



Province of the  
**EASTERN CAPE**  
EDUCATION

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

# **NATIONAL SENIOR CERTIFICATE**

## **GRADE 11**

### **NOVEMBER 2024**

## **LIFE SCIENCES P2 MARKING GUIDELINE**

**MARKS: 150**

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This marking guideline consists of 10 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. Marking guideline 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 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.

**SECTION A****QUESTION 1**

- |     |       |                                   |         |      |
|-----|-------|-----------------------------------|---------|------|
| 1.1 | 1.1.1 | C ✓✓                              |         |      |
|     | 1.1.2 | B ✓✓                              |         |      |
|     | 1.1.3 | C ✓✓                              |         |      |
|     | 1.1.4 | B ✓✓                              |         |      |
|     | 1.1.5 | D ✓✓                              |         |      |
|     | 1.1.6 | B ✓✓                              |         |      |
|     | 1.1.7 | D ✓✓                              |         |      |
|     | 1.1.8 | B ✓✓                              |         |      |
|     | 1.1.9 | A ✓✓                              | (9 x 2) | (18) |
| 1.2 | 1.2.1 | Population ✓                      |         |      |
|     | 1.2.2 | Thallus ✓                         |         |      |
|     | 1.2.3 | Climax species ✓                  |         |      |
|     | 1.2.4 | Humus ✓                           |         |      |
|     | 1.2.5 | Rhizome ✓                         |         |      |
|     | 1.2.6 | Density-independent factors ✓     |         |      |
|     | 1.2.7 | Primary succession ✓              |         |      |
|     | 1.2.8 | Monoculture ✓                     |         |      |
|     | 1.2.9 | Hydroelectricity ✓                | (9 x 1) | (9)  |
| 1.3 | 1.3.1 | B only ✓✓                         |         |      |
|     | 1.3.2 | A only ✓✓                         |         |      |
|     | 1.3.3 | A only ✓✓                         | (3 x 2) | (6)  |
|     | 1.4.1 | Plantae ✓/plant kingdom           |         | (1)  |
|     | 1.4.2 | (a) A ✓ – Bryophytes ✓            |         | (2)  |
|     |       | (b) B ✓ – Pteridophytes ✓         |         | (2)  |
|     | 1.4.3 | - Fruits ✓                        |         |      |
|     |       | - Flowers ✓                       |         | (1)  |
|     | 1.4.4 | Phloem ✓                          |         | (1)  |
|     | 1.4.5 | Fungi ✓                           |         | (1)  |
| 1.5 | 1.5.1 | (a) Hare ✓                        |         | (1)  |
|     |       | (b) Lynx ✓                        |         | (1)  |
|     | 1.5.2 | 92 000 ✓                          |         | (1)  |
|     | 1.5.3 | 1860 ✓ and 1890 ✓                 |         | (2)  |
|     | 1.5.4 | (a) Exponential ✓/geometric phase |         | (1)  |
|     |       | (b) Death ✓/extinction phase      |         | (1)  |
|     | 1.5.5 | - Disease ✓                       |         |      |
|     |       | - Competition ✓                   |         | (2)  |

**TOTAL SECTION A: 50**

**SECTION B**

**QUESTION 2**

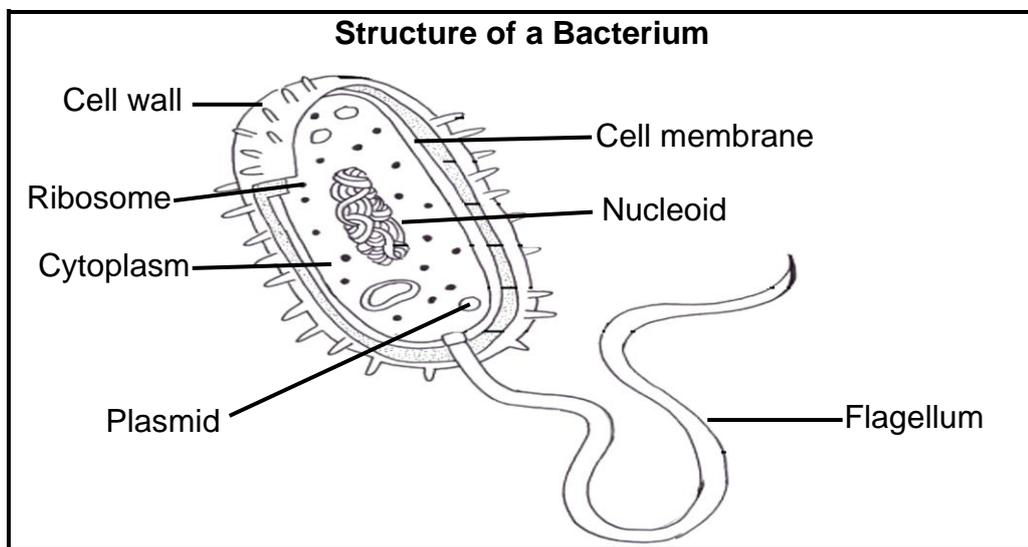
2.1 2.1.1 (a) Genetic engineering ✓/genetic modification/genetic manipulation (1)

(b) Bacteria ✓ (1)

2.1.2 - Micro-organism/bacteria reproduces asexually/mitosis ✓  
- Producing identical copies of itself ✓ (2)

2.1.3 - A plasmid/circular DNA is removed from the bacterial cell ✓  
- It is cut ✓ using enzymes  
- The insulin gene is removed from a human cell ✓ and  
- inserted into the plasmid ✓ to form the recombinant DNA ✓ (4)

2.1.4



**Guideline for assessing the drawing**

Criteria	Mark allocation
Correct diagram (D)	1
Caption (C)	1
Any three/3 correct labels (L)	3

(5)

2.2 2.2.1 Artificial ✓/acquired immunity (1)

2.2.2 (a) Preventing HIV infection ✓ (1)

(b) PrEP drugs ✓ (1)

2.2.3 5 338 women ✓/participants were used.  
**(Mark first ONE only)** (1)

- 2.2.4 - HIV negative ✓ women  
 - (Similar) age group ✓  
**(Mark first TWO only)** (2)
- 2.2.5 - Lenacapavir ✓ is the most effective PrEP drug  
 - since there is 0 /no incidence of developing HIV infection ✓  
 - thus, preventing the spread of HIV, prevention of HIV infection. ✓ (3)
- 2.2.6 - Use condom ✓/protection (1)
- 2.3 2.3.1 (a) Bee ✓/insect (1)  
 (b) Cross ✓ pollination (1)
- 2.3.2 (a) C ✓- corolla ✓/petal (2)  
 (b) B ✓- calyx ✓/sepal (2)
- 2.3.3 - Pollen grain germinates down the style ✓/forming a pollen tube  
 - Fertilises an ovule ✓ inside the ovary  
 - The fertilised ovule forms a seed ✓  
 - The ovary wall forms fruit ✓ (4)
- 2.3.4 Genetic variation ✓ (1)
- 2.3.5 - The cost of seed-based foods will increase ✓/expensive  
 - due to a decrease ✓ in seed production/decrease in insect pollination (2)
- 2.4.1 Three ✓/3 layers (1)
- 2.4.2 - Used for movement ✓/catching prey/feeding  
**(Mark first ONE only)** (1)
- 2.4.3 (a) Mesoderm ✓ (1)  
 (b) (Diagram) 2 ✓ (1)
- 2.4.4 Coelom ✓\*  
 - Allows space ✓  
 for more complex organs to develop ✓  
 - Acts as a hydrostatic skeleton ✓  
 for movement of muscles ✓  
 - It separates the endoderm and ectoderm from each other with a cavity ✓ allows the three layers to move independently ✓ of each other/ peristalsis to occur  
**(Mark first TWO only)** 1\* compulsory + (Any 2 x 2) (5)

2.4.5 - Cnidaria ✓

**(Mark first ONE only)**

(1)

- 2.5 - They act as pollinators. ✓ Honeybees and butterflies pollinate various flowers ✓
- They are decomposing dead organic material. ✓ Bacteria and fungi decompose invertebrates such as termites, beetles, flies and worms. ✓
  - They enrich the soil. ✓ Faeces of an earthworm is rich in nutrients for plants. ✓
  - They aerate the soil ✓/earthworms, ants, termites, etc. create underground tunnels. This helps to infiltrate the soil with water ✓ /and helps the plants to grow their roots deeper. ✓

**(Mark first TWO only)**

(2 x 2)

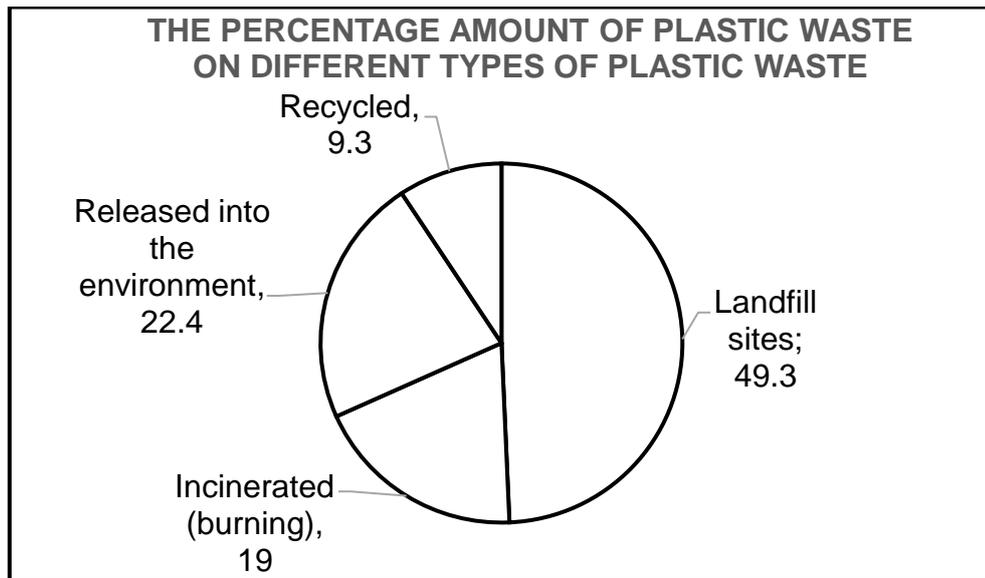
(4)

**[50]**

**QUESTION 3**

- 3.1 3.1.1 Age-gender pyramid ✓ (1)
- 3.1.2 (a) 1980 ✓ (1)
- (b) 2020 ✓ (1)
- 3.1.3 - There is a higher survival rate in adults in 2020 compared to 1980 ✓  
- which indicates better health care services/facilities ✓ (2)
- 3.1.4  $1\,424\,929\,781 \times \frac{51.2}{100}$  ✓  
  
= 729 564 047,872 ✓  
729 564 048 males (2)
- 3.1.5 (a) - The percentages of the pre-reproductive ages decreased ✓  
from 1980 to 2020 due to fewer births ✓  
- The percentages of the working-age group increased ✓ from  
1980 to 2020 due to improved economic activity ✓/more  
people employed  
**(Mark first TWO only)** (2 x 2) (4)
- (b) - Educate people about family planning ✓/contraceptives  
- Incentives/tax-rebates for people with fewer family members  
- Remove/limit child support grant ✓ (Any 2 x 1) (2)
- 3.2 3.2.1 Landfill sites ✓ (1)
- 3.2.2 - By burning waste from a landfill site to release methane ✓  
- to generate electricity ✓ (2)
- 3.2.3 - Burning plastic releases carbon dioxide ✓/harmful gases into the  
atmosphere  
- harmful incinerated/burned waste products/pollutants/toxins might be  
**inhaled** ✓/get into people's food/water  
- leading to respiratory diseases ✓/cancer/birth defects (3)
- 3.2.4 - Lack of education about recycling ✓/benefits of recycling/harm caused  
by plastic on the environment  
- Few recycling bins ✓/resources  
- Lack of incentives ✓/money for people who recycle.  
- Price of plastic is cheap ✓/people can easily buy plastic  
**(Mark first TWO only)** (Any 2 x 1) (2)

3.2.5



**Calculation:**

Landfill site	$49.3/100 \times 360 = 177.48\%$
Incineration (burning)	$19/100 \times 360 = 68.4\%$
Released into the environment	$22.4/100 \times 360 = 80.64\%$
Recycled	$9.3/100 \times 360 = 33.48\%$

Criterion for marking the graph:

Criteria	Mark allocation
Pie chart drawn <b>(T)</b>	1
Title of the graph showing both the dependent and independent variables <b>(H)</b>	1
Correct calculations <b>(C)</b>	2
Key/labels provided <b>(K)</b>	1
Correct proportion of segments <b>(P)</b>	1 (1–3 segments correct) 2 (All 4 segments correct)

(7)

- 3.3 3.3.1 - Refers to plants that are brought into an area ✓/not naturally found in a particular area (2)
- that have become successful ✓/spread very fast/outcompete other (indigenous) plants (2)
- 3.3.2 For ornamental and street tree ✓ purposes (1)
- 3.3.3 (a) Invades previously disturbed land areas ✓ (1)
- (b) Has poisonous berries ✓ (1)
- (c) Absorbs a lot of carbon dioxide from the atmosphere ✓ (1)

- 3.3.4 - The Brazilian peppertree forms a dense canopy layer ✓ over indigenous plants  
 - Blocking/preventing light from reaching indigenous plants ✓  
 - This limits growth ✓ of indigenous plants  
 - Animals/birds that rely on indigenous plants for food cannot reach them ✓  
 - Their seeds cannot be dispersed ✓/reduces pollination (Any 3 x 1) (3)
- 3.3.5 A biological control would help by:  
 - Introducing a natural enemy ✓ of the Brazilian peppertree  
 - to consume ✓/eat the Brazilian peppertree  
 - Thus, reducing its growth spread ✓ (Any 2 x 1) (2)
- 3.4 - Higher temperatures occur ✓  
 - Heat waves occur ✓  
 - The distribution of rainfall changes ✓  
 - Leading to increased rainfall in some areas ✓/experience floods  
 - While other areas experience decreased rainfall ✓/experience drought  
 - Storms are more severe ✓/frequent (Any 5 x 1) (5)
- 3.5 3.5.1 (a) Intraspecific ✓ competition (1)  
 (b) Interspecific ✓ competition (1)
- 3.5.2 - Parasitism ✓  
 Exists when one organism benefits from the relationship while the host is harmed. ✓  
 - Commensalism ✓  
 Exists when one organism benefits from the relationship while the other organism is neither harmed nor does it benefit. ✓ (2 x 2) (4)

**[50]**

**TOTAL SECTION B: 100**  
**GRAND TOTAL: 150**