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Province of the
EASTERN CAPE
EDUCATION

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.

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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.

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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

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SECTION B

QUESTION 2

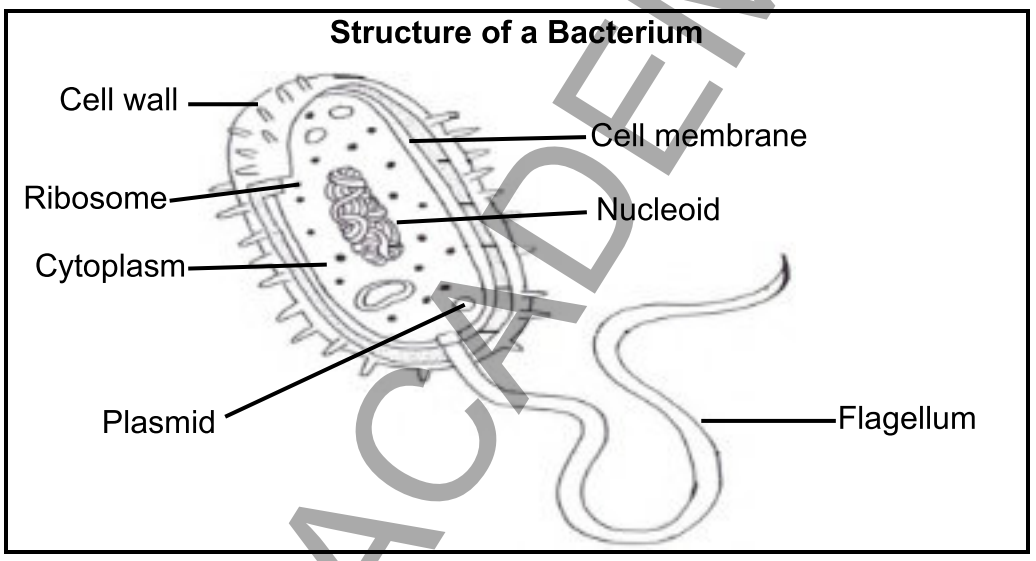
2.1 2.1.1 (a) Genetic engineering ✓/genetic modification/genetic manipulation (1)

(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)

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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)

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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]

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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 $1\ 424\ 929\ 781\ x\frac{51.2}{100}$ ✓

$= 729\ 564\ 047,872$ ✓
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

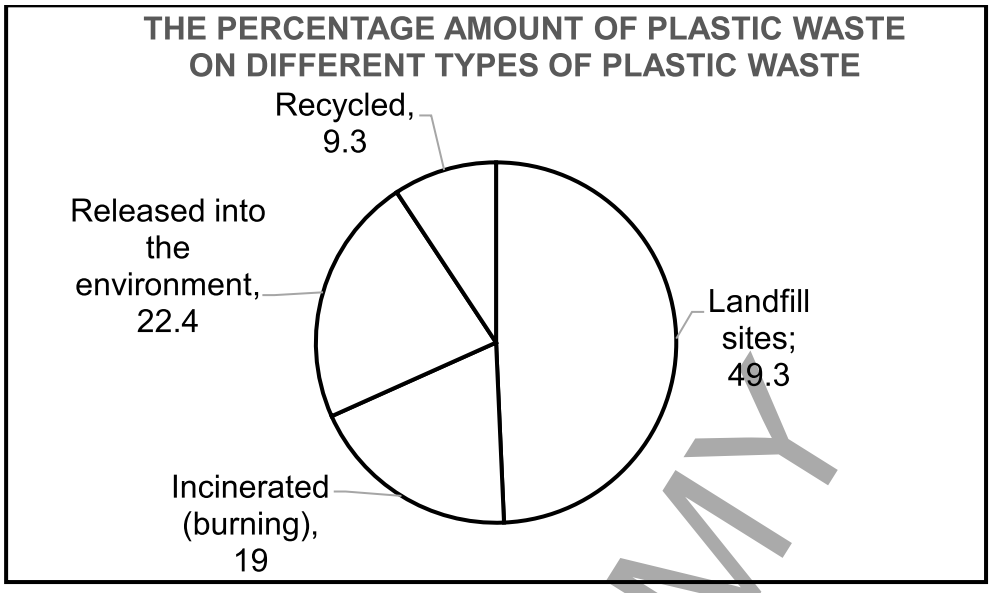
(Mark first TWO only) (Any 2 x 1) (2)

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3.2.5



Calculation:

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

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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

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