



Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Departement van Onderwys
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NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2024

LIFE SCIENCES P2 MARKING GUIDELINE

MARKS: 150

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 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

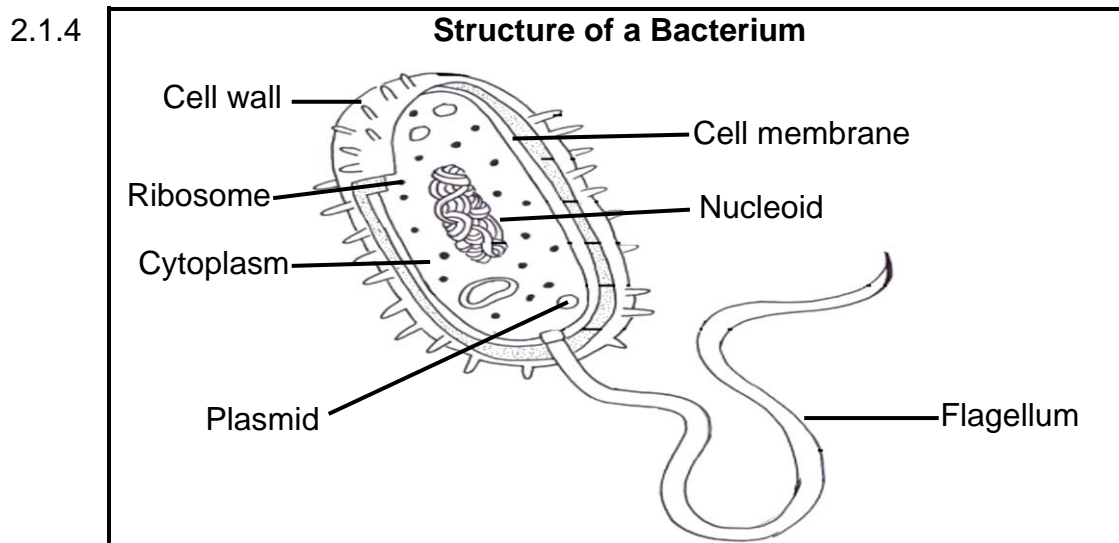
SECTION B**QUESTION 2**

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)

**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)

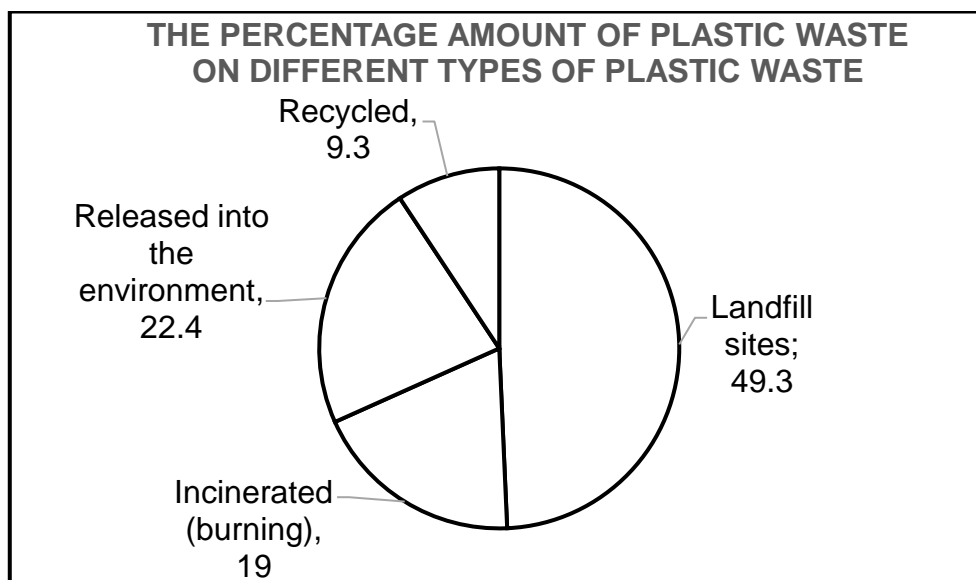
(4)

[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 (T)	1
Title of the graph showing both the dependent and independent variables (H)	1
Correct calculations (C)	2
Key/labels provided (K)	1
Correct proportion of segments (P)	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
- 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