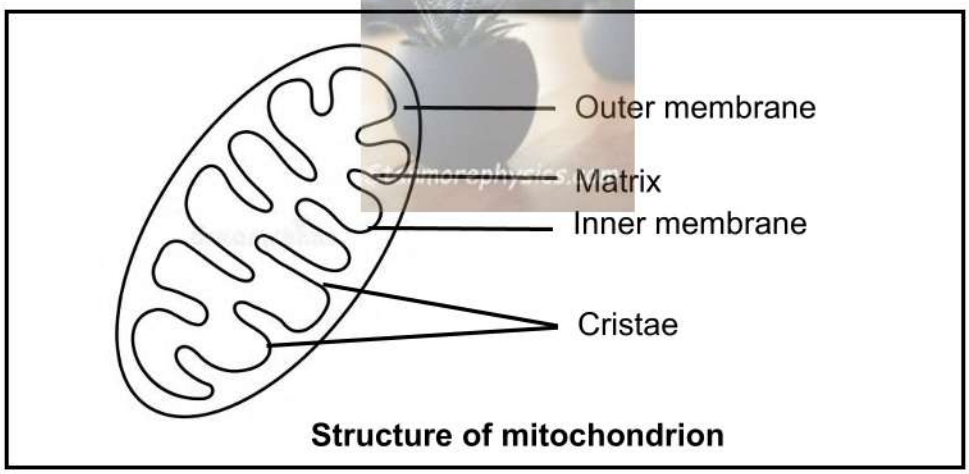
2.3 2.3.1 (a) Genetic modification ✓ / engineering (1)

(b) Insulin ✓ (1)

2.3.2 - Reproduce by binary fission ✓/ asexual/do not require mating partners
- Reproduce rapidly in a short period of time ✓
- Has simple genetic structure ✓
- Bacterium plasmid can be easily modified in a lab ✓ Any (2)
**(Mark first TWO only)**

2.3.3 - Decrease the glucose level in blood ✓
- by stimulating the liver to convert excess glucose to glycogen ✓
- stimulates the absorption of glucose into the cells✓ Any (2)
**(6)**

2.4 2.4.1




**Structure of mitochondrion**

**Criteria for marking the diagram**

| Criteria | Mark allocation |
|---|---|
| Correct diagram (**D**) | 1 |
| Caption (**C**) | 1 |
| Labels (**L**) | Any 2 |

(4)

2.4.2 - Energised hydrogen atoms are used to form ATP✓
which then combines with oxygen to form water ✓ (2)

2.4.3

| Aerobic respiration | Anaerobic respiration |
|---|---|
| - Oxygen is required ✓ | - Oxygen is not required ✓ |
| - Large amount of energy (ATP) is released ✓ | - Very small amount of energy (ATP) is released ✓ |
| - End product are carbon dioxide and water ✓ | - End product is alcohol and carbon dioxide ✓ |

Any (2 x 2) + 1 table (5)
**(11)**

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2.5 2.5.1 (a) To determine whether carbon dioxide is given off during cellular respiration ✓✓ (2)

(b) - To increase reliability ✓✓ of the investigation (2)

(c) - Decide on sample size ✓ / number of bean seeds to use
- Decide on how to record the data ✓
- Decide on apparatus to use ✓ / access apparatus
**(Mark the first TWO only)** Any (2)

2.5.2 - Temperature ✓
- Light ✓ (2)
**(Mark the first TWO only)**

2.5.3 **B** ✓ (1)

2.5.4 - Dead bean seed were used ✓ / seeds were boiled
- to ensure that the release of carbon dioxide in test tube **A** is due to cellular respiration of germinating seeds only ✓ (2)
**(11)**

**[50]**

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**QUESTION 3**

3.1 3.1.1 (a) Arthropoda ✓ (1)

(b) Chordata ✓ (1)

3.1.2 Endoskeleton ✓ (1)

3.1.3 - Exoskeleton is external shell ✓
- Endoskeleton is an internal framework✓
- Exoskeleton does not grow ✓
- Endoskeleton grows with the body ✓ Any (2)

**(Mark the first TWO only)**

3.1.4 (a) - They are bilaterally symmetrical ✓ better coordination for movement ✓
- Has cephalisation ✓ improves sensory functioning ✓/ enables faster, more efficient navigation and environmental assessment✓ Any (2)

(b) - Provide space ✓ for development of internal organs ✓
- The fluid cushions internal organs ✓ preventing them from injury ✓
- Separates gut wall from body wall ✓ enabling to function independently ✓
- Allows for attachment of muscle ✓ for efficient movement ✓ Any (1 x 2) (2)

**(Mark the first ONE only)**

**(9)**

3.2 3.2.1 $\frac{10\ 113}{37\ 400}$ ✓ x 100 ✓ = 27,04 ✓% **OR** 32.47% + **X** + 40.49% = 100% ✓ **X** = 100% – 32.47% – 40.49% ✓ **X** = 27,04 ✓% (3)

3.2.2 - No cephalisation ✓
- Acoelomate ✓ / no blood system
- Sessile ✓ Any (2)

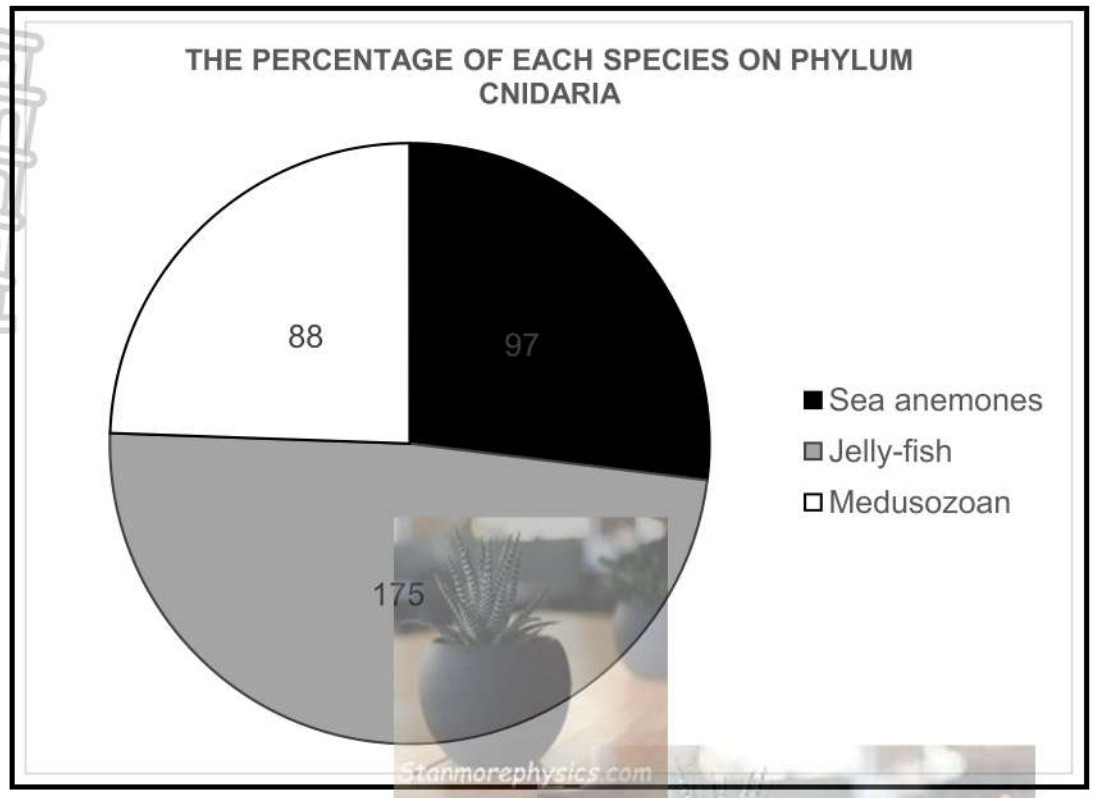
**(Mark the first TWO only)**

3.2.3 - Act as decomposers ✓ / nutrient cycling
- soil aeration ✓
- insects are pollinators ✓ Any (2)

**(Mark the first TWO only)**

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3.2.4




**Calculation**:

Sea anemones 26.9/100 x 360 = 97°
Jelly-fish 48.5/100 x 360 = 175°
Medusozoan 24.6/100 x 360 = 88°

**Criteria for marking the pie chart:**

| Criteria | Mark allocation |
|---|---|
| **Pie chart** is drawn (**T**) | 1 |
| **Caption** of the graph includes both variables (**C**) | 1 |
| **Calculations:**<br>(1 – 2) calculations correct<br>All 3 calculations correct **(CA)** | <br>1<br>2 |
| **Segments are labelled (L):**<br>Labels on chart or keys | <br>1 |
| **Portion correct size** (**S**):<br>1 – 2 portions drawn to correct size<br>All 3 portions drawn to correct size | <br>1<br>2 |

(7)

**(14)**

3.3 3.3.1 (a) Filament ✓ (1)

(b) Capsule ✓ (1)

3.3.2 Stamen ✓ (1)

3.3.3 (a) - Xylem ✓
- Phloem ✓ (2)
**(Mark the first TWO only)**

(b) Gametophyte ✓ (1)

3.3.4 - Produce flowers ✓
- Seeds enclosed in a fruit ✓ (2)
**(Mark the first TWO only)**

3.3.5 (a) - Stigma is sticky ✓
to easily trap pollen grains from insects ✓
- Large landing/surface area ✓
increases chances of trapping pollen ✓
- Positioned inside flower ✓
greater chances of trapping pollen carried by insects ✓ (2)

(b) - Have vascular/conducting tissue/xylem and phloem ✓
to transport water and nutrients to enable plant to grow taller ✓
- Have strengthening tissue ✓ for support in tall plants ✓
- Has true roots, stems and leaves ✓
for support, transport and photosynthesis in tall plants ✓ (2)

(c) - Pollen grains are carried by pollinators from anther to the stigma ✓
this allows male gamete to be carried directly to the ovules by the pollen tube ✓
- Produces seeds which protect the developing embryo ✓
allows reproduction to occur in dry conditions ✓ Any (2)
**(14)**

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3.4 3.4.1 (a) Length of the sunflower's petals ✓ (1)

(b) High volume of pollinators ✓ (1)

3.4.2 - Only sunflowers/ type of plants were used ✓
- Environment ✓/ same garden
- Duration of the investigation ✓/ number of days (3)
**(Mark the first THREE only)**

3.4.3 - Large petals ✓
- Vibrant yellow heads ✓
- Substantial amounts of nectar and pollen ✓ (3)
**(Mark the first THREE only)**

3.4.4 Group **3** ✓ (1)

3.4.5 - Has larger petals ✓
which result in highest average number of visiting pollinators ✓ (2)

3.4.6 The longer/ larger the petals, the higher the volume of pollinators attracted ✓✓ / the shorter the petals, the lower the volume of pollinators attracted (2)
**(13)**
**[50]**

**TOTAL SECTION B: 100**

**GRAND TOTAL: 150**

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