



Province of the
EASTERN CAPE
EDUCATION

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NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2025

LIFE SCIENCES P2 MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 11 pages.

PRINCIPLES RELATED TO MARKING LIFE SCIENCES

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 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 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 | B ✓✓ | | |
| | 1.1.2 | C ✓✓ | | |
| | 1.1.3 | C ✓✓ | | |
| | 1.1.4 | A ✓✓ | | |
| | 1.1.5 | C ✓✓ | | |
| | 1.1.6 | D ✓✓ | | |
| | 1.1.7 | C ✓✓ | | |
| | 1.1.8 | D ✓✓ | | |
| | 1.1.9 | C ✓✓ | (9 x 2) | (18) |
| 1.2 | 1.2.1 | Age-gender pyramid ✓ | | |
| | 1.2.2 | Seed ✓ | | |
| | 1.2.3 | Ecology ✓ | | |
| | 1.2.4 | Phagocytosis ✓ | | |
| | 1.2.5 | Emigration ✓ | | |
| | 1.2.6 | Stamen ✓ | | |
| | 1.2.7 | Biological ✓ control | | |
| | 1.2.8 | Life expectancy ✓ | (8 x 1) | (8) |
| 1.3 | 1.3.1 | Both A and B ✓✓ | | |
| | 1.3.2 | A only ✓✓ | | |
| | 1.3.3 | A only ✓✓ | (3 x 2) | (6) |
| 1.4 | 1.4.1 | Bacteria ✓/E.coli | | (1) |
| | 1.4.2 | (a) Flagellum ✓/tail | | (1) |
| | | (b) Protein spikes ✓ | | (1) |
| | 1.4.3 | (a) (Diagram) 2 ✓ | | (1) |
| | | (b) (Diagram) 1 ✓ | | (1) |
| | 1.4.4 | A ✓ | | |
| | | E ✓ | | (2) |
| | 1.4.5 | (a) Plasmid ✓ | | (1) |
| | | (b) Bacteriophage ✓ | | (1) |
| 1.5 | 1.5.1 | Radiant ✓ energy | | (1) |
| | 1.5.2 | Reflected/bounces back into space ✓ | | (1) |
| | 1.5.3 | - Carbon dioxide ✓/CO ₂ | | |
| | | - Methane ✓/CH ₄ | | |
| | | - Nitrous oxide ✓/N ₂ O | | |
| | | (Mark first TWO only) | | (2) |

- 1.5.4 (a) Global warming ✓ (1)
- (b) Deforestation ✓ (1)
- (c) Climate change ✓ (1)
- (d) Carbon footprint ✓ (1)
- 1.5.5 Burning of fossil fuels ✓/coal /oil/ natural gases (1)

TOTAL SECTION A: 50

QUESTION 2

- 2.1 2.1.1 Angiosperms ✓/flowering plants (1)
- 2.1.2 - They produce flowers ✓
- Seeds enclosed in a fruit ✓ (2)
- 2.1.3 (a) Pollen ✓ (1)
- (b) Stigma ✓ (1)
- (c) Nectar ✓ (1)
- 2.1.4 - To allow for self-pollination ✓ to occur
- Since pollen will land on the stigma ✓
- In order for fertilisation ✓ to take place (3)
- 2.1.5 Insects ✓ (1)
- 2.1.6 - It transfers pollen from male reproductive parts to the female reproductive parts ✓
Allows plants to reproduce ✓
- Cross pollination creates genetic diversity ✓/variation in plants
- Producing offspring that are resilient ✓/can withstand changes in the environment
(Mark first TWO only) (2 x 2) (4)
- 2.2 2.2.1 (a) Rhizome ✓ (1)
- (b) Fronds ✓ (1)
- 2.2.2 Sori ✓/sorus (1)
- 2.2.3
- | | |
|-------------------------------|-------------------------|
| PTERIDOPHYTES | BRYOPHYTES |
| Bigger/larger (plant sizes) ✓ | Smaller (plant sizes) ✓ |
- 1* compulsory + 2** (3)
- 2.2.4 - Xylem ✓
- Phloem ✓ (2)

- 2.3 2.3.1 (a) Chordata ✓ (1)
- (b) - Lancelets ✓
- Tunicates ✓
- Ancestor ✓

(Mark first TWO only) (2)

- 2.3.2 - Decomposition ✓ of dead organisms leads to the
- formation of humus ✓ that
- improves soil texture ✓/increases the water retention capacity of
the soil/increases soil fertility/recycles nutrients back in the soil

OR

- Burrowing into the soil leads to better aeration ✓ of the soil which
- increases the oxygen supply to the root cells ✓
- promoting better root growth ✓/preventing rotting of the root
system/better absorption of nutrients and water (3)

- 2.3.3 (a) (Presence of an) Amnion ✓ (1)

- (b) Mammals ✓ (1)

- 2.4 2.4.1 (a) Open blood ✓ system (1)

- (b) Capillaries ✓ (1)

- 2.4.2 - Nutrients ✓
- Oxygen ✓ (2)

- 2.4.3 - Organism **A** has bilateral ✓ symmetry
- Can be cut through the centre once ✓
- to produce two equal ✓/identical halves (Any 2) (2)

- 2.4.4 (a) Coelom ✓ (1)

- (b) Haemocoel ✓ (1)

- 2.4.5 - Allows the various body parts to be specialised ✓/perform
different functions
- Allows for independent movements ✓ of sections of the body
- Allows for growth ✓
(Mark first TWO only) (Any 2) (2)

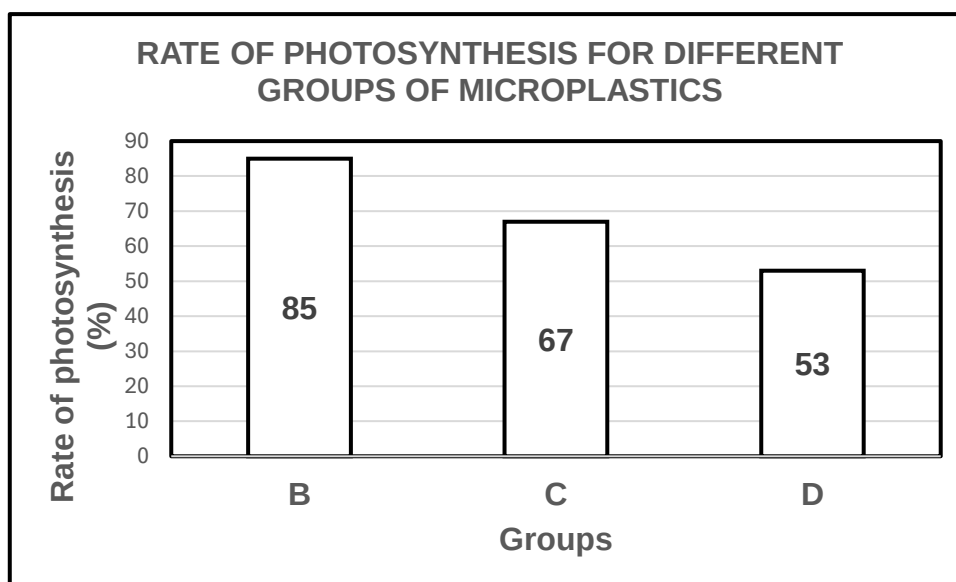
- 2.5 2.5.1 It increases ✓ (1)
- 2.5.2 (a) 90 ✓ arbitrary units (1)
- (b) Artificial ✓/acquired immunity (1)
- (c) White blood ✓ cells/lymphocytes (1)
- 2.5.3 - To increase ✓
 - the reliability ✓ of the results (2)
- 2.5.4 A suspension/weakened/dead form of the pathogen ✓ /virus/
 bacteria/antigen (1)
- 2.5.5 - Antibody levels are higher ✓ for the third dose
 - indicating a stronger immune response ✓
 - which prevents Covid-19 infection ✓ (3)
- [50]**

QUESTION 3

- 3.1 3.1.1 - Organisms of the same species ✓
 - Occupying the same habitat ✓
 - At the same time ✓/able to interbreed (3)
- 3.1.2 As the period (in years) increases the population size decreases ✓✓ (2)
- 3.1.3 $\frac{610\,000 - 505\,000}{505\,000} \times 100 = 20,79\%$ ✓ (3)
- 3.1.4 - A decrease in the economy/GDP
 (Fewer/less taxes collected) due to a decrease in labour force ✓/
 workers
 - Reduction of skills ✓/variety/innovation
 Due to fewer younger individuals ✓
 - Pressure on health facilities ✓
 Due to an increase in an aging population, ✓ thus require medical
 care
 - Increased need for social programs ✓
 (With an aging population), which will put a strain on limited financial
 resources ✓due to fewer workers
(Mark first TWO only) (Any 2 x 2) (4)
- 3.1.5 - Immigration ✓
 - High birth rate ✓ (1)
(Mark first ONE only)
- 3.2 3.2.1 - Dry ice ✓
 - Sodium chloride ✓ (2)
- 3.2.2 Dam ✓ (1)
- 3.2.3 - Water availability will increase ✓
 - Leading to constant supply of water for irrigation ✓ (2)
- 3.2.4 - Research alternative methods ✓/e.g. desalinate seawater
 - Fix/maintain all waterworks ✓/pipe systems
 - Locate aquifers ✓/boreholes/underground water
 - Remove alien plants ✓ in the catchment area of the dam
 - Recycle grey water ✓
(Mark first THREE only) (Any 3) (3)
- 3.3 3.3.1 (a) Concentration of microplastics ✓ (1)
 (b) Rate of photosynthesis ✓ (1)
- 3.3.2 - Dissolved oxygen production ✓
 - Chlorophyll fluorescence ✓
 - Carbon dioxide uptake ✓ (3)

- 3.3.3 (a) - It served as a control ✓
 - to compare whether the concentration of microplastics had any effect on the rate of photosynthesis ✓ or not (2)
- (b) - To ensure that other factors affecting the rate of photosynthesis are kept constant ✓/only the concentration of microplastics should have an effect on the rate of photosynthesis
 - to ensure the validity ✓ of the investigation (2)

3.3.4



Rate of photosynthesis for different groups/concentrations of microplastics

CRITERIA	ELABORATION	MARK
Type of graph (T)	Bar graph drawn	1
Caption of graph (C)	Both variables included	1
Axes labels (L)	X- and Y-axis correctly labelled with units	1
Scale for X- and Y-axis (S)	- Equal space and width of bars for X-axis and - Correct scale for Y-axis	1
Plotting of co-ordinates (P)	- 1 to 2 co-ordinates plotted correctly - All 3 required co-ordinates plotted correctly. - All 4 co-ordinates plotted correctly	1 1 2

Histogram or line graph drawn

- Lose marks for type of graph

Transposed axes

- Can get full credit, if axes labels are also swapped and bars are horizontal
- If labels are not corresponding, then lose marks for labels and scale
- Check that the plotting is correct for the given labels

(6)

- 3.3.5 - Food security will decrease ✓
due to reduction/decrease in the rate of photosynthesis ✓ (2)
- 3.4 3.4.1 - Mutualism ✓
- Both organisms benefit from the relationship ✓/clownfish gets
shelter while sea anemone tentacles are cleaned (2)
- 3.4.2 - Commensalism ✓
- Parasitism ✓ (2)
- 3.4.3 (a) Powerful venom ✓ (1)
- (b) (Special) mucus layer on their skin ✓ (1)
- (c) Central single digestive opening ✓ (1)
- 3.4.4 - An increase in the population size of clownfish ✓ will cause
- clownfish to compete amongst themselves ✓
- for limited resources ✓/sea anemone/shelter
- less breeding ✓ occurs among clownfish which are the weaker
competitors
- clownfish die ✓ due to predation/environmental resistance
- population growth rate decreases ✓/logistic growth form occurs (5)
- [50]**

TOTAL SECTION B: 100
GRAND TOTAL: 150